US \$2.50 · UK £1.95 · CANADA \$2.95 · JANUARY 1992 **COMBI-PLAYERS** Head-to-Head Tests of **Three Affordable CD/Videodisc Players** MLD **ROOM ACOUSTICS How to Get Better** THE PART BOARD BUFFL LINEAR OF Sound Without Moving 0 MARSHALL **CRENSHAW** Retro-Rocker 00:00 **TEST REPORTS Technics CD Player** Harman Kardon Receiver OPIONEER SON LA RATER CLD-31 **Parasound Preamplifier** Infinity Speaker System ELITE Loserbise O CHICAGO PONISAILLE KY WROOD PLANEN BUT WE DAVID S BUCHANAN SQ AAM 10AV 10DQ 5777-SPSOP #BKBDHMY****CAR-RT SORT**CR75



Presenting The Distinctive Acoustics Of Seven Different Environments In One Distinctive CD Carousel Changer.



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Why accept a machine that can only change your discs, when you can own one that will also change your acoustic environment? Introducing the CDP-C87ES, a 5-disc carousel changer with Digital Signal Processing (DSP). Thanks to DSP equalization and DSP reverb, this remarkable CD Changer can actually replicate the acoustic environment appropriate for just about any music. So you can hear Haydn in a Hall, a chorale in a Church, and a Stratocaster® in a Stadium. Which gives even the most familiar CD's a newfound richness of ambience and texture.

And once you choose the right environment for a CD, store it in the CDP-C87ES Custom File™ memory. The changer will then automatically recall your programmed environment every time you play that disc.

Sony engineers can count among their distinguished inventions the CD carousel, the CD player,

even the CD itself. It's no surprise then, that the C87ES and its fellow DSP changers, the C77ES and C67ES also incorporate an advanced complementary HDLC™ converter system. It overcomes low-level non-linearity—the number one sonic shortcoming in CD players* So the sound of these changers is not only rich, it's refined.

Sony ES matches this technological enlightenment with an enlightened three-year limited warranty on parts and labor. See your authorized ES dealer for details. To find that dealer, call 201-930-7156 during East Coast business hours. And discover that in music at least, you really can improve the environment.

It's the Digital Masterpiece Collection, featuring the very best music from American Gramaphone, GRP, Telarc, and Windham Hill. This offer is only available from your authorized ES dealer, who can provide you with all the details.





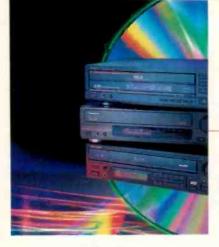
Mat Vol

Surround Sound decoders and acoustic environment simulators are supposed to give you a heightened sense of reality when you're listening to music or watching a movie. Unfortunately, most of their effects circuitry robs the original performance of fidelity.

That's why Denon created the AVC-3020 Surround Amplifier and the AVR-810 and AVR-610 Surround Receivers. Their special Dolby® Pro-Logic® Surround Sound processor outperforms all previous analog *or* digital decoding circuitry in terms of delivering true *high fidelity*. You'll hear greater dynamic range, more channel separation, lower distortion and precise low level steering—the ability to place sounds exactly where the director intended them.

Remember, without high fidelity, there can be no "reality." And what's the point of a Surround Sound system, if it doesn't sound real?

34504 Call 1-800-346-8774 DENON The first name in digital audio.



Cover

See page 50 for comparative tests of the Denon LA-2000, Panasonic LX-101, and Pioneer Elite CLD-31 CD/videodisc combi-players.

Photograph by Jook P. Leung

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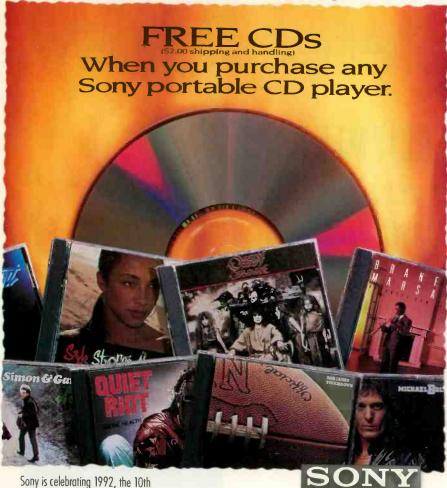
MUSIC

59 Marshall Crenshaw "I'd be a liar if I said I didn't want people to pay attention to me" · by Sara Nelson Best Recordings of the Month

James Taylor, Bruckner Symphony No. 9, Lloyd Cole, and Mozart Concertos for Two Pianos



A Very Hot Offer From Sony.



Sony is celebrating 1992, the 10th anniversary of the CD, with a red hot offer.

Buy any Sony Discman® Portable CD Player or Sony Portable CD/Radio/Cassette Recorder between December 27, 1991 and April 5, 1992 and Sony will pick up the tab for up to 3 hot CD titles. So start shopping around for your new Sony. And as soon as you're sold on a particular model, check your model number on the chart below to see how many hit CDs you're entitled to.

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Brute Springsteen	Wild, Innocent,		Sade	Stronger Than Pride	44210
	E. Street Shuffle	32432	Aerosmith	Gems	44487
Julia Iglesias	Julio	38640	James Taylor	Л	34811
Johnny Mathis	Johnny's Greatest Hit	34667	Sorah Vaughon	Brazilian Romance	42519
Siman & Garfunkel	Sounds of Silence	09269	Big Audio Dynamit		40705
Neil Diamond	Heartlight	38359	Bob James	Touchdown	35594
Ozzy Osbourne	No Rest for the Wicke	d 44245	Ston Getz	The Best of Two Worlds	33703
Quiet Rigt	Mental Health	38443	Plocido Domingo	Perhaps Love	37243
Ted Nugent	Ted Nugent	33692	Branford Marsalis	Romance For Saxophone	
Marvin Gaye	Midnight Love	38197	Judas Priest	Sin After Sin	34787
Isley Brothers	Greatest Hits, Vol. 1	39240	Leonard Bernstein	Egyorite Overtures	46713

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Some on-screen and VCR menu systems utilize upper case letters hat are hard to read, mysterious instructions, o range, meaningless abbreviations that have to be psych to understand

Our new ViewPoint System prefers English.

SET-UP

TIME SET

CH PROG

ERASE AD TV CATV

PICT PREF

AIR/CABLE

CHANNEL CAPTION

USE (AV) & RETURN (EXIT) TO QUIT

Look at competitive on-screen displays and you may see something like this." Your choices are:
Set the clock

Memorize channels
Add/delete channels
Use Home Theater: off
Rename the inputs
Name the channels
Use ADJUST to select.
Then press ENTER.

The same instructions in the easy-to-understand language of Mitsubishi's ViewPoint System.

Press MENU to return to TV Main Menu.

When Mitsubishi created the concept of Home Theater, we figured it didn't make sense for people to sit down in front of the most incredible sights and sounds television could offer, only to focus most of their attention on making the thing work.

We wanted our technical expertise to enhance the experience, not to complicate it. To work for good, not evil.

This year, we're introducing one of the most remarkable examples of our philosophy to date.

An advanced on-screen operating system called ViewPoint which, using our latest interface technology, lets you control your Home Theater System without distracting from the enjoyment you bought it for.

The System is so elegantly

simple, two buttons are all you need to operate it.

The on-screen information is displayed in upper and lower case letters for better readability, and communicates in a familiar language: English.

That means fewer abbreviations to decipher. Functions like "Time Set" and "Ch Prog" become "Set the clock" and "Memorize channels."

For more complex operations, a logical question-and-answer format guides you through.

Our unique point-and-click interface allows you to simply point to the on-screen item you need. While a P.I.P. window lets you monitor the TV picture as you use any of the menu features.

ViewPoint is available with many of our big screen TV's, our

31" and 35" direct-view TV's, and three of our VCR models.

And because all Mitsubishi components are designed to integrate fully—not just from component to component, but from year to year, as far back as 1986—ViewPoint is also compatible with our previous menu systems.

So whether you're looking for a complete system, adding to an existing one, or building one a few components at a time, everything works together not only esthetically and electronically, but functionally as well.

Which is exactly what you should expect from a great Home Theater system.

At least, that's our viewpoint.



Choosing a CD Player

Daniel Kumin's "Fast Search: How to Choose Your Next CD Player" in November was very informative, but he left out one feature that is now available only on players from Denon, a pitch control. I have perfect relative pitch, and one of my chief complaints about compact discs is that some of them are recorded noticeably off speed, such as the Beatles' "A Hard Day's Night." It drives me up the wall, and I congratulate Denon for making a pitch control available on reasonably priced players.

RAYMOND J. MORAN Fords, NJ

Daniel Kumin shrugs off indexing as a gimmick. I have seen lengthy reviews of CD players that explained rapturously a feature known as shuffle play, which to me is truly an idiotic gimmick, but never mentioned whether the player has an indexing feature. I have a couple of hundred CD's with indexing. A lot of indexing is done stupidly, but some of it is truly valuable, and this inexpensive feature should be on any CD player.

JOHN D. ROBERTS Willington, CT

I am interested in adding a laserdisc player to my system, and the section of Daniel Kumin's article on combi-players really caught my eye. He mentions that "a few" manufacturers are adding the CD changer option to their combi-players. Great—but which ones?

JEFF MORIVA Edgerton, WI

Currently there is only one such player, the Pioneer CLD-M90, but the recently discontinued Sharp MV-D100 (a threedisc changer) may still be in some stores.

"Authentic" Brahms

David Patrick Stearns's enthusiastic review (November "Best Recordings of the Month") of John Eliot Gardiner's new and supposedly "authentic" recording of the Brahms German Requiem shows the reviewer's gullible acceptance of all the nonsense that the zealots of authenticity have been attempting to spread in recent years.

We have really carried things to absurd lengths in insisting upon the use of period instruments in *Brahms* of all composers. What next? An "authentic" performance of Strauss tone poems or of Stravinsky's early ballet scores?

Unlike Mr. Stearns, I have never found modern-instrument performances of the *German Requiem* to be "turgid" or "bloated." And how do we know that Brahms would not have been delighted

by some of these "inauthentic" performances if he could hear them?

ROBERT BERGER Levittown, NY

Data Compression

Ken Pohlmann's November "Signals" column, "Cn U Rd Ths Sntnce?," confuses data compression with data reduction. Data compression does not decrease in any way the amount of information present in the recording, but it does allow it to fit into less space. Data reduction is a collection of techniques to take out information that isn't important to the end result. Data reduction is used in the Mini Disc and Digital Compact Cassette formats.

Data compression is not much used in audio recording because the algorithms take too long to run. Data-reduced recordings don't need time-consuming restorative algorithms, and they can thus be played back in "real time," which is the only acceptable way.

KENNETH H. FLEISCHER Los Angeles, CA

In fact, DCC achieves its 4:1 data shrinkage through a combination of data reduction and data compression. Mini Disc gets approximately 5:1 shrinkage, but we don't know enough about the details of the system yet to say whether anything other than data reduction is involved. In common parlance, where extreme precision is not essential, the term "data compression" covers both types of shrinkage.

Truncated Applause

In his November review of Telarc's "The Legendary Oscar Peterson Trio Live at the Blue Note," Chris Albertson referred to "inconsiderate editing" that cut the applause abruptly at the ends of the tracks. I edited this recording, and besides a fade up in the beginning [of the concert] and a fade down at the end, there was absolutely no cutting done.

ELAINE MARTONE Vice President, Telarc Cleveland, OH

Chris Albertson replies: I listened to the CD again, twice, and heard no abrupt cuts. Apparently the effect was a glitch in the machine I used the first time (a different one). My profuse apologies.

Speaker Placement

I am very disappointed by your response to the question regarding speaker placement posed by Mark Bianco in October "Letters." Personally, I was appalled by the way the Infinity 9 Kappas were installed by Mr. and Mrs. Jay

(August "Systems"). The 9 Kappas have a rear-firing tweeter and supertweeter. Building them into a cabinet totally precludes rear radiation, and it will also adversely affect the forwardfiring drivers by altering their frequency response, their vertical and horizontal dispersion, and their ability to create a sense of depth. It will also provide very poor stereo imaging and increase localization of the speakers-problems compounded by the speakers being too close together. They are also far too high above the floor, which will cause a serious loss of high frequencies unless the Jays listen perched on stools 41/2 feet tall. And because the speakers are not placed on the floor as the designers intended, there are likely to be some unpleasant resonances. I can assure you that the sonic anomalies associated with this particular installation will indeed be measurable; they will be noticeable; and they will not be pleasing.

In any event, "hiding" a speaker with the performance and beauty of the Infinity 9 Kappa is an audio sacrilege. If people want to bury their speakers in a custom cabinet, that is their business, but they should be informed up front that they are quite likely burying the edge in performance they paid big bucks to get.

> DAVE BEAUCHAMP Monterey, IN

In response to Mark Bianco's letter in October, you state that speakers do not generate heat. Not so! Any device converts some of the energy it receives to heat. The typical speaker dissipates 99 percent of its electrical energy input as heat. It is because of the large ratio of cabinet surface area to average input that a speaker cabinet doesn't feel hot.

RICHARD L. COLE Ann Arbor, MI

Perhaps we should have said that speakers do not generate significant amounts of heat. Considering that 99 percent of the time a speaker's power input is likely to be less than 25 watts, even 99 percent inefficiency is not going to generate much heat.

Correction

The address given for Sota Industries in December "New Products," page 17, is no longer correct. The company is now at 1318 B. Marquette Dr., Romeoville, IL 60441.

We welcome your letters. Please address correspondence to Editor, STEREO REVIEW, 1633 Broadway, New York, NY 10019. You should include your address and telephone number for verification. Letters may be edited for clarity and length.

PERHAPS THE BEST WAY TO EXPLAIN THE NEW PHILIPS COMPACT DISC INTERACTIVE SYSTEM IS TO EXPLAIN WHAT IT'S NOT.

First of all, this is not your normal, everyday Co

What you're looking at is not a CD.

Well, not exactly. It's actually a new kind of CD called a CD-I. You've probably already read that CD-I's were coming. And you probably already know that CD-I stancs for Compact Disc Interactive. What you may not know is that just one 5" disc can contain the combined works of Shakespeare, Dickens and Mark Twain. It can bring to life the paintings and photographs of the great museums of the world. And it can enable your children to exercise their creativity by using television as an interactive educational tool. CD-I technology is not like anything you've seen or heard before. And the possibilities it creates are, truly, limited only by your imagination.

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When the engineers at Philips figured out how to turn an audio signal into a series of digital impulses, a format was born that provided an everlasting alternative to the LP. Of course, what can be done to an audio signal can be done to a video signal as well. Thus, the advent of CD-I. A combination of both technologies, the Imagination Machine is greater than the sum of its parts. As a CD player, it provides stunning musical clarity thanks to Philips "Bitstream processing." And, as a CD-I player, it creates an exciting new world of interactive audio/video, animated graphics and text. A world you can manipulate and control.

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Imagine taking your family on a leisurely stroll through the back rooms of the Smithsonian.

Imagine hearing an ABC golf announcer comment on the great chip shot you

imagine it's Saturday
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your kids are
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Push "Make A Movie" on the "Sandy's Circus" CD-I disc and your children become their own writers and directors, creating cartoons that let their imaginations run wild.



The interactive nature of the "Sandy's Circus" CD-I disc brings the adventures of Sandy the Sea Lion to life in new ways, time after time.



Does Sandy stay with the animals or does he join the clowns? Your children decide how the story will end with the easy to operate thumbstick remote.

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groups such as Rand McNally, Time-Life and
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PHILIPS



NEW PRODUCTS

Infinity

Infinity's new Renaissance speaker series includes the Model 80 (far right and near left) and Model 90 (center). Both have woofers using the new Infinity/Watkins dual-voice-coil system and a proprietary injection-molded-graphite (IMG) polypropylene cone. The 10-inch woofer in the Model 90 is complemented by a 6-inch mid-bass driver and Infinity's planar EMIM midrange and planar EMIT tweeter. The Model 80 has an 8-inch woofer, the EMIM midrange, and the EMIT tweeter. Frequency response is rated as 35 to 45,000 Hz ± 3 dB for the Model 80, 27 to 45,000 Hz ± 3 dB for the Model 90. Both have a rated sensitivity of 87 dB and a nominal impedance of 4 ohms. Dimensions are 15 x 41½ x 11 inches for the Model 80, 17 x 49 x 12½ inches for the Model 90. They are available finished in blonde oak or black ash, or in high-gloss black lacquer for \$600 a pair extra. Prices: Model 80, \$2,000 a pair; Model 90, \$3,200 a pair. Infinity, Dept. SR, 9409 Owensmouth Ave., Chatsworth, CA 91311.





Hafler

The Model 945 preamplifier/tuner, part of Hafler's new 9000 series of components, features pure Class A circuitry including all-discrete JFET (junction field-effect transistor) line amplifiers, which are said to have "tube-like" sonic qualities. The FM section has high-linearity RF and IF stages, eighteen station presets, and a multiplex filter to eliminate 19-kHz stereo pilot-signal artifacts. The preamp section has defeatable tone

controls, a relay-muted line amplifier, and inputs for three audio/video sources, two tape decks, and a CD player. An infrared remote control is supplied. The Model 945 carries Hafler's seven-year warranty. Finish is black on the 17-inchwide version, silver on the 19-inch rack-mountable version. Price: \$600 for either version. Rockford Corp. Hafler Division, Dept. SR, 613 S. Rockford Dr., Tempe, AZ 85281.

Aiwa

Aiwa's HD-S100 portable digital audio tape recorder features 1-bit digitalto-analog conversion and includes the Serial Copy Management System, which permits first-generation digital copies of digital recordings. It has a three-motor drive mechanism, optical and coaxial digital inputs, and optical digital outputs, as well as analog inputs and outputsincluding a microphone input with three attenuation settings. There are dual recording-level controls and a functionhold switch. Dimensions are 31/8 x 13/4 x 61/4 inches and weight just over 1 pound without the rechargeable battery pack. A wired remote control is supplied. Price: \$950. Aiwa America, Dept. SR, 800 Corporate Dr., Mahwah, NJ 07430.



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CD player includes offer for free additional 6-disc magazine.

NEW PRODUCTS

Monitor Audio

The Monitor Audio Studio 20 infinitebaffle speaker system uses a 61/2-inch woofer whose ceramic-coated, aluminum-alloy cone is said to offer rigidity and self-damping properties over its entire operating range. The 2-inch dome tweeter is made from an aluminum alloy that is gold-anodized to insure correct stiffness and damping. Frequency response is given as 30 to 30,000 Hz ±3 dB, sensitivity as 88.5 dB. Nominal impedance is 8 ohms. The Studio 20 can be biwired. Its medium-density-fiberboard cabinets are veneered both inside and outside to reduce warpage over time. Finishes include rosewood, black ash, oak, walnut, and black lacquer. Dimensions are 32 x 8 x 10 inches, and weight is 35 pounds. Price: \$5,000 a pair. Distributed by Kevro International, Dept. SR, P.O. Box 1355, Buffalo, NY 14205.



Pioneer

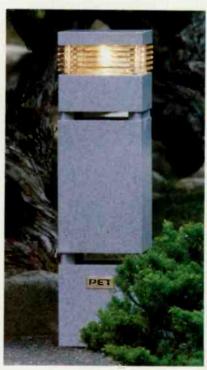
Part of Pioneer's PET line of outdoor speaker/lighting systems, the two-way acoustic-suspension CSL-1000 has a 61/2inch woofer and two 31/2-inch tweeters. The polypropylene driver cones have radial carbon-fiber reinforcements and styrene butadiene rubber surrounds. features that are said to protect them from weather. Bandwidth is given as 35 to 25,000 Hz and sensitivity as 86 dB. Nominal impedance is 8 ohms. The lowvoltage lamp is said to be long lasting and inexpensive to operate. The CSL-1000 measures 91/2 x 351/2 x 91/2 inches and weighs about 60 pounds. Made of an acrylic polymer resin, the enclosure is available in Summer Dusk, Midnight Granite, and Desert Sandstone finishes. Price: \$999 each. Pioneer Electronics Technology, Dept. SR, 1800 West Holt Ave., Pomona, CA 91768.



Technics

The Technics SL-PD807 front-loading carousel CD changer has several unique programming features. It can play the first tracks from all of the five loaded discs consecutively, followed by all the second tracks, the third tracks, and so on. Spiral Random Play randomly selects one track from each disc in sequence, then returns to the first disc and repeats the process. The SL-PD807 can also play a random selection of tracks all

from one disc. Up to thirty-two tracks can be programmed, and a track, a disc, or a programmed sequence can be repeated. Technical features include the Technics MASH 1-bit digital-to-analog converter and a digitally controlled servo system that automatically adjusts the laser position to compensate for warps, scratches, or other disc irregularities. Price: \$280. Technics, Dept. SR, One Panasonic Way, Secaucus, NJ 07094.



A Land Market Barrier Barrier

Alphasonik

The Alphasonik FA-100 car power amplifier has an internal cooling fan that forces air through the entire heat sink. It is rated at 50 watts per channel rms into 4 ohms and is said to be stable down to 1 ohm in stereo. Total harmonic distortion is given as 0.01 percent. Input sensitivity is variable from 100 millivolts to 1 volt. The low-profile extended shell conceals all wiring and electrical connections for

clean installation. The FA-100 has goldplated RCA inputs, gold-plated speaker and power terminals for use with largerdiameter wire, a power on/off LED, and Alphasonik's variable Permatect circuitry to protect against speaker shorts, abnormal loads, or overheating. It measures 8½ x 2½ x 10¾ inches. Price: \$295. Alphasonik, Dept. SR, 701 Heinz Ave., Berkeley, CA 94710.

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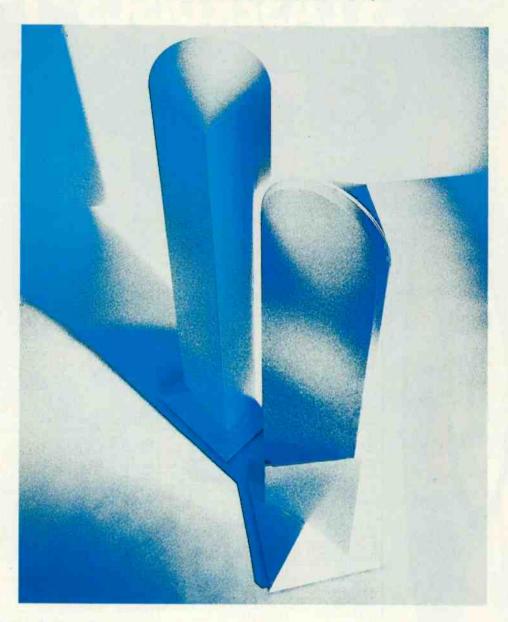
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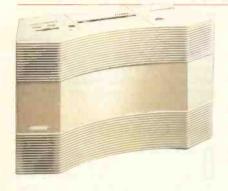


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PRODUCTS



Bose

The Bose Acoustic Wave Music System Series II includes a compact disc player, an AM/FM radio, and built-in biamplified loudspeakers with factoryset equalization. The white molded-plastic enclosure has champagne-gold trim and recessed handles for portability. The system weighs 15 pounds, and a padded carrying case with shoulder strap is optional. It can run from house current or D-cells; a rechargeable battery pack and an adaptor to power it from a vehicle's cigarette lighter are available as options. Other options include a microphone for sing-along or PA use. The Acoustic Wave Music System is sold factorydirect only with a fourteen-day free home trial. Price: \$997. Bose, Dept. SR, The Mountain, Framingham, MA 01701; (800) 282-2673

Sony

The Sony TC-C5 carousel five-cassette changer offers up to 71/2 hours of uninterrupted playback or recording. The deck uses the same heads and threemotor drive system found in Sony's high-end decks. Features include "all rewind" (automatically rewinds all five tapes simultaneously), "quick auto reverse," and "relay play/relay record" (continuous playback or recording of both sides of as many as five tapes). The

TC-C5 and a compatible Sony CD player can be synchronized to facilitate disc dubbing. The playback order of the five cassettes can be programmed; "shuffle play" selects a random order. Among other features of the changer are Dolby B and Dolby C noise reduction, Dolby HX Pro headroom extension, and a supplied remote control. Price: \$400. Sony, Dept. SR, Sony Dr., Park Ridge, NJ



MTX Soundcraftsmen

The Pro-Control Two preamplifier from MTX Soundcraftsmen features digital CMOS (complementary metal-oxide semiconductor) switching, which is said to provide noise- and distortion-free operation. It has inputs for a compact disc player, tuner, turntable, videocassette recorder, laserdisc player, and tape deck. Total harmonic and intermodulation distortion are rated as less than

0.008 percent, and signal-to-noise ratio for high-level inputs is rated as 100 dB. The tone controls have turnover frequencies of 100 and 10,000 Hz, and the volume control is sealed and tapered to operate over a 300-degree rotation. The rear panel has one switched and one unswitched AC outlet. Price: \$329. MTX Soundcraftsmen, Dept. SR, 555 W. Lamm Rd., Freeport, IL 61032.



B&W Loudspeakers

The B&W Matrix 803 speaker has a vented 7-inch woofer with a Cobex cone, a 7-inch midrange driver with a Kevlar cone, and an unenclosed 1-inch ferrofluid-cooled metal-dome tweeter. Like other speakers in B&W's 800 Series, the Model 803 incorporates an electronic high-pass alignment filter. Frequency response is given as 23 to 22,000 Hz -6 dB, sensitivity as 90 dB, and nominal impedance as 8 ohms. The floor-standing speaker measures 40 x 111/4 x 131/8 inches and weighs 58 pounds. It is available finished in black-ash, natural-oak, rosewood, or walnut veneer or semigloss black or white. Price: \$3,300 a pair. B&W Loudspeakers, Dept. SR, P.O. Box 653, Buffalo, NY 14240.



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AUDIO Q&A

by Ian G. Masters

Dolby VCR

My receiver has a built-in Dolby Pro Logic decoder. To use it, do I need a VCR that has Dolby as well?

TRAVIS DEAN Dexter, MO

No. When applied to a VCR, "Dolby" normally means Dolby B noise reduction rather than Dolby Surround Sound. The noise reduction is used on the conventional linear sound-track of the videotape, and its presence usually means that the VCR doesn't offer AFM (or hi-fi) sound. Although the surround decoder can be used with any Dolby Surround-encoded stereo sound-track (tracks that are not hi-fi are almost always mono, by the way), it delivers its best only with a high-quality audio signal such as VHS Hi-Fi, which doesn't need extra noise reduction.

Even better would be digital sound, and a method of adding it to videotapes is in the works. It already exists with videodiscs, of course, the majority of which are released with digital audio.

Vintage System

I am assembling a vintage audio system based on a single JBL Hartsfield horn speaker I inherited. My amplifier is also a classic, although stereo, putting out 19 watts per channel. The preamplifier has an extra L + R output, so it seems to me that I can still use my stereo sources, although they will be audible only in mono, but I would like to use both my amplifier channels to drive the Hartsfield to take advantage of the extra power. How should I go about it?

ALEX COZAC Ariel, Israel

A Some stereo amplifiers permit "bridging" or "strapping" of their outputs to produce a mono signal that is, typically, somewhat greater than the sum of the two original channels. But the facility has to be designed into the amplifier; if you try it with a model that doesn't provide for bridging, it's likely to be damaged. The owner's manual of your amplifier should tell you whether or not bridging is a possibility. If it doesn't address the topic (or if you don't have the manual), assume you can't do it.

In any event, it may not be necessary. The output specifications for even quite old high-end amps would have assumed that both channels were driven; by using only one, you should be able to develop a bit more than its rated output in that channel. Even if you could double the power, that would only give you a 3-dB advantage, which would only just be

audible. Fortunately, you needn't worry too much about extra power. Those old horn speakers could produce far more volume than you would ever want from only a few watts.

Surround CD's

Many ordinary CD's seem to have ambience information that my surround-sound decoder extracts very distinctly. Do some compact discs actually have rear-channel material encoded on them, or am 1 just receiving a nice side effect of the Dolby Surround system?

JACK MANGOLD Largo, FL

A few CD's are encoded with Dolby Surround, notably several moviemusic compilations by Henry Mancini on RCA, but they are very rare. Practically all stereo recordings have at least some out-of-phase material on them, however, and that's what the Dolby Surround decoder detects and feeds to the ambience channels. Unlike encoded discs, in which carefully controlled and precise amounts of out-ofphase material are mixed with the main signal, in a conventional recording the left-minus-right information is more or less accidental. No one has predetermined just what will be extracted when you listen to such a disc through your Dolby Surround decoder, but the effects can be very enjoyable and sometimes quite dramatic.

Compression and Expansion

I understand that a compressor makes loud sounds softer and soft sounds louder, and I know that an expander does the opposite, making louds louder and softs softer. I have been told that I should use both in my system, back to back. If the two devices cancel each other, what's the point of using them at all?

W. RAMOS Bronx, NY

A compressor can be useful in a home or car system for reducing the dynamic range of such wide-range sources as compact discs so the pianissimo passages don't disappear in noisy environments. And an expander may be able to restore the dynamics of programs that have been overly compressed in the

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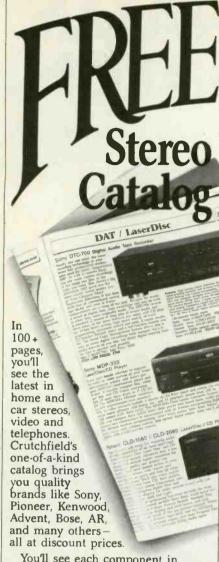
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recording or broadcasting process. Both devices require a light touch, however. as overuse can make merely flawed sound become truly unpleasant, especially since you never really know how much processing has been applied at the other end.

The use of compression and expansion together can be helpful in situations where a noisy recording or transmission medium, such as analog tape, is being used in between. The various forms of Dolby noise reduction, in fact, are frequency-dependent compression/expansion systems. But there's not normally any good reason to run the output of a compressor directly to the input of an expander, or vice versa.

Powered Antenna

I use an indoor powered FM antenna. which sounds good and is capable of removing practically all the background noise on most stations. Are there any practical or theoretical disadvantages to using an antenna of this sort?

> RICHARD ALLYN KEITH Sepulveda, CA

There are no real disadvantages, in the sense that such an antenna might somehow degrade the signal. As you have found, the amplification does a good job of cleaning up noise on marginal FM signals. But there are limitations: Below a certain threshold, a powered antenna will simply amplify the noise along with the desired signal. The only remedy for that is height, and that is usually best achieved with a rooftop antenna

Channel Orientation

I have been told that when you connect speakers, the left and right channels should be correct when you have your back to the electronics, but I've also been informed that you should face them. Which is it?

> JOHN ATWATER Bethel Park, PA

Most people prefer to set up their systems so that moving the balance Control from left to right, say, will shift the image from left to right when they're sitting in the best listening position. If the electronics are along the back wall, this means that facing it and turning the knob to the right will shift the balance to the left for the operator-until he turns around and faces the speakers. If that is an unpleasant sensation for you. then by all means wire your speakers in reverse, but the sound stage will be reversed as well. If you listen to classical music, you'll find the first violins on the right rather than the left, unless you switch all of your source cables too.

Definitive Technology **Authorized Dealers**

AZ- Audio Video Emporium: Tucson• Hi Fl Sales: Mesa. CA- Audio Concepts: Long Beach, San Gabriel• Creative Stereo. Santa Barbara, Santa Maria, Thousand Oaks, Ventura• Pacific Coast AV: Corona del Mar• Paradyme: Sacramento• Performance Audio: San Francisco• Shelley's Stereo: Santa Monica• Sound Co.: Escondido, San Diego• Sound Goods: Campbell, Mountain View• Systems Design: Redondo Reach

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CQ- Listen Up: Benver, Boulder, Colorado Springs.
CT- Al Franklin's: Hartford Audio, Etc.: New Haven-Carston's: Danbury Robert's Music: New London.
DC Suburbs - Audio Associates.
EL- Absolute Sound: Winter Park All Pro: Pensacola Audio Ctr.: Ft. Lauderdale Sound Ideas:
Gainesville Sound Insight: Ft. Pierce Stereotypes:
Daytona Beach Stereo World: Ft. Myers, Naples.
GA- Stereo Video Systems: Marietta (Atlania).
HI- Maul Audio Center: Kahului.
IA- Audio Logic: Des Moines Hawkeye Audio: Iowa City.
ID- Stereo Shoppe: Boise, Moscow.
IL- Absolute Audio Video: Rockford Mills Recording: Chicago Simply Stereo: Hoffman Estates,
Orland Pk. Sound of Peoria: Peoria Stereo Studio: Palatine, Schaumoerg, Villa Park Select Sound: Naperville Sterling Electronics: Sterling The Shoppe: Kankakee.

Kankakee.
IN- Ovation Audio: Clarksville, Indianapolis.
KS- Audio Visions: Wichita.
KY- Ovation Audio: Lexington, Louisville.
LA- Alterman Audio: New Orleans.
MA- Boston (see Nashua, NH)• O'Coins: Worcester.
MD- Audio Associates: Annapolis, Langley Park, Laurel, Rockville• Gramophone: Baltimore, Ellicott City•
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MI- Classic Steree: Grand Rapids, Kalamazoo• Listening Room: Sacinaw• Overture Audio: Ann Arbor• Pecar's: Detroit, Toy.
MN- Audio Perfection: Minneapolis.
MQ- Primus Audie: K. C.• Sound Central: St. Louis.
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VA- Audio Associates: Arlington, Fairfax• Audiotronics: Roanoke• Digital Sound: Virginia Beach• Stereotypes: Charlottesville.

WA- Evergreen Audio: Silverdale• Hawthorne Stereo:
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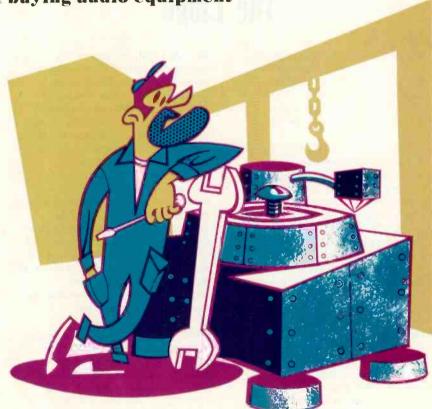
of buying audio equipment

HE inclusion of record-playing equipment in a high-quality audio system is no longer a given as the compact disc, less delicate and more convenient, takes over. But LP's are capable of extremely high performance under the right conditions (and there is a significant faction within the audio world that even now considers the sound of vinyl superior to that of digital discs and tapes). In any event, there is still a considerable selection of turntables and cartridges available, although it is certainly dwindling.

Whether you need vinyl capability or not, and what specific equipment is right for you, depends on a number of factors. If you have only a small number of favorite LP's, for instance, it may make sense to copy them onto cassettes and then abandon vinyl altogether. In that case, you probably already have a turntable of some sort, and it can be used to make the transfer (although a new cartridge may be a good investment, even for just the

dubbing process).

If your record collection is large, however, copying all of it may be impractical; it would almost certainly involve some sacrifice in quality, too, unless you were to use a digital recording system, so maintaining recordplaying equipment is probably the best policy. That may mean upgrading only parts of it-the stylus, say, or the whole cartridge—but in many cases your best bet is to trash what you have now and upgrade to equipment that's as good as you can afford while there's



still a fairly wide variety to choose from. And since both your equipment and vinyl recordings will become increasingly irreplaceable, they should be cared for in that light.

WHAT MATTERS

Squeezing a high-quality audio signal from a piece of molded plastic is an improbable process, fraught with difficulty, so perhaps it's fair to suggest that everything having to do with the record-playing chain matters. But in reality, only a few things vary enough to weigh in a buying decision.

 MECHANICS. The equipment that plays records is almost entirely mechanical, electricity coming into play only to drive the motor and at the last stage, where the physical motion of the stylus is turned into an audio signal. It stands to reason, then, that mechanical performance should be your first concern. Speed irregularities-wow and flutter-are not un-

BUYING TIME

common in turntables, so you should look for specs between 0.1 percent (which is sometimes audible) and 0.05 percent (which rarely is). Whatever the numbers, check things out by playing a record that contains sustained piano notes; if they sound slightly sour, as if the piano needed tuning, there's too much flutter.

Mechanical vibration from the mo-

tor can sometimes creep into the output signal in the form of rumble. If you can hear it during soft passages or the quiet sections between tracks (or the silent grooves on a test disc, if you have one), there's obviously a problem. Even if you can't hear the rumble, however, it still has the capacity to use up precious amplifier watts. Often it will show up on your cassette

deck's meters when you make a recording, or even on your amplifier's output indicators during quiet passages. It's even possible to see rumble by taking the grille cloth off a speaker and watching the woofer silently move in and out. Likewise, isolation from external vibrations can be checked by gently tapping the turntable base and the table it sits on and listening to (or watching) the results. All these handson trials can be performed in the store before you buy a turntable.

The Lingo

t may be that record-playing terminology, like the equipment it describes, will vanish shortly from the audio lexicon, but as long as turntables and cartridges are available, these phrases will retain their importance.

DIRECT OR BELT DRIVE. Turntables at the very top or bottom of the price spectrum usually employ a flexible belt to convey a high-speed motor's energy to the platter. In midprice models, the platter is usually mounted directly on the shaft of the motor, which is servodriven at exactly 33½ or 45 rpm. Both systems work excellently; direct drive has the advantages of flexible speed control and fairly fast start-up.

CARTRIDGE AND STYLUS. A cartridge is an electromechanical device that detects the undulations of a vinyl record's grooves by means of the stylus (what our parents knew as the "needle") and converts them to a varying electrical signal. Conventional cartridges mount in a headshell with screws; some more recent models (P-mount cartridges) simply plug into the end of the tonearm.

TRACKING/TRACING. Tracking is a cartridge's ability to keep the stylus in contact with the record surface even during very high-level music, rather than leaping out of the groove and then crashing back down. Tracing is the ease with which the cartridge/stylus combo negotiates the most tortuous undulations of the groove, especially near a record's center. Problems in either area can cause immediate—and sometimes excruciating—distortion as well as permanent record damage.

MC AND MM. Moving-coil and moving-magnet cartridges are the two most common methods of turning a stylus's physical motion into an electrical signal. Moving-coil models may have had a technical edge at one time, but that's not usually so any more. Moving-magnet cartridges (often simply called "magnetic") are typically cheaper and have higher output than MC models-which means they don't need an extra stage of amplification, as most MC cartridges do-and they normally have user-replaceable styli as well. Moving-magnet pickups also tend to have flatter high-frequency response and better tracking ability and to require less tracking force. Still, some audiophiles swear by moving coils, and some fine ones are available.

SKATING. The geometry of a pivoted tonearm causes the stylus to try to "skate" toward the center of a record, putting extra pressure on the inner groove wall and sometimes causing skipping. All such arms now apply a compensating antiskating force to overcome this, although they vary widely in their accuracy. Skating doesn't exist with straight-line-tracking (or linear-tracking) arms.

HORIZONTAL TRACKING ANGLE ERROR. A mouthful that nobody will miss: It represents the slight difference between the recording and playback stylus/groove angle created by a pivoted tonearm. Whether this minuscule discrepancy with a properly aligned cartridge and tonearm causes any audible effects is debatable, but if it worries you, buy a linear-tracking arm, which has no such error.

- RECORD SUPPORT. At first glance, it may seem reasonable to keep contact with a record's surface to an absolute minimum. That's probably true when it comes to potential surface damage, but firm support is needed under the whole playing area for best performance. If an LP is allowed to flap in the breeze, it will easily pick up airborne vibrations, including what's coming out of your speakers, and these will be conducted to the phono cartridge. The cartridge can't distinguish between groove undulations and disc vibration, so whatever the record picks up from the air will be amplified, leading to extraneous noises or, in the worst cases, acoustic feedback. The solution is to support a record in the playing area but not at the raised edge or label. If the mat on the turntable you want to buy doesn't do this, replacement mats are available that will, but they are useless with platters that provide support at only a few points.
- ARM/CARTRIDGE BEHAVIOR. The usual audio criteria—flat frequency response, low distortion, and so forth-do apply to record players, but because electromechanical devices tend to produce greater errors than purely electronic ones, cartridge makers publish few specs, so you have to rely largely on your own experimentation when you're shopping. Try playing a record with a fortissimo ending that occurs in the inner grooves of a disc; if the cartridge can handle that, it will probably be able to track anything (but beware—if if can't track the test passage it might damage your record). Also equip yourself with a severely warped record (not hard to find), and check it out in the store. Make sure that the arm/cartridge combination is exactly what you are considering, be-



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(Warner Bros.)

Ozzy Osbourne-No More Tears (Epic/Associated) 428-128

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Yes-Fragile (Atlantic) 351-957 Rolling Stones—Sticky

Rolling Stones
Fingers (Rolling Stones
350-645 Van Morrison-

Moondance (Warner Bros.)

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291-435 Eagles — Greatest Hits 1971-1975 (Asylum) 287-003

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Simon & Gartunkel-Greatest Hits (Columbia) 219-477

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cause how the two parts interact has a lot to do with their success in dealing with warps. The pickup should track the record with little or no bobbing of the stylus relative to the cartridge body and tonearm. During all of this, note how easy or awkward the turntable is to use: Like a cassette deck, a record player is something that has to be operated, so ease of use is a prime consideration. Once a given turntable passes these simple tests, spend as much time as you can simply listening to it. If you like what you hear, you needn't look any further.

WHAT DOESN'T

The turntable/tonearm/cartridge combination is made up of many disparate parts-some electrical, some mechanical—and in each case the designer has a wide range of options in accomplishing a particular goal. Which ones he chooses rarely means anything to the ultimate buyer.

- · MASS. In early audio, it was an axiom that a turntable platter should be as heavy as possible so that it would act as a flywheel and smooth out speed irregularities. It's still possible to buy turntables designed with this principle in mind, but they have no monopoly on smooth rotation. Most turntables today, even modest ones, boast very good wow-and-flutter performance without huge, massive platters. They also have the advantage that most equipment shelves can hold them and that they don't take 5 minutes to get up to speed.
- AUTOMATIC FEATURES. Except perhaps for flipping an LP over, turntables can be made to do virtually anything automatically, from lifting the arm to shutting down the whole system. These features all cost money, however, and are designed to simplify a process that isn't difficult to begin with. Semiautomatic turntables don't do everything, but they probably do more than you need. The only automatic feature that's really helpful is some method of lifting the stylus at the end of a side, so your system doesn't emit an extended k'shish . . . k'shish . . . k'shish while you dash in from the next room.
- CHANNEL SEPARATION. Cartridge makers are wont to boast of high



Check things out by playing a record that contains sustained piano notes; if they sound sour, there's too much flutter.

separation (or low crosstalk, the same thing), and certainly the greater the number the better. But studies have shown that there needs to be only about 20 dB of channel separation for good stereo imaging, so you shouldn't choose a cartridge on the basis of performance beyond that threshold.

• INNARDS. There are lots of different ways to construct a turntable or a cartridge, and historically some of them have yielded better performance than others. But that's rarely true today: It hardly matters how the designer gets the platter to revolve or how the cartridge extracts the music from the groove and gets it to your preamplifier. There are sonic differences between different models, to be sure, but these mostly have to do with how well the components are designed and constructed rather than with things like

the type of drive system or the method of transduction.

GET WITH IT

Phono equipment has probably spawned more accessories than any other component category, primarily because the records themselves are very delicate and easy to make misbehave. There are still lots of goodies on the shelves to enhance record playing, but the selection is smaller than it was even a couple of years ago, so it's a good idea to make sure what you buy will last for a long time. Buy extra quantities of cleaning liquids and other things that will be used up over time.

Priority No. 1 is a good recordcleaning system. There are machines that will do the job, but they tend to be expensive and may be overkill for many home users. A brush-and-liquid system is more than adequate for most purposes; use the brush (dry) before every playing and the liquid for major cleanups. A pint or so of the stuff should last you practically forever.

One problem with dry brushing is that it can induce a static charge on a record's surface, and this attracts dust. There are various devices designed to remove such charges, and they are good investments in the long term. Some cartridges are fitted with a carbon-fiber brush that neutralizes static as the record plays, and there are hand-held brushes as well. Antistatic guns are effective too, although they may seem pricy. Avoid so-called "antistatic" cloths and sprays, which do more harm than good.

While you can, buy a supply of plastic inner sleeves for your LP's, and make sure that each disc has one. Keep some extras on hand as replacements for the future.

Finally, a couple of optional accessories will help you check the setup of your turntable, which you should do about once a year. A small spirit level will tell you whether your table has developed a list, which can cause uneven wear or skipping; place the level on a disc on the platter and rotate it slowly by hand to make sure things are level in all directions. A stylus-pressure gauge is also useful for checking that the cartridge tracking force is correct (it's usually more accurate than a tonearm's built-in calibration).

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ANNOUNCING THE EIGHTH ANNUAL

Rodrigues Cartoon Caption Contest

ES, it's baa-ack! The Annual Rodrigues Cartoon Caption Contest is back! Once again the editors have commissioned the artist Charles Rodrigues to supply a drawing, and we invite the readers to submit funny captions for it.

The person who sends in the caption judged to be the most amusing will receive the original drawing shown below, a cash prize of \$100, and the distinction of seeing his or her name in this magazine along with the winning caption when the contest results are announced. If you win, all your audiophile friends will probably turn pea green with envy and do Rumplestiltskin imitations all the way down to the scratch-and-dent sale at Discount Stereo Exchange

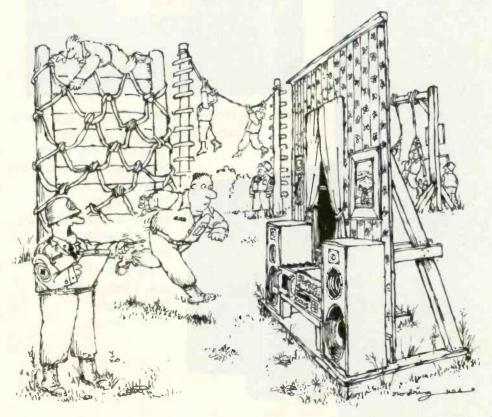
Anyone may enter, and there is no limit to the number of times you may enter, but each caption submitted must be on a separate sheet of paper that also contains the clearly legible name and address of the person who submits it. Entries that have more than one caption per page will be disqualified. All entries must be received by STEREO REVIEW no later than March 1, 1992.

In addition to members of the editorial staff of STEREO REVIEW and Rodrigues himself, the

distinguished panel of judges will include the winners of the seven previous contests: Thomas Briggle, of Akron, Ohio; Michael Binyon, of Chico, California; Bruce Barstow, of Philadelphia, Pennsylvania; Matt Mirapaul, of Evanston, Illinois; Marc Welenteychik, of Richmond, Virginia; Douglas Daughhetee, of Augusta, Georgia; and Kelly Mills, of Raleigh, North Carolina. (Let's hear from the Pacific Northwest this year!) Entries will be judged on the basis of originality, appropriateness, and humor, and the decision of the judges will be final.

Humor is touchy when it deals with something you feel strongly about. Rodrigues has been poking fun at audio since this magazine's first issue, February 1958, but he does it from inside the magic circle of the family. Now is the time for you fellow insiders to collaborate with him. What is the sargeant barking at that young recruit on the obstacle course? Go ahead. Put words in his mouth.

The winning caption (and a selection of runners up) will be published in the June or July issue. Although we plan to finish the judging by June, it has always taken until July in the past. The present economy has made us leaner and meaner, so this year we may zip through faster than before. The usual restrictions and disclaimers are printed below.



Send entries to: Rodrigues Contest STEREO REVIEW 1633 Broadway New York, NY 10019

No purchase is necessary. Anyone may enter except the staff of Stereo Review and its parent company (Hachette Magazines, Inc.) and their immediate families. All entries become the property of Stereo Review, and none will be returned. If you wish to be notified of the results of the contest by mail, send a stamped self-addressed envelope to the above address.

In the unlikely event of duplicate entries, the one first received will be considered the winning entry. The names of the winner and perhaps a dozen runners-up will be published in Stereo Review and may appear in promotional literature for the magazine. Submitting an entry will be deemed consent for such use.

Stereo Review will arrange the delivery of the prize; any tax on it will be the responsibility of the winner.

What good is Dolby Pro Logic if you're powerless to enjoy it?

In the desire to turn everyone's living room into a movie theater, more and more manufacturers are featuring Dolby Pro Logic Surround Sound in their components.

But, **featuring** Dolby Pro Logic and **delivering** Dolby Pro Logic aren't necessarily the same thing. Onkyo understands this difference, unlike those manufacturers interested only in their products having the latest "hot button" regardless of how well they incorporate it.

The promise of the Dolby system lies in its ability to create an extraordinary sensory experience. One you shouldn't be powerless to enjoy because your receiver or amplifier can't handle the demands of dialogue, soundtrack and special effects all at the same time.



That's why Onkyo Dolby Pro Logic components are built with a strong amplifier

foundation. Every model features Low Impedance Drive power supplies, consisting of heavy duty transformers (40% larger than many of our competitors), oversized capacitors and discrete output circuits.



And because we've taken no sonic shortcuts, our A/V components are rated into low impedance loads down to 2 or 3 ohms. These measurements, called Dynamic Power Ratings on a spec sheet, reflect the power reserves an amplifier must have



to handle peak power demands. Onkyo A/V components give you the best of both worlds—power to spare for movies, the performance of separates for music.

At Onkyo, we don't believe in shortchanging the critical center channel either. Many of our Pro Logic A/V components have 5 separate amplifier sections, one for each channel, with the power matched between the left & right front and center channels. In this way, the relationship between the dialogue, effects, and music is in the exact proportion the director intended. If they're not, sounds that are supposed to come towards you and envelop you lose their impact, and whispered dialogue becomes overwhelmed.



Onkyo's home theater philosophy also takes into account the physical configuration of your home. An adjustable rear channel digital delay lets you tailor the surround effect to the size and shape of any room. For even more flexibility, our A-SV810PRO features an 8 Mode Digital Soundfield Processor, plus the ability to individually equalize the bass/mid/treble frequencies for each channel.



So, before you invest in any A/V receiver or amp, check to see how it stacks up in terms of Dynamic Power, center channel wattage, and the ability to shape the sound to your needs. Remember, a great Dolby Pro Logic experience requires more than just a logo on a faceplate.

It demands a company as dedicated as Onkyo to bring it to life.



Onkyo's achievements in Dolby Pro Logic have been recognized by the industry through Audio Video International's awarding their 1991 HiFi Grand Prix Awards as "Product Of The Year" to our TX-SV70PRO Pro Logic Surround Sound Receiver, A-SV810PRO Pro Logic Surround Sound Integrated Amplifier and ES-600PRO Pro Logic Surround Sound Processor.







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TEST REPORTS



Harman Kardon HK3600 AM/FM Receiver

Julian Hirsch, Hirsch-Houck Laboratories

LTHOUGH the Harman Kardon HK3600 stereo receiver carries a moderate 75-watt power rating, it is designed to deliver very high instantaneous currents to loudspeaker loads, enabling it to drive nearly any speaker system during brief high-level program transients. Its amplifiers, whose frequency bandwidth far exceeds the audio range, use a relatively small amount of negative feedback to minimize the possibility of transient intermodulation distortion (TIM). The designers employed discrete circuits instead of integrated circuits for maximum flexibility. Though the receiver is protected against damage from shorted speaker wiring, it does not use conventional current-limiting circuits or output relays.

The HK3600 is rated to deliver 75 watts per channel into 8- or 4-ohm loads from 20 to 20,000 Hz, both chan-

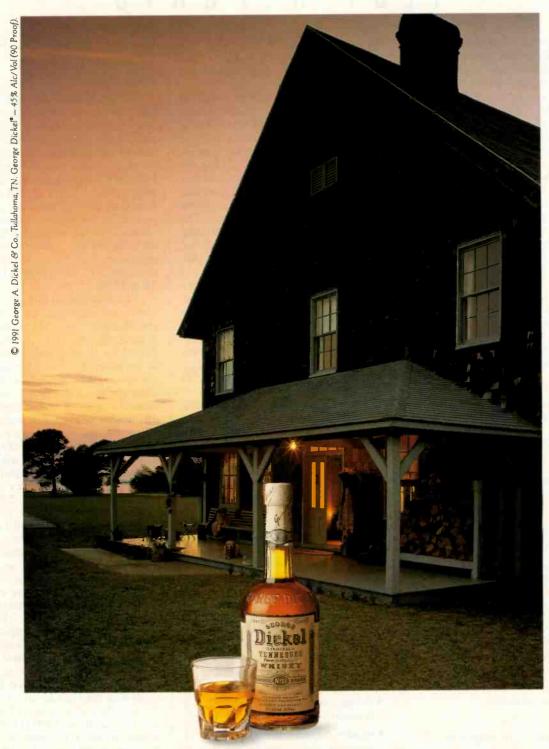
nels driven, with respective maximum distortion levels of 0.09 and 0.3 percent. A switch on the rear changes the power-supply voltage for driving lowor high-impedance speakers without risk of overheating or damaging the receiver. Depending on the switch setting, it is rated to deliver dynamic power bursts ranging from 110 watts into 8 ohms and 155 watts into 4 ohms to as much as 220 watts into 2 ohms.

The HK3600 has inputs for a magnetic phono cartridge, a CD player, and a second high-level input (marked AUX). There are tape-recording and monitoring circuits for two audio recorders, two VCR's, or one of each. The tape loops also have video input and output jacks, and there is a set of A/V input and output jacks and a video monitor output, providing considerable flexibility in connecting such video components as a TV set, videocassette player, or videodisc player.

The receiver's front panel is simple and uncluttered. The input selectors are two parallel rows of square buttons at the bottom center of the panel, the upper row identified as FUNCTION selectors and the lower row as REC OUT selectors. They allow independent selection of sources for listening and recording. Each button contains a pilot lamp (green for FUNCTION and red for REC OUT) to indicate its selection.

Small knobs across the bottom of the panel connect one or two sets of speakers and operate the bass and treble tone controls and the balance control. The large volume knob, which has a bright green index light to show its setting at a distance, is motordriven when operated from the remote control. Above the headphone jack is a small knob marked SUBWOOFER LEV-EL, which adjusts the output level (relative to the main audio level) at two subwoofer jacks on the rear apron of the receiver. This signal is suitable for driving a powered subwoofer or a passive subwoofer through an external power amplifier. It can also be used to drive a surround-sound accessory or any other device requiring a line-level signal.

The upper part of the panel contains a number of pushbuttons and the tuner



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TEST REPORTS

display window. The window shows the band, frequency, preset mode and channel number, and relative signal strength (on a five-step scale). Unlike the tuner sections of most receivers, the HK3600's tuner is active only when it is selected. At other times the window display is switched off.

Each of the four buttons to the left of the display is center-pivoted. Pressing the upper half selects one of the first four preset channels, and pressing the lower half chooses from the second four presets. In addition, a SHIFT A/B button switches to a second bank of channels, for a total of sixteen presets.

Other, similarly shaped pushbuttons control the power to the receiver, disable the video circuits, activate the infrasonic filter or loudness compensation, switch to mono mode, and store station frequencies in the preset memories. To the right of the window are AM and FM band selectors, an up/ down tuning button, and a button that selects the tuning mode. In the Seek-Stereo mode, a momentary press on a tuning button automatically scans in the selected direction until the tuner acquires a stereo signal of adequate strength. With the seek mode disabled, the tuning goes on only while the tuning button is depressed, the muting and stereo-demodulator circuits are disabled, and stations are heard only in mono.

On the HK3600's rear apron, in addition to the various signal input and output jacks, are jacks for connection to a system remote control for use with compatible Harman Kardon components. There are antenna binding posts for a 300- or 75-ohm FM antenna and the supplied AM wire-loop antenna, which clips onto the rear of the receiver and can be pivoted as required. The two sets of stereo speaker binding posts accept wire leads or single or double banana-plug connectors. One of the two AC outlets is switched.

The supplied wireless remote control duplicates almost all the front-panel control functions, including preset channel selection, input source (for listening only), tuning, power switching, and volume. It also has preprogrammed buttons for compatible Harman Kardon cassette decks and CD players.

The HK3600 is finished in black with pale gold markings. It measures 17% inches wide, 13% inches deep, and 5 inches high, and it weighs 20 pounds. Price: \$799. Harman Kardon,

Dept. SR, 240 Crossways Park W., Woodbury, NY 11797.

Lab Tests

The HK3600's FM tuner section had very good sensitivity: 12 dBf mono usable sensitivity and 50-dB quieting sensitivity of 16 dBf in mono and 40 dBf in stereo. Its noise level was low, with a signal-to-noise ratio (S/N) of 82 dB in mono and 73.5 dB in stereo. Distortion at 65 dBf was less than 0.14 percent in mono and 0.06 percent in stereo. FM frequency response was flat within +0.02, -0.5 dB from 20 to 15,000 Hz. Channel separation was 50 to 55 dB in the midrange, 37.5 dB at 10,000 Hz, and 40 dB at 30 Hz.

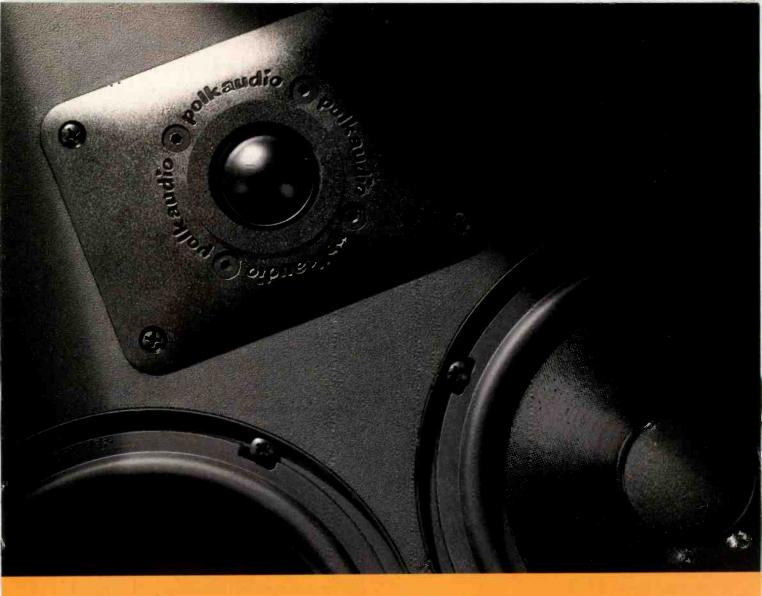
The capture ratio of 1 dB was outstanding, matching the receiver's specifications. The AM rejection was a good 66 dB, and selectivity surpassed the tuner's ratings, measuring an excellent 80 dB for alternate-channel spacing and 5.2 dB for adjacentchannel spacing. Image rejection, however, was an undistinguished 47 dB. Stereo pilot-carrier leakage was low, -64 and -66 dB, respectively. for the 19,000- and 38,000-Hz components, and hum was -68 dB, evenly divided between 60- and 120-Hz components. The AM frequency response was +4, $-6 \, dB$ from 20 to 2,500 Hz.

The amplifier section's frequency response was flat within ± 0.1 dB from 120 to 30,000 Hz, falling to -3 dB at 190 kHz. Output rose slightly at low frequencies, to +1.2 dB at 20 Hz. With the balance control at its center detent, the levels of the two channels differed by 0.8 dB, but their response variations were identical. The infrasonic filter reduced the output by 1.6 dB at 20 Hz, the lower limit of our measurement. Tone-control range was about +13, -12 dB at 20 and 20,000 Hz. The bass turnover frequency shifted between about 50 and 300 Hz, and the treble turnover frequency was fixed at about 2,000 Hz. The subwoofer output's response was rulerflat (varying less than 0.1 dB overall from 20 to 20,000 Hz), and it clipped at 2.35 volts. The loudness contours, following modern research on human hearing sensitivity, boosted only the low frequencies, by a maximum of 10 dB relative to the high frequencies. RIAA phono-equalization error was $+0.2. -0.4 \, dB$ from 20 to 20,000 Hz.

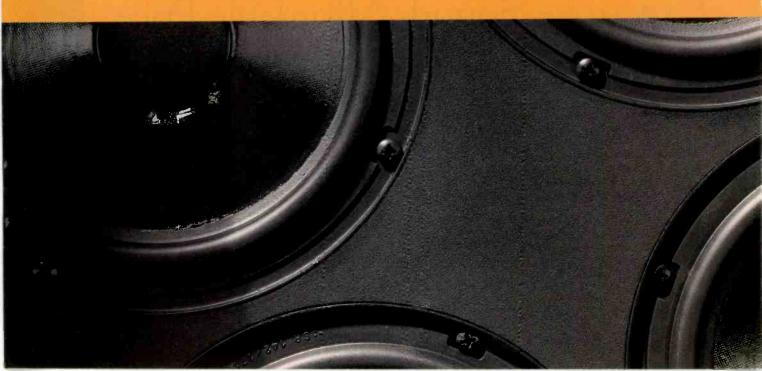
FEATURES

- Digital frequency-synthesis AM/FM tuner with sixteen presets
- Amplifier with high current-output capability for musical peaks into lowimpedance loads
- Output-current switch for 8- or 4-ohm loads
- Inputs for CD, phono, A/V (TV, VCR, videodisc player), two tape decks (audio or video), and auxiliary
- Independent selection of sources for listening and recording
- Video monitor output
- Tape dubbing in either direction
- Bass and treble tone controls, balance control
- Drives one or two sets of speakers, switchable from front panel
- Switchable loudness compensation and infrasonic filter

- Tuner display window (visible only when tuner is selected) shows band, frequency, preset channel number, tuning mode, signal strength
- Headphone jack
- Separate adjustable line-level output for subwoofer or other device
- Wireless remote control of most receiver functions; also controls compatible Harman Kardon cassette decks and CD players
- Volume-control knob motor-driven in remote operation
- Speaker-output binding posts accept wire ends, single or dual banana plugs
- Inputs for 75- or 300-ohm FM antenna, AM wire-loop antenna
- Jacks for wired remote control of compatible components
- Two AC outlets (one switched)



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We measured the amplifier's clipping level with both channels driven using both settings of the impedance selector and loads of 8 and 4 ohms. With the 4-ohm setting, the maximum power was 66 watts into 8 ohms and 96 watts into 4 ohms (clipping headroom of 1.07 dB). With the 8-ohm setting, the 8-ohm output was 96 watts (clipping headroom of 1.16 dB), and the 4-ohm output was 137 watts. We also checked the clipping power into 2 ohms with the 4-ohm switch setting, driving only one channel, which yielded a maximum output of 139 watts.

Dynamic power measurements (at the 8-ohm setting) were 120, 300, and 440 watts into loads of 8, 4, and 2 ohms. The 8-ohm dynamic headroom was 2 dB, and the 4-ohm dynamic headroom was 2.5 dB.

Total harmonic distortion plus noise (THD + N) at 1,000 Hz in the range of 30 to 70 watts was about 0.06 percent with any of the combinations of load impedance and switch setting. We also measured THD alone (excluding noise) by spectrum analysis of the amplifier output at 1 watt, 7.5 watts, and 75 watts output at frequencies of 1,000 Hz and 20,000 Hz. At 1 watt and 7.5 watts, the distortion was less than 0.024 percent at both frequencies, and at 75 watts both measured about 0.047 percent.

Amplifier sensitivity for a 1-watt reference output into 8 ohms was 15.5 millivolts (mV) for the CD input and

0.24 mV for the phono input. The corresponding A-weighted noise levels were -77.6 and -77.3 dB. The phono-input termination was 46,000 ohms in parallel with 95 picofarads (pF), and the phono stage overloaded at inputs between 148 and 127 mV from 20 to 20,000 Hz (referred to the 1,000-Hz gain).

Comments

The HK3600 is visually much simpler than most contemporary receivers. Its panel is not studded with closely packed buttons, but not because most of the controls are concealed behind a hinged door. They're all in full view, yet the panel is appealingly uncluttered and not at all difficult to use. Nevertheless, the HK3600 does not sacrifice much in the way of versatility or useful features.

The controls are plainly marked, and there are no cryptic abbreviations to decipher. Even the display shows only the essentials of the tuner's status, and—unlike those on almost every other receiver we have seen—it is visible only when the tuner is selected.

Despite the HK3600's basic videorelated features (program selection and in/out switching), the manufacturer forbore calling it an A/V receiver. Harman Kardon has also side-stepped the amplifier horsepower race, with a sensible rating of 75 watts. Yet the HK3600's very healthy current output capabilities should make it effectively more powerful (when driving low-impedance speakers) than some far more 'powerful" receivers. A by-product of the design philosophy behind the HK3600 is that it is a cool-running receiver; its top never got more than moderately warm under the most severe listening conditions we devised.

Another notable feature of the HK3600 is its FM tuner section, one of the best we have encountered in a receiver. Only its uninspiring image rejection keeps it from earning even higher praise, but in respect to selectivity, sensitivity, capture ratio, AM rejection, noise, and channel separation, it was a notable performer.

The HK3600 is not cheap (it heads Harman Kardon's current receiver lineup), but it delivers solid performance for its price. It is a rugged, conservatively designed, and conservatively rated product that does credit to its designers.

LABORATORY MEASUREMENTS

 Tuner Section (all figures for FM only except frequency response; measurements in microvolts, or μV, referred to 300-ohm input)

Usable sensitivity: mono, 12 dBf $(2.2 \mu V)$

50-dB quieting sensitivity: mono, 16 dBf (3.5 μ V); stereo, 40 dBf (44 μ V)

Signal-to-noise ratio at 65 dBf: mono, 82 dB; stereo, 73.5 dB

Harmonic distortion (THD + N) at 65 dBf: mono, 0.14%; stereo, 0.06%

Capture ratio at 65 dBf: 1.0 dB

AM rejection: 66 dB

Pilot-carrier leakage: 19 kHz, -64 dB; 38 kHz, -66 dB

Hum: -68 dB

Stereo channel separation at 100, 1,000, and 10,000 Hz: 50, 50, and 38 dB

Frequency response: FM, +0.2, -0.5 dB from 30 to 15,000 Hz; AM, +3.5, -6 dB from 20 to 2,500 Hz

• Amplifier Section

1,000-Hz output at clipping: 8-ohm setting, 98 watts into 8 ohms, 137 watts into 4 ohms; 4-ohm setting, 66 watts into 8 ohms, 96 watts into 4 ohms

Clipping headroom (relative to rated output): 8 ohms, 1.16 dB; 4 ohms, 1.07 dB

Dynamic power output: 8-ohm setting, 120 watts into 8 ohms, 300 watts into 4 ohms, 440 watts into 2 ohms; 4-ohm setting, 79 watts into 8 ohms, 132 watts into 4 ohms, 225 watts into 2 ohms

Dynamic headroom (relative to rated output): 8 ohms, 2 dB; 4 ohms, 2.5 dB

Maximum distortion (20 to 20,000 Hz into 8 ohms): 0.048% at 20,000 Hz and 75 watts output

Sensitivity (for a 1-watt output into 8 ohms): CD, 15.5 mV; phono, 0.24 mV

A-weighted noise (referred to a 1-watt output): CD, -77.6 dB; phono, -77.3 dB

Phono-input overload (1,000-Hz-equivalent levels): 143 mV at 20 Hz, 145 mV at 1,000 Hz, 122 mV at 20,000 Hz

Phono-input impedance: 46,000 ohms in parallel with 95 pF

Tone-control range: 100 Hz, +9, -8 dB; 10,000 Hz, ±11 dB

Loudness-compensation range: + 10 dB at 50 Hz

RIAA phono-equalization error: +0.2, -0.4 dB from 20 to 20,000 Hz

Frequency response (tone controls centered): +1.15, -0.15 dB from 20 to 20,000 Hz

Subwoofer output (maximum at clipping): 2.35 volts

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The McIntosh output circuit, superior in its performance, demands a superior method of coupling the amplifier output to the loudspeaker load. A McIntosh designed and manufactured autotransformer ensures peak performance and protection, as well as outstanding compatibility between amplifier and speaker.

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Today's advanced loudspeaker designs have presented amplifiers with a new set of problems. Although a speaker impedance may be rated at a nominal 8 ohms, the actual load can drop to 2 ohms at certain frequencies. Some esoteric speakers may present as little as 1 ohm at certain frequencies. This presents an excessive demand for more current from an amplifier's output stage.

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Clipping, which looks and acts like non-musical square waves (music produces rounded waves), is caused when the amplifier is required to produce more power output (with low distortion) than it is designed to deliver. Amplifiers, when driven to clipping, can deliver up to 40% harmonic distortion - distortion that significantly decreases listening enjoyment, and increases listening fatigue. A clipped signal also produces extra distortion energy, which can damage speakers.

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Technics SL-XP700 Portable CD Player

Julian Hirsch, Hirsch-Houck Laboratories

HERE has been an ongoing competition among the manufacturers of portable CD players to make them ever smaller (as happened with cassette players). Currently, the Technics SL-XP700 is probably the thinnest portable CD player—a mere 1/16 inch thick. Its other dimensions, 51/16 inches wide and 511/16 inches deep, are little more than the diameter of a disc itself. Complete with internal rechargeable nickel-cadmium (Ni-Cd) batteries, the player weighs a mere 121/3 ounces.

The additional 3/8 inch of depth provides room for the controls, which consist of seven buttons, four small slide switches, and a volume wheel. A small back-lit LCD screen shows the current track number and its elapsed playing time, the mode (random play, etc.), and the charge status of the batteries.

The main controls, to the right of the display, are the play/pause button and the stop/power off button, each of which performs its dual functions on successive operations. The volume control wheel is recessed into the front edge of the player. On its right side are a miniature phone jack and two slide switches that engage a high-cut filter and a bass-boost circuit, identified as S-XBS.

Other controls, to the left of the display, include a button that opens the player to load or unload a disc and buttons for skip/search in either direction, repeat of the entire disc, and memory/recall (for verifying the programming). The SL-XP700 can be programmed to play up to twenty-four tracks in any order. On the left side of the player, the mode switch selects normal play, random play, or resume play (starting from the beginning of the track that was playing when the machine was last turned off). The hold switch locks out all control functions except the open button to prevent the player from accidentally being turned on or off or otherwise having its operating status changed.

The rear edge of the SL-XP700 has a jack for connecting the supplied AC adaptor, which also recharges the internal batteries, and an audio line output whose level and frequency response are not affected by the player's controls. The AC adaptor adds 3/4 inch. to the depth of the player. An optional power adaptor is available for opera-

tion from a 12-volt automobile battery via the car's cigarette lighter. The player is supplied with a holder for two standard AA cells, which provide about twice the playing time of the Ni-Cd cells while simultaneously charg-

The Technics SL-XP700 uses dual 18-bit digital-to-analog (D/A) converters with eight-times-oversampling digital filters, and it has a rated frequency response of 20 to 20,000 Hz + 0.5-1.5 dB. Its line output is rated as 1 volt into a 50,000-ohm load. Dynamic range is rated at more than 94 dB and signal-to-noise ratio (S/N) at more than 96 dB. The rated maximum headphone output is 15 milliwatts into 16

The player comes with miniature stereo earphones that fit directly into the ear without a headband. A remote control built into their connecting cable permits adjustment of volume and several of the player's normal operating functions, including play, power off, and fast search and track skipping in the forward direction. Also supplied is a soft protective case and an outputadaptor cable with twin phono plugs for connecting the player to a standard home amplifier or receiver. Price: \$340. Technics, Dept. SR, One Panasonic Way, Secaucus, NJ 07094.

Lab Tests

Unless otherwise stated, all our measurements were made at the line outputs. Frequency response was perfectly flat from 15 to 3,000 Hz, falling off to -1.35 dB at 20,000 Hz. Interchannel phase shift ranged from zero at the lowest audio frequencies to -5.3 degrees at 20,000 Hz. At the headphone outputs, the frequency response was +0.6, -1.4 dB from 20 to 20,000 Hz. The high-cut filter rolled off the response above 1,000 Hz, to -3.2 dB at 10,000 Hz. The S-XBS circuit boosted the bass response below 500 Hz to +11.9 dB at 45 Hz, returning to the 1,000-Hz output level

Channel separation varied from 94 dB at 100 Hz to 49 dB at 20,000 Hz. Total harmonic distortion plus noise (THD + N) was 0.034 percent from 20 to 1,000 Hz, slowly rising to a maximum of 0.1 percent at 10,000 Hz. The linearity of the D/A converters was \$ excellent, with errors of less than 0.4 dB at levels from -60 to -90 dB. De-

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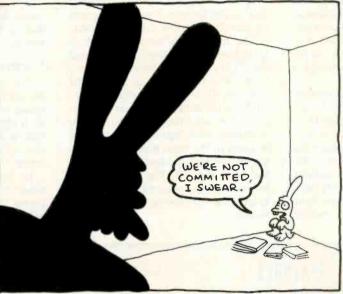
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emphasis response error was less than 0.3 dB up to 5,000 Hz and a maximum of -1.15 dB at 16,000 Hz. The wideband noise level (A-weighted) was -99.5 dB, and the dynamic range (EIAJ) was 94.7 dB. Quantization noise was -82.3 dB.

The SL-XP700's maximum line output was just barely greater than 1 volt. Slew time from Track 1 to Track 15 of the Philips TS4 test disc was 4 seconds. The player tracked through the 2,000-micrometer defects on the Pierre Verany #2 test disc without audible difficulty, but it was very sensitive to physical impact, with light finger taps on its top causing audible

dropouts. When it was held in the hand and moved about or rotated, the sound frequently muted for several seconds.

The instruction manual, which is quite complete and explicit, states that the XL-P700 will operate for up to 2 hours on a full charge of its internal batteries. On a partial charge (indicated by a blinking symbol on the display), the rated time is 1½ hours. We confirmed both figures. Within a few minutes of the rated playing time, the player stopped suddenly, as though it had been shut off. The time required for recharging appeared to be slightly longer than the playing time (roughly 3 hours).

The supplied earphones sounded quite good, though they were no match for true high-fidelity headphones. Their volume was adequate.

Comments

The sound quality of the Technics SL-XP700, played through a home music system, was excellent. In general, it should be indistinguishable from that of a typical home CD player in the same or a slightly higher price range.

Its maximum output, however, is about 6 dB less than that of a home player (2 volts is the normal standard output from a 0-dB recorded level). If the SL-XP700 were paired with an amplifier or receiver having slightly less than normal gain, or with speakers of lower than normal sensitivity, it would be necessary to set the system volume control higher than usual. This effect is not too important, but the low level can also result in a very high volume level when you switch from the player to a tuner or another higher-level input.

It seems clear that the SL-XP700 was never designed to be played while being carried about. Not only is it very sensitive to the jarring that would be expected in such operation, but it has no provision for attaching a carrying strap, and its soft case is apparently meant primarily to protect it in a briefcase or piece of luggage.

The most likely application for this component, as we see it, is in true portable (as distinguished from mobile) service. It can be carried easily during travel and would be an excellent source of music at a campsite, picnic ground, hotel, etc, or in an airplane. And it is equally suitable for home use, in a den or child's room, say, either with headphones or connected to an amplifier and a pair of loudspeakers.

It is worth noting that in respect to defect-tracking ability, the Technics SL-X700 ranks among the best CD players we have ever tested. It is an intriguing, highly sophisticated piece of equipment whose performance would have been considered unbelievable only a few years ago. And its remarkably small size and long playing time (about 6 hours with both rechargeable and alkaline batteries in place) make it a superb traveling companion.

FFATURES

- Dual eight-times-oversampling, 18-bit digital filters and D/A converters
- Ultra-thin chassis, only 11/16 inch thick
- Can be operated from internal rechargeable batteries, add-on AA cells, AC adaptor, or automobile battery (through optional car adaptor)
- Automatic shut-off after 4 minutes in stop mode
- Up to 6 hours continuous play with both Ni-Cd rechargeable batteries and regular AA batteries installed
- Line output and cable for driving external amplifier

- Switchable high-cut filter
- Switchable low-bass boost
- Programmable to play up to twentyfour tracks in any order
- Random-play and disc-repeat modes
- Switchable resume-play mode
- Back-lit LCD screen shows track number, elapsed time on track, operating status, battery charge
- Hold switch to disable all buttons except cover open
- Supplied earphones; remote control for volume, several other functions built into cord

LABORATORY MEASUREMENTS

Maximum output level (line): 1.056 volts

Frequency response: line output, +0, -1.35 dB from 20 to 20,000 Hz; headphone output, +0.6, -1.4 dB from 20 to 20,000 Hz

De-emphasis error: -1.15 dB at 16.000 Hz

Channel separation: 94 dB at 100 Hz, 49 dB at 20,000 Hz

Dynamic range (A-weighted): 94.7 dB

Signal-to-noise ratio (A-weighted): 99.5 dB

Maximum interchannel phase shift: 5.3 degrees at 20,000 Hz

Linearity error: +0.1 dB at -60 dB, +0.25 dB at -70 dB, +0.4 dB at -80 dB, +0.25 dB at -90 dB

Distortion (THD + N at 1,000 Hz): 0.044% at 0 dB

Defect tracking: tracked 2,000micrometer errors on Pierre Verany #2 test disc

Slewing time: 4 seconds

Cueing accuracy: A

Speed error: +0.0756%

Impact resistance: top, D

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White Lion: Mane Attraction (Atlantic) 54209

Pet Benatar: True Love (Chrysalis) 44663

Lenny Kravitz: Mama Said (Virgin) 10041

Hank Williams, Jr.: Pure Hank (Warner/Curb) 60351

Starship: Greatest Hits (RCA) 90270 Contraband (Impact) 32031

Frank Sinatra: Sinatra Reprise: The Very Good Years (Reprise) 80304

Elvis Costelio: Mighty Like A Rose Warner Bros.) 60280

Aretha Franklin: What You See Is What You Sweat (Arista) 72220

Spyro Gyra: Collection (GRP) 33286

Kool Moe Dee: Funke Funke Wisdom (Jive) 44195

Ziggy Marley: Jahmekya (Virgin) 54204 Paul Simon:

Negotiations And Love Songs 1971-86 (Warner Bros.) 20461

Lynyrd Skynyrd: 1991 (Atlantic) 34437

Foreigner: Unusual Heat (Atlantic) 34465

Elvis Presley: Sings Leiber And Stoller (RCA) 44359 José Carreras:

Hollywood Golden Classics (Atlantic) 44656

Keith Washington: Make Time For Love (Qwest) 14677

Dlamond Rio

Lisa Fischer: So Intense (Elektra) 71152

Marc Cohn (Atlantic) 82983

Neil Diamond: 12 Greatest Hits (MCA) 84050 The Judds:

Greatest Hits, Vol. 2 (RCA) 74054 Holly Dunn:

Milestones— Greatest Hits (Warner Bros.) 83614

Guys And Dolls/ Original Cast (MCA) 43962

McBride & The Ride: Burnin' Up The Road (MCA) 53806

Dying Young/Sdtk (Arista) 73769

Queen Latifah: All Hail The Queen (Tommy Boy) 74108 Foreigner: Records (Atlantic) 53317

Supertramp: Classics (14 Greatest Hits) (A&M) 04891

Extreme: Pornograffitti (A&M) 43557

(Warner Bros.) 61992

Squeeze: Play (Reprise) 70549

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Gladys Knight: Good Woman (MCA) 84390

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Chicago: Greatest Hits 1982-1989 (Reprise) 63363

Bad Company: Holy Water (Atlantic) 24784

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Journeyman (Wamer Bros.) 53940

Elvis Presiey: The Number One Hits (RCA) 72190

Keith Whitley: Greatest Hits (RCA) 10728

Allman Bros.: Eat A Peach (Polydor) 63353 Paul Simon: Graceland (Warner Bros.) 72315

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Quincy Jones: Back On The Block (Owest) 64116

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Londonbeat: In The Blood (MCA) 44569

Bon Jovi: Silppery When Wet (Mercury) 43465

The Bonnie Raitt Collection (Warner Bros.) 00569

Anita Baker Compositions (Elektra) 00921

Best Of Dire Stralts: Money For Nothing (Warner Bros.) 00713

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Infinity Infinitesimal Four Three-Piece Speaker System

Julian Hirsch, Hirsch-Houck Laboratories

ost of today's popular threepiece speaker systems consist of two small satellite speakers and a "bass module" specifically designed to reproduce low frequencies over a range of one or two octaves, with the crossover to the satellites usually falling in the 150- to 200-Hz range. Most such systems sell for less than \$600 and typically provide sound quality equal to, and often surpassing, that of similarly priced conventional speakers.

Infinity's approach to a three-piece system is quite different. Its Infinitesimal Four system, whose price is roughly twice that of most three-piece systems, has satellites good enough to stand alone, with a response rated to extend from below 100 Hz up to $40.000 \,\mathrm{Hz} \pm 3 \,\mathrm{dB}$. The satellites are, in fact, available separately for use as extension speakers or in applications not requiring deep bass response. Deep bass for the full system is produced by a powered subwoofer whose crossover frequency is adjustable from 50 to 200 Hz and whose response is specified as ±3 dB from 40 to 200 Hz. Like the Infinitesimal Four satellites, the Servo Subwoofer is available separately.

The Infinitesimal Four satellites, molded from a rigid plastic material, measure about 93/4 inches high, 6 inches wide, and 6¾ inches deep. Each weighs 5¾ pounds. The front panels of the satellites slope slightly backward, and each holds a "woofer" with a 51/4inch injection-molded-graphite (IMG) cone. Above the woofer is a variation on Infinity's ElectroMagnetic Induction Tweeter (EMIT), called the EMIT-R. In its usual form, as found in most higher-priced Infinity speakers, the EMIT resembles a small ribbon tweeter, although its operating principles are somewhat different. The EMIT-R version has a circular radiating area resembling that of a 1-inch dome tweeter, but its diaphragm is actually flat and appears to be driven over most of its area by a spiral con-

The satellite woofer operates in a vented enclosure whose small port (about 5/8 inch in diameter) is on the rear of the cabinet. A nonremovable metal grille protects the drivers. The bottom of the cabinet is covered almost entirely by a rubber pad, simplifying its secure placement on a table, stand, or shelf, and the back has holes for wall-mounting brackets.

The Servo Subwoofer is a cube, about 13 inches on a side, finished in black vinyl. Its 10-inch IMG woofer faces forward, behind a removable cloth grille. The rear panel has a power switch and LED pilot light for the built-in 100-watt amplifier, whose heat sink is the metal panel covering most of the back of the cube.

A heavy-duty four-terminal barrier strip provides connections from the left and right channels of the user's amplifier to the subwoofer. The satellites can be wired directly to the amplifier outputs or to the terminals on the subwoofer. The subwoofer's internal driving amplifier receives a feedback signal from the speaker that corrects for any departure from an accurate reproduction of the signal waveform.

The rear of the subwoofer cabinet also has phono-type signal jacks for use with line-level signals from a preamplifier output. There are two control knobs, one for adjusting the level of the bass output and one for setting the crossover frequency.

The subwoofer is normally supported by four removable feet that place its bottom surface about 2 to 21/2 inches above the floor. The enclosure port, about 3 inches in diameter, is on the bottom of the cabinet. It is possible to place the cube on another of its surfaces to adjust the low-bass level.

Specifications for the Infinitesimal Four satellites include a 5,000-Hz crossover frequency from the woofers to the tweeters, sensitivity of 90-dB sound-pressure level (SPL) at 1 meter, nominal impedance of 6 ohms, and power rating of 10 to 80 watts. Price: Infinitesimal Four satellites, \$430 a pair; Servo Subwoofer, \$650. Infinity Systems, Inc., Dept. SR, 9409 Owensmouth Ave., Chatsworth, CA 91311.

Lab Tests

We placed the Infinitesimal Four satellites on stands about 3 to 4 feet in

front of a wall and 8 feet apart. The tweeters were 33 inches from the floor. The subwoofer was midway between the satellites (not necessarily the ideal location, but readily accessible for measurements). The installation instructions recommend setting both subwoofer control knobs (level and crossover frequency) initially to their twelve o'clock positions and adjusting them as required for the best overall frequency balance. We found that the initial combination of settings seemed to give the best sound in our installation (the indicated crossover frequency was 85 Hz).

The room response of the satellites was flat within ±4 dB from below 100 Hz to 20,000 Hz (excluding a slight peak at 250 Hz that is a measurement artifact typical of stand-mounted speakers in our test room). The output between 5,000 and 10,000 Hz was slightly less than at lower and higher frequencies.

Close-miked measurements of the subwoofer output showed a maximum output from the port at 40 Hz, and the cone output reached its maximum at approximately the frequency setting of the crossover control. Splicing this curve to the room curve was difficult, since the resulting composite response bore little resemblance to what we heard in our listening evaluations. This is not an unusual problem with three-piece systems, whose bass modules normally deliver their best results when located in places that would be inconvenient or impractical for measurement purposes.

The impedance of the Infinitesimal Four satellites dipped to 4.5 ohms at 65 Hz, 4 ohms at 300 Hz, and 3.8 ohms between 5,000 and 6,000 Hz. The three highest readings were 10 ohms at 42 Hz, 20 ohms at 140 Hz, and 10.5 ohms at 1,400 Hz. Despite the speaker's 6-ohm rating, we would consider it a 4-ohm system (the subwoofer's input impedance, more than 4,000 ohms, has no effect on the overall system impedance).

Sensitivity of the Infinitesimal Four satellites was exactly as rated, 90-dB SPL at 1 meter with an input of 2.83 volts of pink noise. The subwoofer's distortion at that drive level was less than 1 percent at 75 Hz and above. Distortion at the port output reached 2 percent at 60 Hz, 8 percent at 45 Hz.

We measured the horizontal direc-

tivity on-axis and 45 degrees off-axis with a swept random-noise signal. The response change over that range was typically less than 5 dB up to 6,000 Hz, diverging gradually to 8 dB at 10,000 Hz and 10 dB at 20,000 Hz.

The Infinitesimal Four satellites absorbed considerable power without damage. The woofer cone reached its suspension limits with a single-pulse 100-Hz input of 225 watts into its 5.5ohm impedance. At 1,000 Hz the acoustic output waveform distorted at an input of 650 watts into its 6.2-ohm impedance. The EMIT-R tweeter showed the effectiveness of Infinity's protection system by a sudden drop in its 10,000-Hz output level at an input of 1,200 watts into its 4.1-ohm impedance (the average power delivered to the tweeter was more than 9 watts. sufficient to burn out the voice coil of an unprotected driver). The protection system operated within a second or so of the application of the tone-burst signal, and it automatically restored normal operation a couple of seconds after the level returned to normal. The subwoofer, being driven by its own amplifier, is also fully protected against overload damage.

Comments

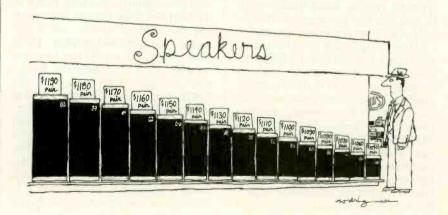
Similar in overall design to the company's high-end Modulus system (which we reviewed in June 1990), the Infinity Infinitesimal Four system is clearly among the elite in the three-piece-speaker category. Its styling and construction quality are commensurate with its price, as was its sound quality in our tests.

Most such speakers are sold only as complete systems, with the crossover frequency between bass module and satellites fixed and correctly balanced levels delivered to the various components. If the designer has done his job well, and if the user follows the installation instructions, such a system should be able to deliver as seamless and balanced a sound as the cost of the system allows (clearly, as with conventional speakers, there are sizable differences in sound quality between models).

In the case of the Infinity Infinitesimal Four, the design enables the satellites and the subwoofer to perform well either together or separately. The satellites had an open, slightly forward sound, with crisp, well-dispersed, and extended highs and a smooth lower midrange. In fact, they sounded fine by themselves, as we verified by simply turning down the level of the subwoofer. For their size, the Infinitesimal Four satellites are excellent speakers.

With the Servo Subwoofer operating, the system can deliver almost any desired amount of bottom end. Here is where the user's judgment takes over, and the resulting sound can range from one that's barely distinguishable from the unaided satellites to a heavy, thumping travesty of high fidelity. Assuming that the system is set up with reasonable care, it should hold its own against most comparably priced conventional speakers.

Comparable conventional speakers, however, are usually relatively large pieces of furniture that may or may not complement your home decor. The Infinity Infinitesimal Four, including its subwoofer, can be installed almost anywhere without significant aesthetic or acoustic problems, and the audible results should be completely consistent with the investment.



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Bass and

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Introducing a receiver with so much going for it, there's hardly enough room to do it justice. Tuning

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all tone and bal-

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Tuning Record Ou Selector allo you to recor one source

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Due to Yamaha's patented HCA Circuitry, the RX-950 delivers pure Class A performance, yet runs exceptionally cool. The amplifier in Yamaha's new audio-dedicated receiver will never degrade to Class AB, no matter how high

A massive 11 lb. 6 oz. power transformer ensures high output bower even when driving lowimpedance loads.

The RX-950 features ToP-ART. A new system design that virtually eliminates interference between channels and delivers maximum signal

burity. the output.

The RX-950 delivers 120 watts RMS per channel into 8 ohms from 20-20,000 Hz at no more than 0.015% THD. Or 180 watts RMS per channel into 4 ohms from 20-20,000 Hz at no more than 0.03% THD.

> The new RX-950 combines the performance of the finest separates with the convenience of a

To keep output impedance to a minimum, speakers are switched in front of their terminals. rather than at the switch position.

Ideally suited for multiple speaker installations. Up to six different zones can be controlled at one time through additional amplifiers connected to the two extra pre-amp outs.

For signal purity, exceptionally thick 1.6 mm high quality wire is used to route signals through the amplifier.

Dimensions: (WxHxD)17% inches x 6¾ inches x 17% inches

Integrated Multi-Function LCD Display

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The thick base of the RX-950 has exceptional anti-resonance, anti-magnetic and superior damping characteristics.

Offers 4 dedicated audio inputs and 2 video inputs.

Continuously variable loudness control, maintains natural tonality, even at low

volume levels.

frequencies. receiver. The heavy chassis and extra large High Gain The RX-950 is designed to feet of the RX-950 are designed for rve as the core component of AM Loop

Tuner features

Yamaha's Direct PLL

IF Count Synthesizer,

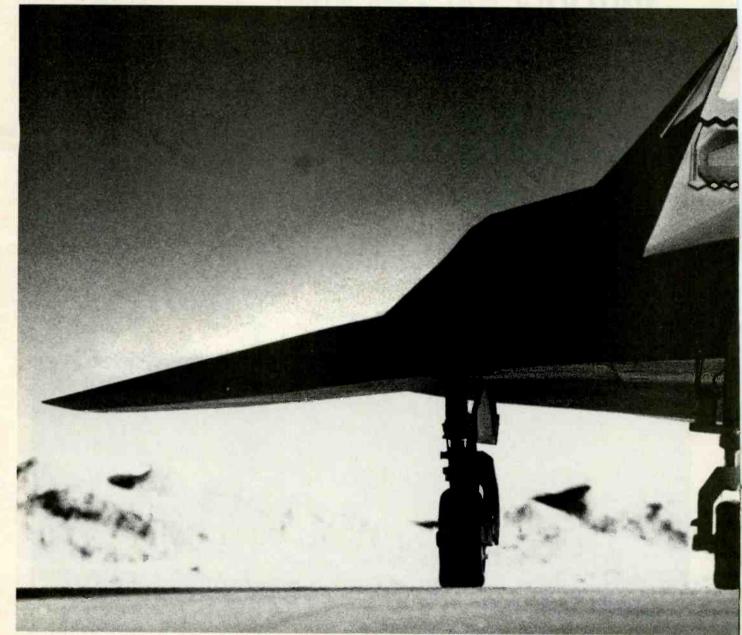
a microprocessor-

controlled tuning sys-

tem to lock onto the

weakest broadcast

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THE HIGHER THE PERFORMANCE,

Compare Maxell's XLII-S to an ordinary cassette. An obvious difference is the size of the windows. Remember: there are no bay windows in rockets, but in houseboats there are.

That tiny little slit of a window allowed us room to build additional support into the cassette shell for

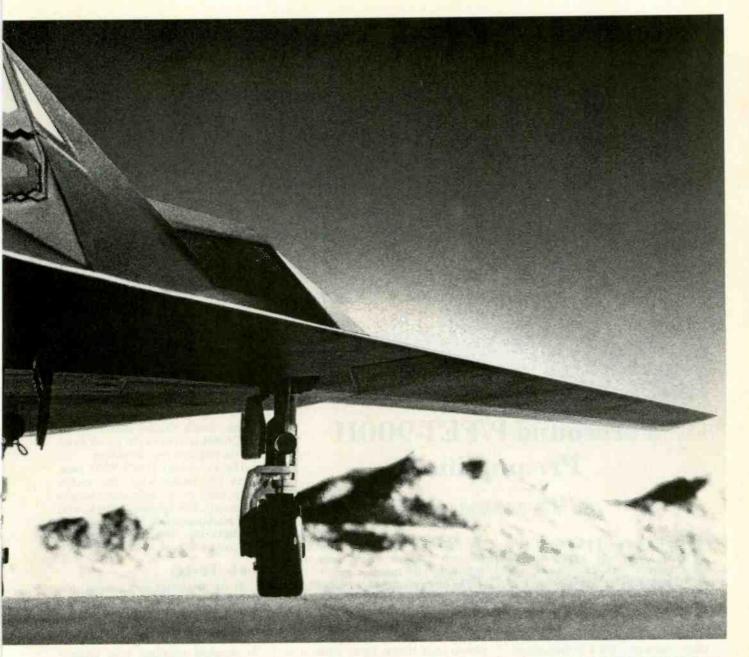
greater rigidity and durability.

The shell itself is a compound of ceramic and polymer resins. With 1.4 times the specific gravity of standard cassette shell material, it's anti-resonant, absorbs vibrations that can cause modulation noise.

Inside, the tape is formulated

with Black Magnetite—a higher energy magnetic material harnessed by Maxell engineers.

It contributes to the sound *CD*Review magazine described like this:
"Bass response that doesn't stop,
staggering dynamics, real music." And
in their review of Type II tapes, they



THE SMALLER THE WINDOWS.

rated XLII-S, "Head, shoulders and torso above the rest."

Of course, an XLII-S cassette is going to cost you more than one with big, low-performance windows and matching sound.

But not so much more that you have to go to Congress for it.





TAKE YOUR MUSIC TO THE MAX.



Parasound P/FET-900II Preamplifier

Julian Hirsch, Hirsch-Houck Laboratories

HE Parasound P/FET-900II is a new version of a preamplifier originally introduced in March 1989. Although the upgrade was directed by John Curl, a wellknown designer of "high-end" audio products, the preamplifier remains moderately priced. It uses fieldeffect transistors (FET's) throughout, as well as premium polypropylene and polystyrene capacitors, which Parasound says improve the sound quality. The phono-preamplifier section has also been revised, and the construction was upgraded by using glass-fiber circuit boards.

The P/FET-900II has six inputs: phono, CD, tuner, auxiliary, and two tape decks. There are two identical line outputs and two sets of taperecording outputs. Two of the three AC outlets are switched.

Small detented knobs are used for the bass and treble tone controls and the center-detented balance control. Loudness compensation is independent of the volume setting, employing a separate knob that primarily reduces the midrange output as it is rotated counterclockwise, with a lesser effect at low and high frequencies.

The other controls are pushbuttons. Two parallel rows of rectangular buttons independently select the input source and the source supplied to the tape-recording outputs. A green LED above each button lights when it is pressed. Tapes can be dubbed from either deck to the other. A power button and two smaller buttons. marked DIRECT and MONO, complete the front-panel control features. The direct button bypasses the tone-control circuits, and the mono button parallels the two stereo channels to form a mono signal.

Input and output signal switching is done by CMOS (complementary metal-oxide semiconductor) devices located close to the gold-plated input and output jacks. A small relay provides a 3-second turn-on delay, preventing audible thumps when the system is switched on. The power switch is rated at 10 amperes, and the two switched AC outlets have a 500-watt rating, which should enable the P/ FET-900II to control the power to all but the largest power amplifiers.

The Parasound P/FET-900II measures 171/4 inches wide, 101/2 inches deep, and 3 inches high, and it weighs II pounds. It is finished in black, with gold markings. Price: \$425. Parasound Products, Inc., Dept. SR, 950 Battery St., San Francisco, CA 94111.

Lab Tests

At its maximum gain setting, the P/FET-900II had an input sensitivity of 59 millivolts (mV) at the CD input and 1 mV at the phono input (1,000 Hz), for a reference output of 0.5 volt. At standard reference gain settings (high-level input of 0.5 volt or phono input of 5 mV for a 0.5-volt output), the respective A-weighted output noise levels were -91 and -81 dB.

The output clipped at 13.8 volts, and the phono input stage overloaded at inputs from 180 to 200 mV (referred to its 1,000-Hz gain). Although the specifications indicate a high-level input overload of 5 volts, we could not overload the P/FET-900II with our maximum available signal of 10 volts. The phono-input impedance was 48,000 ohms in parallel with 100 picofarads.

Frequency response through the CD input with the tone controls centered was flat within +0, -0.1 dBfrom 300 to 20,000 Hz and down 0.5 dB at 20 Hz on one channel and within

Audio/Video Receiver with Dolby Pro-Logic® Surround

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+0.1, -0.15 dB from 20 to 20.000 Hz on the other. The channel gains differed by 0.5 dB with the balance control centered, and it was difficult to match them with the balance control since the movement required was little more than the width of its detent. With the tone controls bypassed and the levels matched as closely as possible, the CD input's response was +0.2, -0 dB from 20 to 20,000 Hz.

Tone-control characteristics were typical, with the treble curves hinged at 2,500 Hz and the bass turnover frequency sliding between approximately 200 and 600 Hz. The loudness contours were adjustable over a wide range, from about 1.5 dB boost at both frequency extremes to a maximum boost (relative to 2,000 Hz) of 9 dB at 20 Hz and 3.5 dB at 20,000 Hz. Even the maximum boost would be considered a moderate degree of compensation by usual loudness-control stan-

dards. The RIAA phono equalization was extremely flat from 300 to 20,000 Hz and down about 1.2 dB at 20 Hz.

Total harmonic distortion plus noise (THD + N) at 1,000 Hz was about 0.008 percent at an output level of 1 volt, increasing to 0.02 percent at 3 volts and 0.05 percent at 5 volts. At lower levels, the THD + N readings were higher because of the increasing effect of the noise. A spectrum analysis, which excludes noise from the measurements, at 1 volt and 1,000 Hz showed low levels of a number of harmonics up to the nineteenth, with a total rms value of 0.0043 percent, consistent with our THD + N readings.

Comments

The measured performance of the P/FET-9001I was obviously good, though it showed somewhat more variation between channels than one would expect from a true "high-end"

preamplifier. Of course, one would also expect such a unit to sell for several times the price of this one. The P/FET-900II's electrical performance was certainly adequate, and more, for its modest price, and it operated with an overall smoothness and freedom from extraneous noises or mechanical problems that should satisfy the most critical user.

Removing the preamplifier's cover revealed very neat, workmanlike construction. Almost everything is on a single large circuit board, with smaller circuit boards carrying some of the front-panel controls. Interconnections are through parallel-wire cables that plug into the mother board. The RCA-type signal jacks use ceramic insulation, and the preamplifier's overall internal appearance definitely suggests that of some far costlier high-end components.

We encountered a strange problem when connecting our test sample of the P/FET-900II into a music system. The provision of three AC outlets. with the switched ones having a 500watt rating, encouraged us to use the preamplifier to switch a good 100watt-per-channel power amplifier, but turning on the system produced only a blown fuse in the preamp. Checking the power connections disclosed nothing out of the ordinary. Fortunately, we had a couple of spare fuses, and we attempted to start the system again, with identical results. The next step was to unplug the power amplifier, and this time the preamplifier and the tuner we were using came on.

We suspect that this difficulty was peculiar either to our sample or to the particular setup we used, since another sample at STEREO REVIEW's editorial offices switched an amplifier almost twice as powerful without incident. Like many similar components, the P/FET-900II has a small capacitor bypassing its power wiring. It is conceivable that a switching current surge might have blown the fuses because of some odd combination of power-plug polarities in the system (none of the plugs, including that of the preamplifier, was polarized).

The P/FET-90011 sounded just fine, however. It was dead quiet, and its controls were smooth and noiseless. In all, it's an excellent value in a flexible control unit with first-rate sound at a truly affordable price.

FEATURES

- Only discrete FET circuits used
- Premium polypropylene and polystyrene capacitors throughout
- CMOS solid-state signal switching
- Inputs for CD, tuner, phono, auxiliary, two audio tape decks
- Independent selection of sources for listening and recording
- Dubbing from either tape deck to the other
- Detented bass and treble tone controls

- Continuously variable loudness compensation independent of volume setting
- DIRECT button to bypass tone controls
- MONO button to parallel input
 shappels.
- Gold-plated RCA-type input/output jacks
- Two switched AC outlets with 500watt rating

LABORATORY MEASUREMENTS

Output level at clipping: greater than 10 volts

Sensitivity (for a 0.5-volt output): CD, 59 mV; phono, 1 mV

A-weighted noise (referred to a 0.5-volt output): Cl), -91 dB; phono. -81 dB

Distortion (THD + N at 1,000 Hz): 0.008% at 1 volt, 0.02% at 3 volts

Frequency response (CD input, tone controls bypassed): 20 to 20,000 Hz +0.2, -0 dB

Phono-input overload (1,000-Hz-equivalent levels): 200 mV at 20 Hz, 191 mV at 1,000 Hz, 194 mV at 20,000 Hz

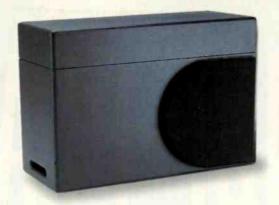
Phono-input impedance: 48,000 ohms in parallel with 100 pF

RIAA equalization error: +0, -1.2 dB from 20 to 20,000 Hz

Tone-control range: ± 10 dB at 100 Hz and 10,000 Hz

Loudness-compensation range (relative to 2,000-Hz level): 1.5 to 9 dB at 20 Hz, 1.5 to 3.5 dB at 20,000 Hz

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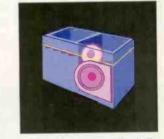


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COMBI-PLAYERS:

ry of the laser videodisc was the development of the smaller, but otherwise very similar, compact disc. Although the CD carried only audio (at first, anyway), it built up a huge head of steam in the marketplace, recketing past the older laserdisc format in popularity. Sales of compact disc players grew faster than those of any previous consumer electron-

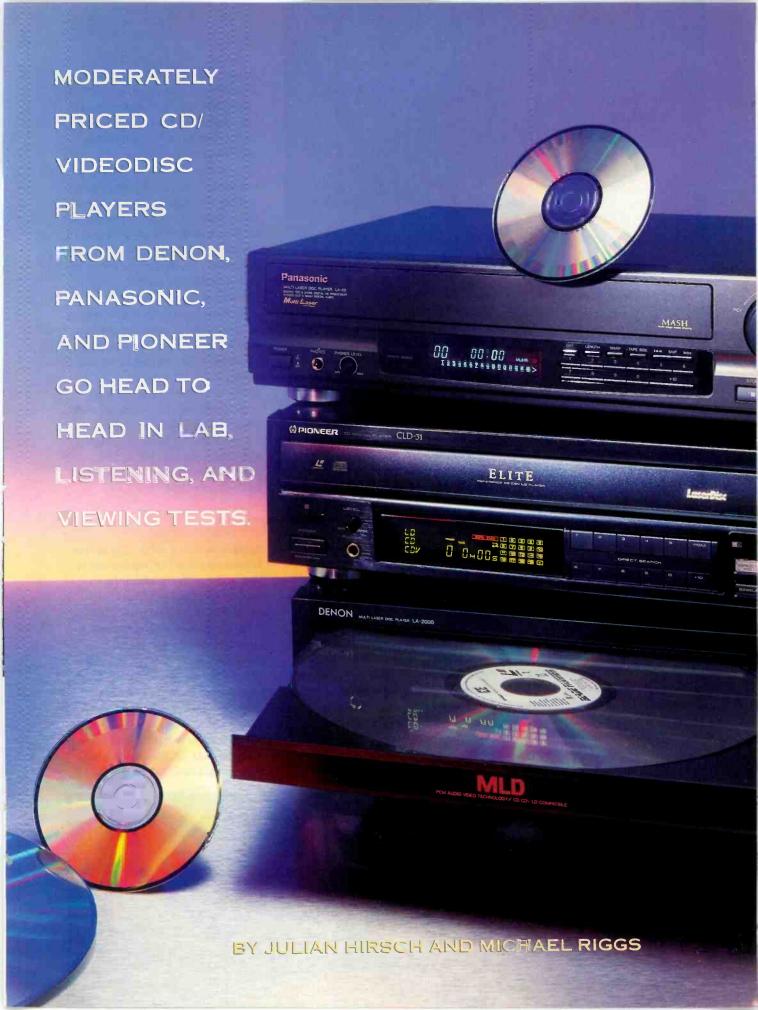
ics product, including the videocassette recorder—the laserdisc's great nemesis.

Because CD's and laserdiscs are so similar physically and operationally, it eventually proved possible to put digital soundtracks on laserdiscs and to build players that could handle both formats. The first combi-player was clunky and expensive but it worked. Since then, combi-players have become

THREE ON A BUDGET



PHOTOS BY JOOK P. LEUNG





DENON LA-2000 (\$700)

The LA-2000 is the less expensive of two combi-players available from Denon, Like the other players reviewed here, it performs all the basic functions of both a CD player and a laserdisc player, lacking only capabilities that few users would consider essential, such as still-frame with CLV laserdiscs, automatic side change for laserdiscs, and S-video output (which is seldom beneficial on a laserdisc player, anyway). It does include Denon's 20-bit Super Linear digital-to-analog (D/A) converter, however, as well as a feature

called Auto Edit that divides playback of a CD into two parts of approximately equal length to facilitate taping. The player can also be set to insert 4-second pauses between tracks to insure proper operation of the music-scan features on many cassette decks.

The LA-2000 can be programmed to play as many as twenty tracks or numbered chapters in any sequence and to repeat a selected portion of a disc, any track or programmed sequence, or the entire disc. Or you can set it to play tracks of a CD in random order. The player provides for fast

scanning and track or chapter stepping in either direction, and you can cue directly to any numbered track or chapter by means of a numeric keypad. You can also cue by frame number on CAV laserdiscs and by elapsed time on CLV laserdiscs.

A front-panel display window shows the type of disc loaded, a music calendar of available track numbers, the programmed mode, the current track or chapter number, and elapsed or remaining time. The same information can also be displayed on a video monitor or TV set. Most of the player's frontpanel functions are duplicated on a wellorganized wireless remote control.

The player has standard composite-video and stereo audio line outputs, plus a frontpanel headphone jack with volume control. Although virtually all laserdiscs now have digital audio, the LA-2000 will automatically switch to playback of the analog soundtrack with CX noise reduction if no digital soundtrack is available.

Dimensions: 171/a inches wide, 5 inches high, 163/4 inches deep. Weight: 221/2 pounds. Denon, Dept. SR, 222 New Road, Parsippany, NJ 07054.

PANASONIC LX-101 (\$600)

Although the lowest priced of the three players in this comparison, the LX-101 does not skimp on features. It has two sets of standard audio/video outputs plus an Svideo output and a front-panel headphone jack with volume control. Digital-to-analog (D/A) conversion is handled by MASH 1-bit converters, and Y/C separation for the Svideo output is via a digital comb filter. The video section also has a digital time-base corrector (TBC) to minimize picture distortion. The LX-101 is the only player reviewed here to have a radio-frequency (RF) output, for connection to a TV set lacking direct A/V inputs. Like other combiplayers, it can play the analog soundtracks of old laserdiscs that lack digital audio, with CX noise reduction where appropriate. An audio selector enables you to choose stereo output or to send either channel to both outputs.

A shuttle dial provides easy control of fast-scan speed in either direction. The player also allows for track or chapter

skipping In either direction, programmed playback of as many as twenty tracks or numbered chapters in any order, and random-order playback of all the tracks on a CD or just those in a programmed sequence. It can repeat a single track or chapter, an entire disc, any portion of a disc between two selected points, or a programmed sequence, and with CD's repeat can be combined with random play. Intro-scan plays the first 10 seconds of each track on a CD or in a programmed sequence. A numeric keypad enables direct

cueing to any track or chapter. You can cue by frame number on CAV laserdiscs and by elapsed time on CLV laserdiscs. The LX-101 can select tracks on a CD to fit neally onto both sides of a cassette.

The player provides front-panel and onscreen displays of chapter and frame numbers for laserdiscs, track number for CD's, and elapsed time. All front-panel controls are duplicated on a wireless remote supplied with the player.

Dimensions: 17 inches wide, 41/2 inches high, 153/4 inches deep. Weight: 18 pounds. Panasonic, Dept. SR, One Panasonic Way, Secaucus, NJ 07094.



sleeker, more capable, and less costly. Over this same period, the laserdisc format has enjoyed steady growth in popularity as more and more people have come to appreciate its advantage in both audio and video quality over videocassettes, especially when recorded programs are viewed on a large screen and listened to over a wide-range component audio system. In short, the laserdisc has become the medium of choice for home theater.

All current combi-players can handle 3- and 5-inch audio CD's; 5-inch CD-Videos (CD-V's), which combine about 5 minutes of music video with about 20 minutes of straight digital audio; and 8- and 12-inch laserdiscs with either digital or analog soundtracks. They can also play both basic categories of laserdisc: CAV (constant angular velocity) and CLV (constant linear velocity). CAV discs have a single frame of video on every track, regardless of its distance from the center, which makes it easy for players to find a specific frame or to display a still frame, for example. CLV discs use the available real estate more efficiently, packing more information onto the larger outer tracks than onto the smaller inner ones. Breaking CAV's tidy track-to-frame correspondence makes it a lot harder for a player to do special effects, but it also doubles the maximum playing time to 60 minutes per side, which is why CLV discs are so much more common. It is possible to get effects such as slow motion and still frame even with CLV discs, but it requires a digital frame store—a costly feature found only in players with prices beyond the \$1,000 barrier.

So among the things the players reviewed here will not do are special effects with CLV discs. The Denon LA-2000 (\$700), Panasonic LX-101 (\$600), and Pioneer Elite CLD-31 (\$700) are priced only slightly above the current \$500 floor for combi-players and well below the \$2,000 ceiling. The other main thing they won't do that some of the top players will is to move automatically from Side A to Side B of a laserdisc instead of making you get up and turn the disc over. So you don't get off scot-free. What's more impressive, however, is how little else is missing from any of these players in terms of features (as you will see from the individual product descriptions, none of it significant) or even, for the most part, performance.

Lab Tests

Laboratory tests and evaluations of the three players were conducted by



PIONEER ELITE CLD-31 (\$700)

Pioneer, which championed the laserdisc for many years when few other manufacturers seemed interested, invented the combi-player, and its long experience with the format is evident in the polished design of the CLD-31—the lower priced of two models in the company's Elite Series of components. On the back panel are two sets of gold-plated audio/video outputs (stereo audio and composite video), two Svideo outputs, connectors for an optional JA-RF3L RF modulator, and minl-jacks for System Remote connection with SRcompatible Pioneer components and for CD-Deck Synchro recording with compatible Pioneer tape decks. Like the other players reviewed here, the CLD-31 has a frontpanel headphone jack with volume control, but it is the only one to have a digital audio output-via fiber-optic connector-for linkup to a digital recorder or to another component with a digital-to-analog (D/A) converter. The CLD-31's internal D/A converter is a 1-bit design fed by a 20-bit digital filter. When necessary, the player can also reproduce analog soundtracks with CX noise reduction, and you can select stereo, left-channel-only, or right-channelonly playback with either type of soundtrack.

The CLD-31 can be programmed to play as many as twenty-four tracks or chapters in any order or all tracks or chapters in random order. It can repeat a portion of a disc between any two selected points, a track or numbered chapter, an entire side, or a programmed sequence, or you can have it repeat random playback of all tracks or chapters. Dubbing to tape is simplified by a peak-search function, which finds the highest audio level on a disc, and by

Compu Program Edit, which selects the sequence of tracks that will best fit onto two sides of a tape of user-specified duration.

The CLD-31 also supports all the usual cueing features: track or chapter skip in either direction, fast scan in either direction (controlled by a shuttle dial), direct cueling to a track or chapter number, cueing by frame number on CAV laserdiscs, and cueing by elapsed time on CLV discs. Still-frame, frame-advance, and slowspeed playback are possible with CAV laserdiscs (with sound muted) but not with CLV discs. An intro-scan function (called Hi-Lite scan by Pioneer) plays approximately the first 8 seconds of each numbered chapter of a laserdisc or about 8 seconds of each track of a CD, starting 1 minute into the track or at another userspecified point.

The player's front-panel display shows the track or chapter number; various permutations of elapsed, remaining, and total time, depending on the type of disc being played and user selection; program functions; and status of operating modes. Some of this information can also be displayed on a video monitor, except when the CLD-31's video circuits are disabled by the Direct CD function, which is supposed to reduce audio noise and disc-startup time when it is playing compact discs.

The most important controls, including the shuttle dial and a digital volume control with a 25-dB range, are duplicated on the player's wireless remote. Dimensions: 161/2 inches wide, 43/4 inches high, 161/2 inches deep. Weight: 171/2 pounds. Pioneer Electronics (USA), Inc., Dept. SR, P.O. Box 1720, Long Beach, CA 90801.

VIDEO PERFORMANCE

FOR picture quality, it's hard to beat laser videodiscs. True, you can't record on a laserdisc, and yes, Super VHS and Hi8 tapes, at their best, can give laserdiscs a run for the money. But a much wider selection of movies is available on disc than on Hi8 or S-VHS tape; laserdisc players are less expensive than VCR's in either of the highresolution formats; and though the margin has narrowed, discs still outpace tapes for both audio and video quality. Even by the high standards of the laserdisc format, none of the three combi-players reviewed here is less than good in its video performance, but there are differences among them.

One of the key measurements listed in the table on page 55 is video frequency response—an indirect measure of horizontal resolution, which indicates the amount of picture detail you'll be able to see (assuming that your monitor's resolution is at least as good as the player's). Video response is measured with a "multiburst" comprising signals at six frequencies from 500 kHz to 4.1 MHz. (The upper limit of NTSC TV broadcasts is 4.2 MHz. corresponding to a horizontal resolution of approximately 330 lines.) The more extended and uniform the response, the better. Although all three players exhibited satisfactory video response, the Panasonic LX-101 was the outstanding performer.

Horizontal resolution can also be judged directly by viewing a test pattern on a topflight monitor. Results of this test paralleled those from the response measurements, with the Denon LA-2000 coming in at approximately 325 lines compared with 370 to 380 lines for the Pioneer CLD-31 and Panasonic LX-101.

A luminance-level measurement expresses video output from a fullwhite signal as a percentage of a reference level. The ideal reading is 100 percent, but since video monitors automatically correct for minor discrepancies, the small errors we found on the test bench were not apparent in normal viewing.

Gray-scale (or luminance) nonlinearity indicates how accurately shades of gray are

reproduced. It is rare to find a laserdisc player that tracks perfectly throughout the full range, but the Panasonic LX-101 proved an exception. The 10-percent (worst-case) nonlinearity exhibited by the competing players is hard to distinguish when viewing normal signals, however, so we would not downgrade them on this point.

Chroma differential gain is a measure of how color saturation varies with scene brightness. Again, the Panasonic player edged out the competition, but all three were within acceptable limits. Chroma differential phase indicates how hue (or tint) varies with scene brightness. In this case, all the players tested performed equally well, maintaining chroma phase independent of luminance level.

Chroma level (color saturation) and phase (hue) error are straight measures of color accuracy. Since monitors correct for small offsets in overall chroma level, just as they do for luminance level, the absolute error figure for each of the six hues used in testing (yellow, cyan, green, magenta, red, and blue) is less important than the spread between them. The less difference between the smallest and the largest error, the less discrepancy in color saturation there will be between hues, which is uncorrectable. All of the players performed well in this test. Similarly, a constant error in chroma phase can be corrected by adjusting the tint control on your monitor, so again, it is the spread that matters. All of the players were excellent in this regard.

In our viewing evaluation, using both test and commercial discs, it was difficult to distinguish between the Pioneer CLD-31 and the Panasonic LX-101, both of which rank among the finest laserdisc players we have tested. In this exalted company, the Denon LA-2000 proved somewhat less distinguished with respect to resolution and color noise. But it performed adequately overall, and its relative shortcomings in video reproduction probably would not stand out except in direct comparison with a superior player.

-Edward J. Foster, Diversified Science Laboratories

Hirsch-Houck Laboratories for audio performance and Diversified Science Laboratories for video. Both sets of measurements are summarized in the table at right, and a full analysis of the video results is presented in "Video Performance" at left. Because the AFM (audio frequency modulation) analog audio tracks on laserdiscs have become so completely secondary to the digital tracks, we elected to test only digital performance of the players' audio sections.

All three players exhibited very good basic frequency response, with the Denon LA-2000 producing an exceptionally flat curve. The Pioneer CLD-31's response was only slightly less even, and it also exhibited very low de-emphasis error (although this is important only when playing one of the relatively small number of preemphasized CD's). The LA-2000's deemphasis error was more substantial, and the Panasonic LX-101's deviations in basic response and de-emphasis, though not large in absolute terms and opposite in direction, were by a fair margin the greatest of the lot.

Output channel balance was essentially perfect for the Panasonic and Pioneer players, and the match was very, very close for the Denon unit as well. All three had much more than adequate channel separation—as good as infinite perceptually—but the measurements we got from the Pioneer player were so astonishing that we at first thought something was wrong with our test equipment. Separation reached 140 dB at low frequencies on the CLD-31, and it was still 110 dB at 20,000 Hz.

The Denon and Panasonic players had almost identical figures for signalto-noise ratio (S/N), about 99 dB, which is respectable for a CD player but no more. The Pioneer CLD-31's 126-dB S/N was more like what we're used to seeing from a topflight CDonly unit. The 1-bit digital-to-analog (D/A) converters in the Panasonic and Pioneer players remained linear down to the lowest recorded levels and generated very little distortion. We were surprised at how poorly Denon's 20bit converters did by comparison, especially in low-level linearity.

Nonetheless, the electrical performance of almost any decent player that is not malfunctioning is usually good enough not to be a major issue. Relatively mundane characteristics such as shock resistance and the ability to track through and correct for minor disc defects are often more important to user satisfaction. Here, too.

LABORATORY MEASUREMENTS

Hirsch-Houck Laboratories	DENON	PANASONIC	PIONEER
Frequency response (20 to 20,000 Hz)	+0.05, -0 dB	+0, -0.87 dB	+0.01, -0.12 dB
De-emphasis error (maximum)	+0.34 dB	+ 0.64 dB	$-0.09\mathrm{dB}$
Signal-to-noise ratio (A-weighted)	99.3 dB	99 dB	126.2 dB
Distortion at 0 dB (THD + N, 20 to 20,000 Hz)	≤0.1%	≤0.035%	≤0.063%
Linearity error (at 1,000 Hz) - 60 dB - 70 dB - 80 dB - 90 dB	-0.7 dB -1.5 dB -4.8 dB -17.3 dB	-0.1 dB -0.17 dB +0.15 dB +2 dB	-0.3 dB -0.15 dB 0 dB +2.2 dB
Channel separation (at 1,000 Hz)	91 db	98 dB	134 dB
Channel balance (at 1,000 Hz)	±0.16 dB	±<0.01 dB	±0.025 dB
Defect tracking (Pierre Verany #2 test disc)	500 micrometers	750 micrometers	2,000 micrometers
Line output (maximum)	2.01 volts	2.09 volts	2. 16 volts
Cueing time (CD, maximum)	2.5 seconds	1.5 seconds	3 seconds
Impact resistance (top and sides)	С	C	С
VIDEO			
Diversified Science Laboratories	DENON	PANASONIC	PIONEER
Video frequency response at 2.0 MHz at 3.0 MHz at 4.1 MHz	- 2.5 dB - 4 dB - 8.5 dB	- 1.5 dB - 2 dB - 4 dB	-2.3 dB -3 dB -6 dB
Luminance level	102%	108%	107%
Gray-scale nonlinearity (worst case)	10%	0	10%
Chroma level (low to high)	-7.5 to -6.3 dB	-4.8 to -4 dB	-2.5 to -1.5 dB
Chroma phase error (low to high)	+6°	+6°	+3° to +4°
Chroma differential gain	18%	10%	18%
Chroma differential phase	below noise	below noise	below noise

we found significant differences, particularly in defect tracking.

Although the Denon LA-2000 worked fine in normal operation with clean, well-made CD's, it stumbled quickly under the more adverse conditions presented by the Pierre Verany #2 test disc, and the Panasonic LX-101's performance in the test was only fair. The Pioneer CLD-31's defect tracking, on the other hand, was up with the very best we have seen from any CD player. All three players skipped when they were tapped lightly on the top or sides, perhaps because

the large disc trays used in combiplayers cannot be made as rigid as the smaller ones of CD-only models. The Panasonic unit proved exceptionally fleet in cueing—about twice as fast as the Pioneer player and almost that much faster than the Denon as well.

Conclusions

Although none of the players under test was less than satisfactory on its own merits, we were somewhat disappointed with the Denon LA-2000's showing relative to the others. For the same money or less, the Panasonic

LX-101 and the Pioneer CLD-31 were a cut above it in both features and performance. Choosing between those two is more difficult. Although the LX-101's video performance outstripped the CLD-31's by a slight margin on the test bench, they came in dead even when playing normal program material. If you don't mind paying a little more, we think the Pioneer player's overall design and superior audio performance tip the balance in its favor. If you do mind, the LX-101, which was a very close second, is a terrific value.

Improving listening-

THE room in which you listen to music has a profound effect on what you hear. It's a little like the situation in the house of mirrors at an amusement park, its walls lined with weirdly bent mirrors. One moment you look fat, the next thin, and a bit further along you have a giraffe's neck. Mirrors on parallel walls confuse you with infinite reflections of one another, each smaller and more distorted than the one before.

Sound behaves much like light in this respect, except that it will reflect off any hard surface. Imagine sitting in your living room with two chutes projecting from the wall across the

room. Suddenly hundreds of ping-pong balls fly from the chutes. Balls that hit hard

surfaces, such as walls, uncarpeted floor, and ceilings, keep bouncing and ricocheting. Balls that hit your stuffed armchair, hanging tapestry, or bearskin rug thud to a halt.

ACOUSTICS

or, how to get the best

Extreme examples of "live" and "dead" rooms, acoustically speaking, are depicted on the opposite page. The top room is sparsely furnished with sleek, modern pieces and has large expanses of hard flooring and windows, all of which reflect and diffuse sound. The overstuffed couch, plush settee, carpet, and thick draperies in the lower room absorb sound and reduce reflections.

Anarchic and unpredictable as these processes may seem, they are subject to the laws of physics, which means they are both understandable and, to some degree at least, controllable. Just as a subtle change in the curve of a mirror can substantially alter the reflection you see, so can small modifications in decor and furnishings noticeably alter the sound of a room—to the better if you know what you are doing.

Your first concern, however, should be to get a good start. Loudspeakers can have quite different sound qualities of their own, which are in turn affected by the environments in which they are placed. It is important that the speakers you choose have essentially good sonic performance and that they mate well with basic acoustics of the room in which you plan to use them. Consequently, you should be careful about choosing a speaker by the way it sounds in a dealer's listening room, which is unlikely to resemble your own. The best course is to arrange with the dealer for a trial listening period, so that you can determine the compatibility of the speakers with your room before you make a final commitment to buying them.

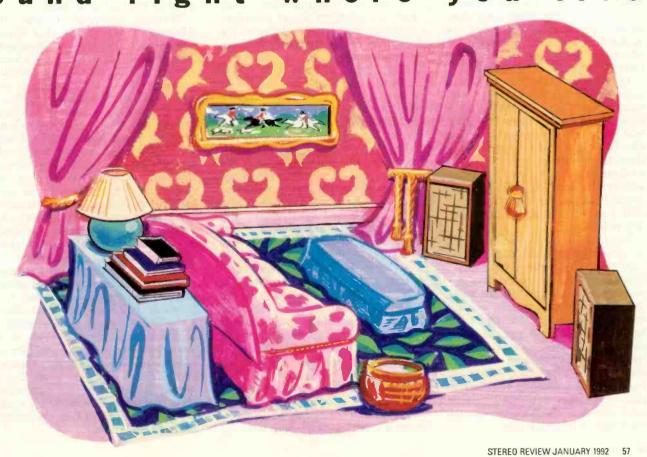
Once you've settled on the speakers, you can go to work modifying the room for the best possible sound. If you're

by Rich Warren

building or remodeling a home, consider listening-room acoustics in your initial plans and then fine-tune the room with your speakers in place. Measures as small as moving a chair or buying drapes can sometimes improve your sound quality more than hundreds of dollars for better speakers.



sound right where you



HREE characteristics determine the sound of a room: reflection, absorption, and diffusion. The size and shape of the room, and where you place the speakers in relation to the room surfaces, affect the relationship of these properties. In general, you want some reflection, preferably away from the immediate area of the speakers, a fair amount of absorption, and plenty of diffusion. Too little reflection and too much absorption make a room sound "dead" or "dry." This may increase the precision of the stereo image, but at the expense of liveliness. Too much reflection blurs the image and usually accentuates the high frequencies, giving the sound a "pingy" quality. Diffusion breaks up and scatters sound waves randomly. resulting in a more natural, pleasing quality. It's better to treat a live, reflective room by increasing diffusion than by adding excessive absorption.

Ideally, room surfaces should not be parallel. Designers of recording studios and concert halls usually avoid parallel walls and even floors and ceilings that are parallel. But most homes have box-shaped rooms in which every surface is parallel to the one opposite it. This results in the barber-shop mirror effect of endless reflections, which are known in acoustical terms as resonances. The room dimensions dictate which frequencies will be acoustically amplified by resonances. The most obvious symptom is one or more overemphasized bass notes.

Try to make sure that one side of each pair of the room's parallel surfaces reflects sound poorly. If you have a hardwood or quarry-tile floor, you might use decorative acoustical tiles (with plenty of insulation above them) for the ceiling. A plushly carpeted floor helps compensate for a drywall or plaster ceiling. Old-fashioned ceiling beams can provide some diffusion, but they will also create some new reflections.

When doing initial construction or remodeling, specify double-dry-wall (also called gypsum board). The less a wall flexes, the less it resonates. In most homes, the walls and exposed glass sing along with the music. An acoustical consultant can help you design or redesign a room for good sound. Sometimes moving a wall by a foot or two can change a mediocre listening room into a good one. If you have forced-air heating, be sure to treat ventilation ducts. Most ducts need acoustical absorption inside and the proper diffusers outside.

Most speakers sound best when the wall behind them is as nonreflective as possible, since early reflections tend to muddy the sound and blur the stereo image. Other speakers, however, such as the Bose Direct/Reflecting models. use wall reflections to their advantage. Some purists partially cover reflective walls with special acoustical foam patterned with little triangular wedges (a home version of the wedges used in anechoic chambers). The most common brand, Sonex, is available in tiles and panels with depths ranging from 1 to 4 inches. Only the thickest Sonex absorbs low frequencies, and even then not in the lowest bass region. Sonex is surprisingly attractive, although it will clash with Early American or French Provincial decor.

You can also build your own absorptive panels. Construct a wooden frame at least a yard on each side, stuff it with fiberglass (the thicker the better), and then cover it with designer cloth. You can move the finished panels around the room to test for the best placement before permanently affixing them. Camouflage absorbers by hanging a rug or tapestry over them. Rugs and tapestries alone are not thick enough to be acoustically significant below the highest frequencies, though they're better than nothing.

Cover your windows. Pleated draperies are excellent sound absorbers. Venetian blinds provide diffusion. Exposed glass is usually the last thing you want acoustically.

Furnishings also play a major role. A large, overstuffed couch absorbs plenty of sound. A modern Scandinavian style, on the other hand, with sleek, bare wood, reflects and diffuses sound. Avoid placing furniture between where you listen and the speakers, especially any with a broad, flat surface, such as a table. Furnishings with irregular surfaces—an antique spinning wheel, say—increase diffusion. Lamps and light fixtures also help break up sound waves. By moving these objects around you can subtly tune the room.

Tall bookcases filled with irregularly sized books or a mixture of CD's and cassettes work well as diffusers. Instead of placing similar-size books on each shelf, use an assortment of books of different depths to create an irregular surface. Place the bookcases against the walls with the worst reflection problems.

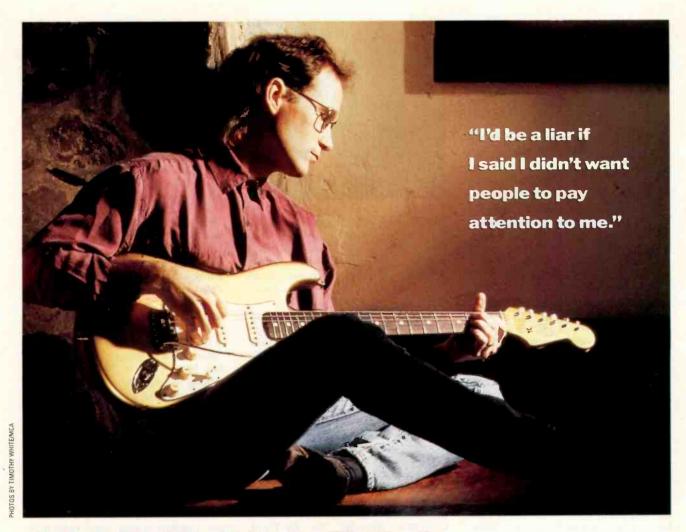
If you're really serious about highquality sound reproduction, you might want to take the last dramatic steps to a great listening room. Start with the "Chesky Jazz Sampler" CD, which includes a series of Listening Environment Diagnostic Recordings (LEDR). Use these to assess such things as the stereo image in your room and make the basic adjustments accordingly. Then hire a professional acoustical consultant. This costs from \$100 to \$400 for a complete room analysis.

Consultants use a battery of measuring equipment. One of the most popular and effective is time-delay spectrometry (TDS), best known by Techron's TEF (time-energy-frequency) trademark. These measurements can then be used as the basis for professional treatment of your room's sonic shortcomings. Treatment costs range from a hundred to a few thousand dollars, depending on the severity of the problems. In the long run it's a better investment than buying ever more extravagant speakers.

A company named RPG Diffusion Systems (RPG originally stood for reflection phase grating) manufactures custom-tuned diffusers that hang on the wall. It also makes absorbers and "Abfusers," which adjustably combine absorption and diffusion. You can also buy ASC Tube Traps, passive columns that both absorb and diffuse specific frequencies. These are usually placed in corners and are especially good for taming boomy bass.

Phantom Acoustics, founded by Threshold's Nelson Pass, has developed a new concept in room treatment. The Phantom Acoustics Active Low Frequency Acoustic Control looks deceptively like a simple columnar absorber/diffuser. But within the Phantom column are a special pressuresensing microphone, signal-processing circuitry, a high-power amplifier, and a 15-inch woofer. The Phantom Shadow, sold in pairs, "reads" the room to find low-frequency resonances. It then radiates an inverted-phase correction signal back into the room to smooth the response by acoustically canceling those resonances—a more benign and effective approach than traditional electronic equalization.

Using the Chesky LEDR tests and your ears, you can improve the sound of your room at minimal expense. Appropriate choice and placement of furniture and wall coverings can benefit a \$1,000 audio system as much as a \$10,000 system. And if you do plan to spend as much as \$10,000 for a system, you owe it to your ears to allocate a quarter of that budget for acoustical room treatment. This relatively small investment can make your equipment sound like a million.



MARSHALL CRENSHAW

OU pretty much expect to like Marshall Crenshaw, even before you meet him. After all, what's not to like about a slight, balding, bespectacled, thirty-seven-year-old guy who writes songs about cynical girls and his favorite wastes of time? You expect him to be soft-spoken, just a bit sardonic, on the intellectual side: no glitz, no punk, just the right amount of attitude.

And you're not likely to be disappointed. Crenshaw arrived for my interview at the New York City offices of his record company—MCA, which had just released his sixth album, "Life's Too Short"—looking and sounding the way you'd expect: slight-

ly disheveled, wearing a silly hat, about 20 minutes late and only vaguely apologetic. But he was more guarded than you might think, a little less articulate—maybe, he said later, because he believes the press has so often portrayed him as a "geek" ("They always make fun of my glasses"). Maybe that's why he's perfected a trademark hipster act—he says "That's cool" so often that you start expecting him to add "I can dig it."

But then Crenshaw has been slightly out of step with the times from the beginning, or at least since the release of his debut album, "Marshall Crenshaw," in 1982. Coming in an era that

by Sara Nelson

celebrated pompous, anonymous arena-scaled corporate rock, Crenshaw was writing simple, subtly crafted pop songs that owed more to late-Fifties rock than to Me Generation anthems. Music was always in his blood, he told me; his father's family was "musically inclined," and his cousin, Carrie Evans, sang with Loretta Lynn and Ronnie Milsap. As a kid growing up in Detroit, he heard music all around him, although he admits that he was a little too young to really appreciate the Motown groups that were happening about ten miles away from his neighborhood. "I like to think that if I had been ten vears older I would have hung around down there and picked up on them," he said wistfully. "But I was wasting my time going to school."

Even so, Crenshaw picked up on a certain "Detroit sensibility," which he described as "idiosyncratic, full of elements from lots of different places; powerful and with a blackness to it." His first musical experience came at age ten, he said, when he taught himself to play the guitar: "Actually, I started playing because I wanted to hang around with my cousin Chuck, and he played guitar. If I wanted to be like Chuck I had to do what he did."

But Chuck soon gave way to the Beatles as a primary influence. "Once the Beatles appeared," Crenshaw said, "everything changed overnight." Up to this point he "had been the only kid in my class at school who knew what rock-and-roll was. Then there was the Ed Sullivan show, and the next day, everybody wanted to be the Beatles."

RENSHAW was one of the few who got the chance. Although he had been playing in local bands in Detroit, he was not "high profile" in any way. But his long-standing obsession with the Beatles—"their music has become my generation's folk music," he said—paid off in 1978 when he made a home tape of himself as John Lennon, singing I Should Have Known Better, and sent it off to the producers of the Broadway megahit Beatlemania!

"By this time, Beatles nostalgia was big business," Crenshaw recalled. "People were still so hungry to see the Beatles. It was an obsession. And the people who did *Beatlemania!* had figured a way to cash in. It was a reasonably low-cost show to produce, and it was guaranteed to rake in the bucks."

When Crenshaw sent his tape, the producers were getting ready to form a road company; they were impressed



enough to travel to Detroit to audition him. Almost immediately he found himself beginning a year-and-a-half stint as Lennon in the L.A. company, and later on the road (an experience Crenshaw described as "character building").

Finally, early in 1980, he wound up in New York City, and though he was a bit too old and too much of a traditionalist to make a convincing New Waver, he found himself intrigued nonetheless by the rock movement revolving around downtown clubs like CBGB. Forming a band with his brother Robert on drums and Chris Donato on bass, he slogged through the clubs, attracted favorable press attention almost immediately (reviewers invariably compared him to Buddy Holly). and in short order found himself signed with Warner Bros. His 1982 debut album, produced by Richard Gottehrer (Blondie, the Go-Go's), sold respectably and made the yearend Ten Best list of nearly every critic in the country.

Four other albums, all with different producers, followed over the next several years—"Field Day" (Steve Lillywhite), "Downtown" (T-Bone Burnette), "Maryanne and Twelve Others" (Don Dixon), and "Good Evening" (the Bangles' producer, David Kahne). All were well received, if not megasellers, as were numerous concert appearances where Crenshaw cemented his rep as a thinking person's pop singer/songwriter.

Prior to *Beatlemania!*, however, Crenshaw had never really thought of himself as a performer. "I'd never had any love of being on stage," he told me. "When I'd been in bands, I'd kind of hide behind the microphone stand when I wasn't singing."

Still, his unpretentious stage act eventually led into his second celebrity-imitation role, as Buddy Holly in the hit 1987 film *La Bamba*. Crenshaw's one-song/two-scene appearance as the doomed rock pioneer was

so convincing, in fact, that the producers-to-be of the recent Broadway biomusical Buddy were soon knocking on his door. "I turned that part down twice," Crenshaw said, noting that accepting it would have typed him and "cut me off from doing anything else." The producers were adamant that he see the script, however. "And after I read it, I said, 'Now you really can forget it.'

"Well," he added, "maybe I should have talked to them about money. Maybe then I woulda done it."

He's kidding, of course. Or is he? That's the Crenshaw conundrum: He makes a statement, then doubles back to contradict himself. On the one hand, for example, he said he likes being a kind of demi-celeb, likes being able to take his career in any direction that suits him. He prides himself on not selling out. And vet he claimed that You're My Favorite Waste of Time is one of his favorite songs because he "made a lot of money on it" (the song has been covered by Bette Midler, among others). He said he became a musician out of a "real desire to make music," but then admitted, "I'd be a liar if I said I didn't want people to pay attention to me."

A notorious perfectionist, Crenshaw recently changed band personnel as well as record labels (brother Robert and Donato are long gone). "I started to feel frustrated after a while," he said, explaining why he has put together a new band (which includes his long-time idol, Kenny Aronoff, John Mellencamp's drummer). "I don't like to feel locked into situations." That's also why he and his wife, Ione, moved from New York's East Village to upstate Woodstock. "At the time I kind of blew off that there were crack dealers on my corner saying the same things to me every time I walked by. But I went back there recently, and I realized it's really nerve-racking." And then he backtracked: "But it was a really cool neighborhood. I do get a little cabin fever in the country.'

Maybe, Crenshaw suggested, all these changes in his life—even, or especially, the ones he can't articulate—are reflected in his music. "I accumulate songs one at a time," he said. "I have a singles mentality that was formed by Top 40 radio. But after I get a bunch of songs together, I can sort of look at them and say, 'Oh yeah. That's what I was thinking about.' I think every album really strongly reflects the atmosphere in which it was conceived."

The Breakthrough.



The original Adcom GFA-555 power amplifier.

The New Br



ot long after its introduction, the Adcom GFA- 555 power amplifier was widely considered a breakthrough in audio technology. Its performance was rated superior to amplifiers costing two and three times as much. Indeed, some critics had difficulty in naming a better sounding component at any price.

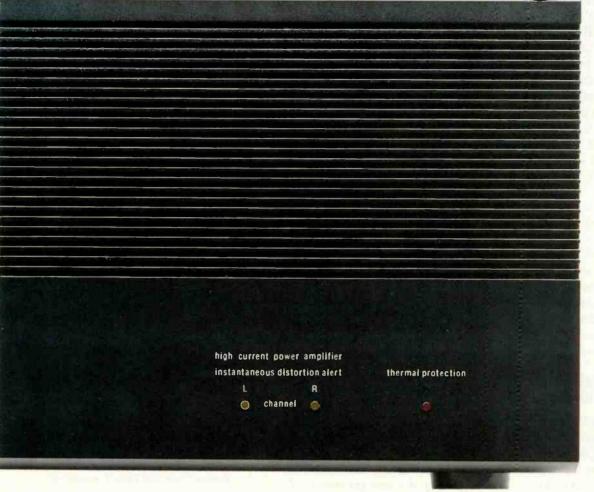
While the GFA-555 "... went on to become one of the best-selling amplifiers of all time"*, Adcom designers expanded their search for sonic perfection by investigating several new improvements. Using the GFA-555 as their model, they experimented with new circuits and component parts to see how close they could come to creating an even more desirable, upgraded GFA-555.

Now, after years of working on improving what was already one of the finest amplifiers available, Adcom announces the GFA-555II, a new breakthrough in performance and value. Rated at 200 watts per channel,** the new GFA-555II offers greater stability, superior heat dissipation and less distortion, even when driving complex speaker loads. It is everything the famous GFA-555 is known for, and more.

High Current: High Performance

While it is to be expected that an amplifier will perform well under predictable laboratory conditions, it is more important that an amplifier is capable of high performance during real-world operating conditions. Driving the complex and varying loads of today's





The new Adcom GFA-55511 power amplifier.

advanced speakers with musical signals supplied by the newest, most dynamic software, is the task of the world's best amplifiers.

A speaker rated nominally at 8 ohms may represent an actual load of between 60 and 2 ohms depending upon the frequencies it is reproducing. Some esoteric speakers actually present as little as 1 ohm at certain frequencies. In such cases, excessive demands are put on an amplifier's output stage to deliver more and more current. When these demands are pushed to the limit, lesser designs may distort, shut down or self destruct.

To meet the extraordinary requirements of today's musical source material and speaker systems, the GFA-555II's newly designed triple Darlington output stage is capable of delivering more than 75 amps of

peak current per channel into low impedances safely and with a high degree of stability. Additionally, each channel has been given a larger single, contoured heat sink to improve heat dissipation, allow for better bias tracking, and allow easier handling during installation.

Adcom also takes advantage of direct coupling its amplification stages to eliminate the use of coupling capacitors (and their inherent problems), which can be responsible for a variety of signal anomalies and distortions. The GFA-555II also eliminates coils in the output circuits which are known to induce frequency-response irregularities and lower damping factor. Direct coupling keeps damping factor high at all frequencies, lowers phase shift and improves performance into all speaker systems including electrostatics.

(Over please)

A Mighty Power Supply

In order to provide for the enormous demands of its output stages, the Adcom GFA-555II has a newer, even more potent power supply. Its larger potted toroidal transformer assures superior heat transfer from its core and better overall regulation. This improved regulation translates into a more stable and reliable amplifier.

Specially designed filter storage capacitors with a total capacitance of 60,000 microfarads provide the tremendous power reserves needed during the highest dynamic demands of music. An impressive way of demonstrating the strength of this reserve power is to unplug the AC line cord of the GFA-555II after playing your system for awhile. You'll hear the music continue for several seconds with the power disconnected!

The new, mightier power supply of the GFA-555II enables its superior output stages to operate at their fullest potential, minimizing distortion at even the lowest of frequencies and providing astounding dynamic power across the entire audio spectrum.

Cool & Safe In All Conditions

The Adcom GFA-555II runs reasonably cool even under quite demanding operating conditions. Its potted power supply transformer and one-piece, larger heat sinks allow for better heat dissipation. More cooling vents on the standard cover and chassis also contribute to its consistent, reliable operation.

Sustained and unusually highpower operation may activate a thermal overload protection circuit which will be indicated by an LED on the front panel. When the amplifier cools to a safe temperature, its operation is automatically restored. Under most home conditions its optional ventilating fan is unnecessary, but it is available for special applications which may cause an unusually high operating temperature.

To protect the GFA-555II from very large overloads such as an output short circuit, readily accessible, rear mounted DC power supply fuses are used. Overall, the GFA-555II is a stable, dependable operator which should outlive many other components in your music

Instantaneous **Distortion Alert**

To instantly warn you of the approach of any form of distortion including THD, IM, TIM or SID which exceeds 1 percent, separate channel, front panel LEDs will illuminate.

These highly accurate indicators, activated by Adcom's unique circuitry monitoring the activity in the internal feedback loop warn you of the dangers of excessive distortion well before clipping.

The New Breakthrough In Performance And Value

Adcom has built its reputation by offering more sound for less money. Perhaps the leading example of Adcom's high performance, high value products has been the GFA-555. Year after year, it has received an unprecedented amount of critical acclaim, winning industry design awards and rave reviews throughout the world.

Instead of resting on its reputation, Adcom has created the beginning of a new generation of amplifiers. The GFA-555II marks a new standard for performance at a reasonable price, giving more and more music lovers the opportunity of experiencing the thrill of sonic perfection without the shock of exorbitant costs.

Visit your Adcom dealer. Ask for a demonstration of the new GFA-555II. Then ask its price. You'll hear how good this new breakthrough sounds.

Specifications:

(to FTC Requirements)

Power output, watts/channel, continuous, 20 Hz - 20 kHz, <0.04% THD:

8 ohms/200 4 ohms/325

<0.09% THD, bridged w/ fan option installed:

Signal-to-noise ratio, A-weighted, 200 watts into 8 ohms: >110 dB

Input impedance: 100,000 ohms

Input sensitivity:

200 watts into 8 ohms: 1.75 V rms 1 watt into 8 ohms: 130 mV rms

Damping factor (20 Hz - 20 kHz): >800

Dynamic headroom into 4 ohms: 2.5 dB

Chassis dimensions: 63/4" (172mm) x 17" (432mm) x 12 3/16" (310mm)

Maximum dimensions: 7 1/4" (185mm) x 17" (432mm) x 12 3/16" (310mm)

Shipping weight: 39 lbs. (18kg)

Available options:

555 II FAN: Top mounted, automatically variable, ventilating fan. RM-7 rack mount adaptors. White front panel.

Build a superior stereo system with these matching Adcom components.



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^{*}John Atkinson Stereophile, Vol. 13 No. 10, Oct. 1990

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OT in his most optimistic projections could John Koss have anticipated the impact of his plans in 1958 to offer the first commercial stereo headphones. Bundled with the Koss Model 390 portable phonograph, the SP3 Stereophone was simply a hook to reel in customers. The gimmick worked, but with a twist: Most of the interest was in the headphones, not the record player. Three months later, the phonograph was scratched from the company lineup, and Koss concentrated on filling a fast-growing demand for stereo headphones.

Thirty-four years later, consumers are more than ever taken with the idea of private hi-fi. With headphones, music lovers can turn on and tune out without disturbing anyone else in the room, in the next apartment, or on the next blanket at the beach. There are now several hundred models to choose from, with a variety

of designs and styles and prices to fit every budget.

You can spend anywhere from under \$10 for a pair of earbuds on a wire to about \$8,000 for a set of ultra-high-end electrostatics. Most models, however, use moving-coil dynamic drivers, sell for between \$50 and \$300, and plug into a

standard headphone jack on an amplifier or source component.

The two basic types of headphones are circumaural and open-air. Circumaural phones have earcups that fit around the ear, enclosing you in sound while blocking out ambient noise. They usually have better low-bass response than open-air headphones, but they also shut out almost all outside sounds unless the back is vented in some way. If you want to be able to hear the telephone or doorbell while listening to music, closed-back phones are not a good choice, and they're not appropriate for jogging, biking, or driving: You need to be able to hear horns, sirens, or screeching tires. You probably wouldn't want to walk around with closed-back headphones on your head anyway, since they're heavier and more cumbersome than open-air models.

Open-air phones rest lightly on the ears, which makes them comfortable for jogging or sitting for extended periods of time. Many open-air models now come with miniplugs for connection to the 1/8-inch jacks on a personal cassette or CD

HEADPHOUSES

player and ¼-inch adaptors for connection to a home stereo system. (Adaptors are also sold at electronic-parts stores.)

Electrostatic headphones usually require external amplification and attach to a special coupler that connects to the speaker terminals on an amplifier. They're for the serious audiophile, and prices typically start in three figures and can go up to several thousand dollars. Wireless phones, as the name implies, require no fixed connection to a program source. Audio signals are sent by infrared or radio frequencies (RF) from a transmitter that's connected to a source component, preamplifier, or receiver; the signal is amplified in the phones (usually powered from a battery). At least one RF model can receive at up to 150 feet away from the transmitter, even through walls. Infrared models must operate within line of sight from the transmitter up to a distance of about 25 feet.

Headphone specifications such as frequency response and sensitivity, like loudspeaker specs, can suggest such performance limits as low-bass capability or power draw (an important consideration when you're running off batteries), but the real test is in the sound and the feel. Headphones should be evaluated the same way you would evaluate a speaker: Is the sound free from distortion? Is the bass deep and clean? Are the upper frequencies crisp without sounding tinny? But just as important is how headphones *feel*. Do you prefer an open or enclosed feeling? Do they have enough padding? Are they too heavy?

The headphones shown on the next three pages are representative of the wide variety available for home use. But remember, no matter which headphones you choose, listening to them at high volume can damage your hearing—permanently. Take care of your ears by listening at reasonable levels.

by Rebecca Day

ILLUSTRATION BY DAVID MCGRIEVEY



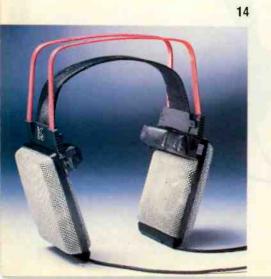
- 1. At a list price of \$400, the Stax SR Gamma electrostatic headphones, which come with an energizing adaptor to power them, are among the company's least expensive models.
- 2. Sennheiser's HDC-450 phones (\$899) feature Active Noise Cancellation circuitry to block unwanted sounds from outside.
- 3. The Memorex EDM-770 (\$120) is a circumaural headphone that claims response stretching from 5 to 30,000 Hz.
- 4. The Koss Pro/450 (\$175), a hybrid design incorporating a piezoelectric tweeter and a moving-coil bass driver, is said to have better bass response and wider dynamic range than conventional phones.
- Aiwa's HP-X500 headphones (\$75)
 have a glass-fiber-reinforced baffle and a 24K-gold-plated plug and adaptor.
- Recoton's HTS 60 phones (\$80), one
 of four models in its Home Theater Sound
 (HTS) line, feature drivers with titanium
 diaphragms and samarium-cobalt magnets.
- The Beyer Dynamic IRS 690 wheeless headphone system (\$400) includes the open-backed DT 690 phones, an infrared transmitter, and a power supply.
- 8. Grado's SR300 (\$275) has a rated frequency range of 10 to 30,000 Hz and a sensitivity of 94 dB. The 8-ounce headset has a 7-foot round cord with a 1/4-inch plug.
- 9. Azden's DM-70 (\$80) uses 40millimeter drivers with copper-clad aluminum voice coils. Rated for a frequency range of 6 to 24,000 Hz, the phones can accept a maximum input of 500 milliwatts.
- 10. Realistic's Pro 70 (\$70) has titanium diaphragms, samarium-cobalt magnets, and a built-in volume control on its 8-foot cord.



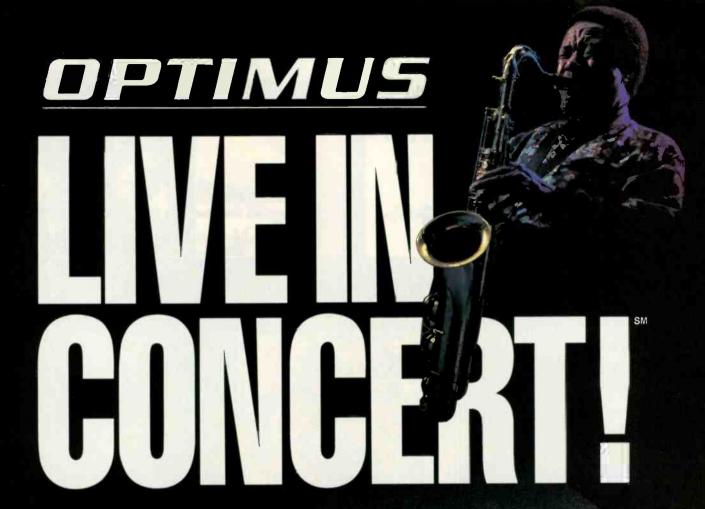
- 11. Stanton's ST-10 (\$110) uses a closedback, dual-driver design that is said to isolate the listener fully. It is equipped with a 7-foot cord and a gold-plated adaptor plug.
- 12. Sony's MDR-CD850 (\$200) features large driver diaphragms (50 millimeters) and ceramic-composite housings.
- 13. Nady's WH-95 wireless phones (\$220) claim a range of over 150 feet. The RF transmitter accepts up to three sources.
- 14. AKG's K 1000 (\$895) is designed so that the headphones "float" next to the ears without pressing on them.
- 15. Audio-Technica's ATH-M4X (\$50) is an open-backed headphone set claiming a response range of 20 to 20,000 Hz.



15





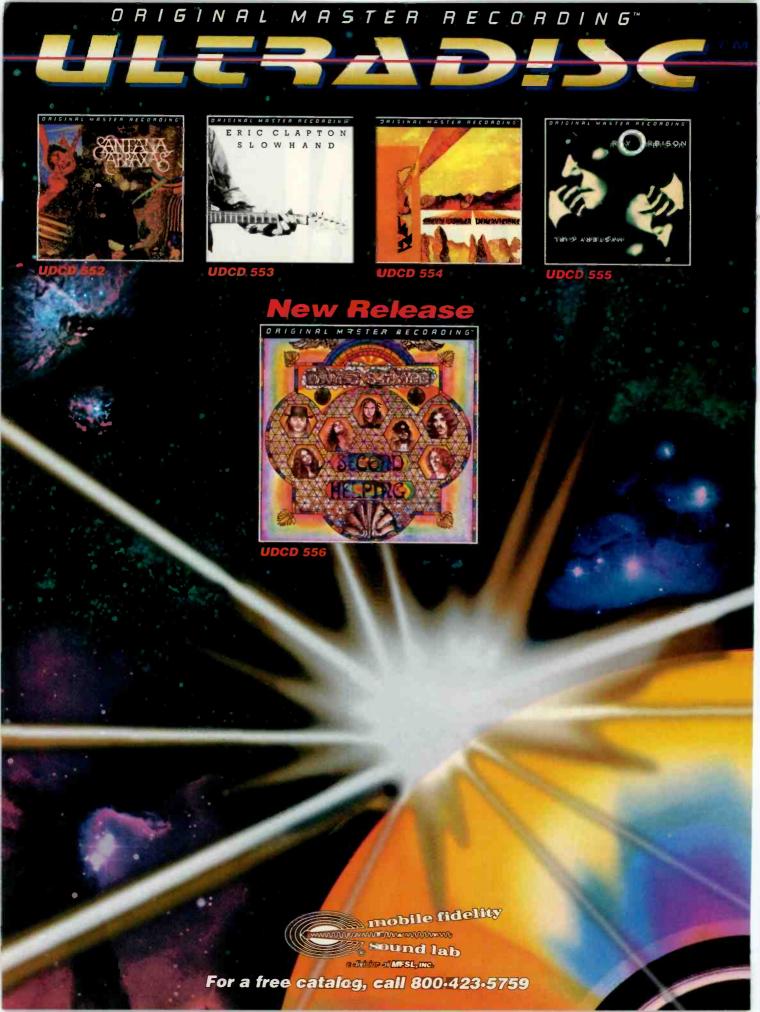




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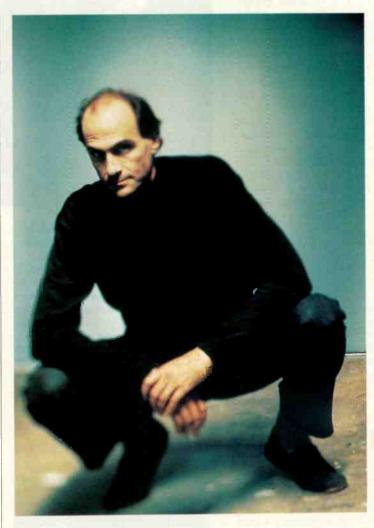
James Taylor Strong and Sweet

KAY, I'll admit it: I'm a sucker for James Taylor. I like the painstaking craftsmanship of his songwriting. I like the velvety quality of his voice. I like the quiet resolve of his moral vision. I like the sly humor that tempers his starchy piety. Hey, I even like the slightly dorky way he transports himself around a stage.

Nevertheless, I can admit further that all James Taylor albums are not created equal. While always tasteful and sincere, his music has tended in recent years to be a little too restrained.

Which is why his latest album, "New Moon Shine," is such a treat. The album doesn't give us a brave new James Taylor, but it does show him performing with greater intensity. By focusing on a few social problems, Taylor seems to have stoked his creative fires. Native Son takes an unflinching look at soldiers coming home after a war-presumably the Persian Gulf conflict—and trying to put their lives back together. Slap Leather attacks the shortsightedness of spending money on weapons for cops and soldiers rather than on schools and housing. And Down in the Hole puts us inside the head of a homeless man. In these tunes you feel Taylor's urgency; the songs, like the issues behind them, truly matter to him.

But there's more here than just current affairs. Taylor's literary tendencies have produced a nostalgic collaboration with novelist Reynolds Price in Copperline, a sweet but not sappy look at growing up rural. And on his own, he's concocted a delightful varn, The Frozen Man, about a nineteenth-century man who has been thawed back to life after being frozen at sea. These songs get their strength from the details—the ramshackle former home in Copperline, "all spec house and plywood," that is now "tore up and tore up good," or the uniformed nurse who greets The Frozen Man after he's been revived ("She was all in white at the foot of my bed/I



said angel of mercy I'm alive or am I dead?").

Musically, Taylor ranges a little wider here than usual. Of course, the dominant style is folk-rock, and there is the usual r-&-b remake, in this case Sam Cooke's Everybody Loves to Cha Cha Cha. But the deeply moral Shed a Little Light kicks off with an a cappella church choir, and Slap Leather whips up a tart, Chuck Berry-like groove. The traditional song The Water Is Wide gets a traditional treatment, an uncluttered, melancholy sweep of acoustic instruments (violin, guitar, piano, dobro). The pristine performance, the last in "New Moon Shine," rounds off this well-balanced album and brings it to an exquisite rest. Ron Givens

JAMES TAYLOR: New Moon Shine. James Taylor (vocals, guitar); Danny Kortchmar (guitar); Mark O'Connor (fiddle); other musicians. Copperline; Down in the Hole; (I've Got to) Stop Thinkin' Bout That; Shed a Little Light; The Frozen Man; Slap Leather; Like Everyone She Knows; One More Go Round; Everybody Loves to Cha Cha Cha; Native Son; Oh Brother; The Water Is Wide. COLUM-BIA © CK 46038 (48 min), © CT 46038.

BEST :

Barenboim's Warmhearted Bruckner Symphony No. 9

THE Chicago Symphony Orchestra, of which Daniel Barenboim is now music director, was the vehicle for his first recorded performance of the Bruckner Ninth Symphony, a well-received one for Deutsche Grammophon in 1976. So it is a minor irony that his second go-round, a Teldec recording made at an October 1990 concert, should feature not the Chicago Symphony but the Berlin Philharmonic.

Those who find the readings of Christoph von Dohnányi on London, Herbert von Karajan on Deutsche Grammophon, and Georg Solti, also on London, too cyclopean and toughfibered for their taste will respond very positively to this one by Barenboim, who makes the most of Bruckner's long-spanned melodic lines—in the outer movements especially. The opening is Feierlich, misterioso in every sense of those words, and with the presence of an audience (very quiet), the huge climaxes in the finale have weight but less of the edginess that occasionally characterizes the acoustics of the Philharmonie when it is empty.

In the awesome and always deeply moving valedictory third movement,



good terms), comes off with both elegance and strength.

On its own terms, then, here is a recorded realization of the Bruckner Ninth that does credit to all concerned—conductor, orchestra, and production staff.

David Hall

BRUCKNER: Symphony No. 9, in D Minor. Berlin Philharmonic Orchestra. Daniel Barenboim cond. Teldec © 9031-72140-2 (63 min).

Barenboim brings out the music's kinship with Wagner's *Tristan*. If he does not quite achieve shattering impact in the dissonance that leads to the conciliatory close, neither does he slight the score's rugged elements. The outer sections of the scherzo—a fantastic dance of primeval giants—has just the right pace and weight, and the unexpectedly skittery middle section, with its reminders of Hugo Wolf's *Italian Serenade* (Wolf and Bruckner were on

Lloyd Cole Gets a Little Weird

NYBODY out there interested in an album that sounds like a cross between Bob Dylan and Jack Jones? Well, apparently Lloyd Cole is. The first half of his remarkable new Capitol album, "Don't Get Weird on Me, Babe," is guitar-driven folk-rock, and its second half consists of moody, pop/cabaret songs with gorgeous orchestral accompaniments.

Of course, I'm kidding about the Jack Jones impressions—up to a point. The orchestral songs—scored by Paul Buckmaster, arranger of the Stones' Moonlight Mile and about a zillion Elton John records—don't really sound like Las Vegas; they're far more reminiscent of one of the oddest



of Sixties artifacts, Love's "Forever Changes." The Dylan comparison is also a bit overstated. Cole's singing here (more assured than I recall from his earlier albums) has a boyishness and delicacy all its own, although the songwriting clearly reflects the Bard of Hibbing's influence, as the opening track. Tell Your Sister, makes abundantly clear with its "Rue Morgue Avenue" refrain. In any case, the folkrock songs have a more obvious jumping-off point-Television's stinging, twisty two-guitar approach, replicated here with considerable flair by Cole and New Wave guitar hero Robert Ouine.

Comparisons aside, however, the album is a fairly adventurous piece of

IM STEERE/CHICAGO SYMPHONY

work coming out of a record industry that's uncomfortable with any product that isn't cloned from somebody else's recent success. So it helps that Cole's new songs are mostly as accessible and tuneful as can be. True, the rock stuff seems more genuinely felt than the pop numbers, which have a whiff of formalist exercise about them, though Buckmaster's adroit arrangements manage to pull you in with fascinating touches recalling everybody from Gilbert Becaud to Glenn Campbell to Isaac Hayes. But when

you double back to rockers like She's a Girl and I'm a Man, you notice not only that Cole, Quine, and company are playing the very devil out of them, but that the songs themselves are often ineffably touching. And somehow everything seems to hang

The bottom line? "Don't Get Weird on Me, Babe" may not sell in Madonna-like numbers (reportedly, Cole is titling his next album "Can't Get Arrested"), but it certainly deserves to. At the very least, it's one of the most genuinely nervy and idiosyncratic major-label rock albums of the year.

Steve Simels

LLOYD COLE: Don't Get Weird on Me, Babe. Lloyd Cole (vocals, guitar); Robert Quine (guitar); Fred Maher (drums); orchestra, Paul Buckmaster arr. and cond. Tell Your Sister; Weeping Wine; To the Lions; Pay for it, The One You Never Had; She's a Girl and I'm a Man; Butterfly; There for Her; Margo's Waltz; Half of Everything; Man Enough; What He Doesn't Know. CAPITOL. © CDP 96077-2 (48 min), © C 96077-4.

Mozart for Two Pianos

URRAY PERAHIA completed his cycle of the Mozart piano concertos with the English Chamber Orchestra some time ago. and he has even remade two of the works with the Chamber Orchestra of Europe. It is only now, however, that he has gotten around to the two concertos for more than a single piano-K. 365 in E-flat and K. 242 in F Major-on a new Sony Classical disc with the English Chamber Orchestra and the pianist Radu Lupu, who is himself one of the most highly regarded Mozarteans of our time. Lupu had, in fact, recorded the K. 365 concerto earlier, with André Previn as his fellow soloist and conductor. He has also recorded Mozart's Two-Piano Sonata, K. 448, and Schubert's four-hand Fantasy in F Minor with Perahia, and that release indicated the very special sort of complete partnership that is confirmed in this new recording of both double concertos.

Sony has confusingly labeled the CD "Mozart: Concertos for Two & Three Pianos," but there are actually only two pianists involved. Mozart did indeed compose K. 242 for three pianos, but after he settled in Vienna five years later, he revised the work for two pianos—having in the meantime composed the altogether superior K. 365 for two pianos from the beginning. The misleading labeling is the only complaint anyone with working ears could possibly raise about the recording, however, which may not be the most ambitious of the hundreds of releases for the Mozart year but is surely one of the most treasurable.

There have been more than a few attractive recordings of K. 365 over



Radu Lupu and Murray Peraltia

the years, and some that have stood out, but none that has so fully realized the remarkable character of this work. The music is more than ingratiating; it is downright delicious, full of playfulness, tenderness, and elegance, and with a stunning poignancy in the slow movement. Its overall substance and depth are still widely underacknowledged. Not in this case, though; it is all here, and K. 242 actually comes across as a worthy companion piece—just as Mozart knew it might be when he decided to fold the original three solo parts into two.

Another curiosity in the labeling is that no conductor is specified: the two soloists' names simply appear below that of the orchestra. One might assume Perahia conducted, since we are accustomed to his filling the dual role in his Mozart cycle, but the two pianists may have shared that responsibility, as they did every other phase of the musicmaking so radiantly pre-

served on this disc, which includes not only the two concertos but also the four-hand Variations, K. 501, and the Fantasia in F Minor, K. 608. The Fantasia, originally for a clockwork organ, was arranged for two pianos by Busoni, and the portions he left out have been restored by Perahia and Lupu. These pieces are by no means mere encores; they, too, are music of substance—the Fantasia in particular one of those masterworks of pure inspiration beyond regard for its performing medium—and nothing less than revelatory here. Richard Freed

MOZART: Concertos for Two Pianos in E-flat Major (K. 365) and F Major (K. 242). Murray Perahia, Radu Lupu (pianos); English Chamber Orchestra. Fantasia in F Minor (K. 608, arr. Busoni/Perahia/Lupu); Andante and Variations in G Major for Piano Duet (K. 501). Murray Perahia, Radu Lupu (pianos). Sony CLASSICAL ® SK 44915 (62 min), © ST 44915.

Stereo Review

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Popular Music

Recent discs and cassettes reviewed by Chris Albertson, Phyl Garland, Ron Givens, Roy Hemming, Alanna Nash, Parke Puterbaugh, and Steve Simels

MARIAH CAREY: Emotions. Mariah Carey (vocals); vocal and instrumental accompaniment. Emotions; And You Don't Remember; Can't Let Go; Make It Happen; If It's Over; and five others. COLUMBIA (D) CK 47980 (47 min), (C) CT

Performance: Fine singing Recording: Very good

When Mariah Carey is singing at her peak, she all but dares you not to listen. The lustrous texture of her voice, with its appealingly breathy quality, is enough to invite attention, but it is her startling high notes, far beyond the range of most vocalists, that inspire awe-not since the late Minnie Ripperton have we heard a pop singer produce such dazzling birdlike effects. But in spite of all her splendid singing in this new album, Carey seldom inspires the sort of deep emotional response that is the mark of a truly significant artist.

The fault is largely with the material. Carey wrote all the songs herself, with two exceptions—which turn out to be by far the best numbers here: the gospelflavored If It's Over, where Carey collaborated with Carole King, and the haunting jazz-based ballad The Wind, where Carey supplied the sensitive lyrics to Russ Freeman's music. The rest of the songs are simply funk-flecked elevator music, showing that Carey the composer is no match for Carey the singer.

Carey seems to be becoming a female Luther Vandross, another excellent singer whose recordings are bogged down with the star's own slickly commercial, sound-alike compositions. If Carey is able to break out of this stultifying mold, she might eventually do full justice to her vocal gifts.

BELINDA CARLISLE: Live Your Life, Be Free. Belinda Carlisle (vocals); other musicians. Live Your Life, Be Free; Do You Feel Like I Feel?; Half the World;

Explanation of Symbols

- © = Tape cassette
- 1 = LP record
- (1) = Compact disc (timings are to the nearest minute)

You Came Out of Nowhere; You're Nothing Without Me; I Plead Insanity; Emotional Highway; and four others. MCA ® MCAD-10446 (51 min), @ MCAC-10446.

> Performance: A musical trip Recording: Very good

"Live Your Life, Be Free" is the best of Belinda Carlisle's post-Go-Go's solo albums and at least as good as all the records by that pioneering New Wave girl group after their debut. The spirit of the songwriting is pure Sixties, taking up residence in that Day-Glo halfway house where breezy pop and colorful, urgently uptempo psychedelia coexisted for a brief but intoxicating spell. The instrumentation is straight-up Nineties, however, predominantly synthesized keyboards and percussion, plus up-to-date vocal treatments. Carlisle has an ideal voice for this stuff-that of an ingenue on the brink of heady new experiential realms—and her giggly vibrato provides the charm and naïveté necessary to put these elaborate pop confections across.

The album opens strongly with the title track, whose breathtaking a cappella intro blossoms into a first-rate pop song. Do You Feel Like I Feel?, which follows it, is a prime example of Carlisle's updated Sixties strategy, with synth hooks and a solid, danceable beat enfolding a dynamic chorus and potent vocal arrangement. The rest isn't consistently terrific, but songs like I Plead Insanity and Little Black Book gain presence with repeated exposure. Carlisle's influences are apparent in a few places: The vocals and twelve-string guitar in Loneliness Game beg comparison with the B-52's' Dry County, and You're Nothing Without Me owes more than a little to Love's kinetic, flamenco-style Alone Again Or. But that's how it went back in the Sixties; musicians borrowed from one another and tried to make something fresh through the art of synthesis. "Live Your Life, Be Free" isn't the most original or consequential album I've heard, but it's a fun piece of popcraft.

LLOYD COLE: Don't Get Weird on Me, Babe (see Best of the Month, page 72)

HARRY CONNICK, JR.: Blue Light, Red Light. Harry Connick, Jr. (vocals, piano); other musicians. Blue Light, Red Light (Someone's There); A Blessing and a Curse; You Didn't Know Me When; Jill; With Imagination (I'll Get There); If I Could Give You More; and five others. COLUMBIA @ CK 48685 (59 min), @ CT

Performance: Evocative Recording: Excellent

Young Harry Connick, Jr. has managed a minor miracle in resurrecting the tradition of big-band swing in an era when

most members of his generation are addicted to rock, rap, and rhythm rather than romance. In "Blue Light, Red Light" Connick sings a dozen original compositions in his own big-band arrangements. The whimsical lyrics depict a less complicated world where things always work out for the best, a time and place that might have been lifted from Frank Capra films. The very flavor of some of his more lighthearted numbers, such as the title song, You Didn't Know Me When, and If I Could Give You More, are delightfully evocative of the Forties and Fifties. The love he sings of never sinks to bumping and grinding. No \square drugs, booze, and blowouts here. But he &



Cormick: pop throwback

never sounds corny, either (an accomplishment in itself). Connick also demonstrates some depth when he settles into a more introspective mood. The ballad Jill, which he sings with cushioning sincerity, is beautiful and affecting by any measure, as is Sonny Cried, where his vocals are accompanied only by Russell Malone's guitar.

While the emphasis here is on Connick's singing, he deserves equal credit for how the songs are arranged. The clustered harmonies and instrumental colorings in the title song, for example, are Ellingtonian, but it is apparent that Connick has also listened well to scores by such fine arrangers as Billy May, though nothing seems merely imitative. The thrust, cohesion, and driving energy of Connick and his band are nothing less than thrilling when they let loose in the concluding number, Just Kiss Me. This stunning performance is a fitting finale for an album that should cement Connick's stature as more than just another pretty voice.

P.G.

ROBERTA FLACK: Set the Night to Music. Roberta Flack (vocals); vocal and instrumental accompaniment. The Waiting Game; Set the Night to Music; When Someone Tears Your Heart in Two; Something Your Heart Has Been Telling Me; You Make Me Feel Brand New; Unforgettable; My Foolish Heart; and



Jones: pop what?

four others. ATLANTIC © 82321-2 (51 min), © 82321-4.

Performance: Buried alive Recording: Satisfactory

After listening to "Set the Night to Music," Roberta Flack's first album in three years, I am bewildered. Why did Arif Mardin, her producer, choose music and arrangements that obscure, rather than showcase, all the special things Flack has to offer? She has one of the truly great voices—highly distinctive, immediately recognizable, and as sweet as honey on toast—and she can also be a brilliant interpreter, especially when she embraces a song, settling into a slow burn and creating a mood that is almost painfully intimate.

Too bad the mix here is not worthy of her. The opener, *The Waiting Game*, is a trite dance tune featuring Quincy Jones rapping in the background. Most of the

other new songs are not much better, the one goodie being a duet with Maxi Priest in the appealing title ballad. There are several standards, but Mardin has treated them inappropriately, too. The Victor Young classic My Foolish Heart is desecrated by a pop beat-at times Flack sounds like she's racing to catch up with the orchestra. In You Make Me Feel Brand New she's locked into another inappropriate tempo and offers a stilted reading. Much the same happens with Unforgettable. Only at the very end of this set does Flack lead from her strength with a lovely and pensive rendition of Always. If she had started where she ended, this could have been a far more rewarding album.

RICKIE LEE JONES: Pop Pop. Rickie Lee Jones (vocals); Robben Ford (acoustic guitar); Dino Saluzzi (bandoneón); David Was (background vocals); other musicians. My One and Only Love; Spring Can Really Hang You Up the Most; Hi-Lili Hi-Lo; Up from the Skies; Second Time Around; Dat Dere; I'll Be Seeing You; Bye Bye Blackbird; and four others. GEFFEN ® GEFD-24426 (50 min), © GEFC-24426.

Performance: Schizoid Recording: Very good

It isn't until the eleventh cut in this bizarre mish-mash of jazz standards, Broadway tunes, and covers of Sixties rock tunes that you remember why you swooned to Ricki Lee Jones in the first place. In that cut, Love Junkvard, cowritten by the project's producer, David Was, and John Keller, Jones veers away from her usual bluesy, beatnik affectations in an earnest little-girl-lost fashion. giving a performance that could have fit nicely into her head-turning 1979 debut album. But Love Junkyard fits into the rest of this program-stocked with warmed-over renditions of I Won't Grow Up from Peter Pan, Spring Can Really Hang You Up the Most, and an unrecognizable cover of Jimi Hendrix's Up from the Skies—as smoothly as oil mixes with water.

The overall idea for the album was apparently to expand Jones's jazz-standard repertory via spare backings hung together by Robben Ford's nylon-string acoustic guitar. At times, a nontraditional voice and style like Jones's in a shopworn standard can make the song seem fresh and contemporary. But her painful slur of an ending in Spring Can Really Hang You Up the Most and embarrassing veering off the musical track in Hi-Lili Hi-Lo tend to make her look less like a seeker of romance and afterglow than a young woman armed with enough freedom to make a fool out of herself. Aside from the occasional seductive saxophone solo and one semi-erotic tune, Dat Dere (about, surprisingly, a quizzical kid), "Pop Pop" is mostly slop, slop, an almost totally forgettable foray into what for Jones is dangerous territory. Did I say forgettable? We can only hope. A.N.

KENNY LOGGINS: Leap of Faith. Kenny Loggins (vocals, acoustic guitar); Sheryl Crow (duet vocals); Smokey Robinson, Mavis Staples (cameo vocals); vocal and instrumental accompaniment. Will of the Wind; Leap of Faith; The Real Thing; Conviction of the Heart; If You Believe; I Would Do Anything; Sweet Reunion; and five others. COLUMBIA © CK 46140 (66 min), © CT 46140.

Performance: Spiritual fog Recording: Very good

Remember when Kenny Loggins wrote melodies? When he came up with hummable stuff like Danny's Song, Footloose, Whenever I Call You Friend, and This Is It? That's the old Kenny Loggins. The new one is more concerned with integrating pop, world music, and adult contemporary, and in a less than memorable fashion.

Loggins is to be commended for attempting to write this entire album about the two things that occupy his heartlove for the planet and love among the human kind. But aside from the dreamy title song and two he wrote for members of his family (Cody's Song, for his second son, and My Father's House, a poignant spilling of the soul to his dead parent), he gets bogged down in predictable Earth Day lyrics, thoughts that are too personal and enigmatic (The Real Thing), and rhythmic experiments that veer off into the stratosphere. The singer may be working through a personal crisis-Too Early for the Sun, for example, details his recent "radical life shift," when "love entered"-but with little more than his positive, spiritual attitude and supple falsetto to lead the way, it may take a leap of faith, indeed, for his audience, New Age or otherwise, to follow.

OZZY OSBOURNE: No More Tears. Ozzy Osbourne (vocals); other musicians. Mr. Tinkertrain; Don't Wanna Change the World; Mama I'm Coming Home; Desire; No More Tears; and six others. EPIC © ZK 46795 (57 min), © ZT 46795.

Performance: Kinder, gentler Ozzy Recording: Fine

The reformed Ozzy Osbourne heard in "No More Tears" sounds less like Jack the Ripper than like a lovable, avuncular eccentric. Apparently in a recovery phase as regards his drinking and debauchery, Osbourne tempers the metal din in favor of something more melodic and thoughtfully constructed. You can practically hear an army of dumbfounded kids griping, "Sellout, man," but Ozzy truly sounds like he's (dare I say it?) maturing. Try playing Mama I'm Coming Home, a largely acoustic number boasting some nifty harmonies, for a cynical friend and ask him or her to guess the artist. The next sound you hear should be that of a body hitting the floor

Okay, most of "No More Tears" still

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aims toward rafter-rattling frenzy, but of a kind that anyone who found merit in Led Zeppelin should be able to appreciate. Osbourne's latest hotshot-guitarist discovery, Zakk Wylde, mixes finesse and melody with the de rigueur pyrotechnics. Don't Wanna Change the World and Desire boast jaw-dropping runs, but they go somewhere other than in circles. For instance, the lyrics for Don't Wanna Change turn the tables on those who claim a special rapport with the divine to justify passing judgment on others: "Tell me I'm a sinner, I've got news for you/I spoke to God this morning and he don't like you."

Osbourne and company get ambitious in the extended production number No More Tears and kick out the jams for a boisterous, unflinching account of lost years in Zombie Stomp. Amid a hail of saw-toothed guitar riffs and an indomitable rhythmic pulse, Hellraiser finds Ozzy wondering if all the hassles of the rockand-roll life are worth it-and unequivocally deciding they are. The question itself reveals a previously hidden capacity for reflection. "No More Tears" just might be heavy metal's "Sgt. Pepper." It's certainly the pinnacle in Ozzy Osbourne's career and a respectable piece of work by anyone's yardstick. Who would've thought it possible?

PEARL JAM: Ten. Pearl Jam (vocals and instrumentals). Once; Even Flow; Alive; Why Go; Black; Jeremy; Oceans; and four others. EPIC/ASSOCIATED © ZK 47857 (53 min), © ZT 47857.

Performance: Challenging Recording: Good

When I heard Pearl Jam in a club last summer, I almost lost all sense of time and space—not just because they were loud, but because they played as if their lives depended upon it. Now Pearl Jam's debut album, called "Ten" for reasons I don't understand, has captured much of the power I experienced that night. This band sounds larger than life, producing a towering inferno of roaring guitars, monumental bass and drums, and from-thegut vocals. When these same elements are combined by your average heavymetal band, they sound like clichés, but Pearl Jam knows better than to always take them over the top. The tunes here surge, ebb, and surge again, building up tension until an explosion can't be helped.
"Ten" is a soundtrack of the dysfunc-

"Ten" is a soundtrack of the dysfunctional life, taking on—with intelligence and rage—such subjects as mental illness, homelessness, divorce, and heartbreak. The anger and confusion in these songs seems postadolescent. In the song Alive, for example, a young man asks if he deserves to be alive: "Is that the question/And if so . . . if so/Who answers?" Even when Pearl Jam's lyrics try to be profound and end up pretentious, they're delivered with unshakable conviction by lead singer Eddie Vedder. The musicians backing him up share equally in the forcefulness of these performances, ripping away when things get hot and pulling back into jittery restraint when they cool off. Lead guitarist Mike McCready, in particular, plays with both fury and discipline. Like the rest of the band, he knows how to turn it off as well as turn it on. The push-pull of Pearl Jam is irresistible.

PROCOL HARUM: The Prodigal Stranger. Procol Harum (vocals and instrumentals); other musicians. The Truth Won't Fade Away; Holding On; Man with a Mission; (You Can't) Turn Back the Page; One More Time; A Dream in Ev'ry Home; and six others. Zoo © 72445-11011-2 (52 min), © 72445-11011-1

Performance: Dramatic Recording: Good

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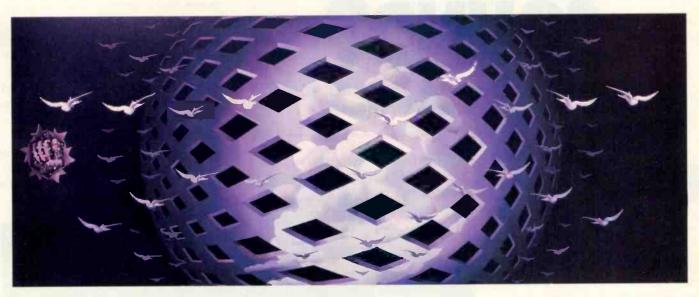
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sion of this band recorded an album with a real symphony orchestra. Today, Procol Harum uses modern technology to fill out the arrangements. Synthesizers imitate strings on many of the tracks here, which may plod along but nearly always sound compelling anyway. Lead singer and pianist Gary Brooker-with the occasional help of organist Matthew Fisher and a few others-has written some strong, if somewhat portentous melodies, and the delicate interplay of Brooker's decorative piano and Fisher's atmospheric organ creates an intimate counterweight. Guitarist Robin Trower snaps off some urgent, impassioned notes on the few occasions when he gets the spotlight. And Brooker's singing is utterly sincere; even if he has to strain to hit the high notes, you always believe the feeling behind his effort. A lot of the time he's agitated about the state of the world, or angry about war, intolerance, and materialism, although he also has a few things to get off his chest about the winning and losing of love. Gee, listening to him, you can almost relive the late Sixties and early Seventies—back when Procol Harum was doing this sort of stuff for the first time.

CHRIS STAMEY: Fireworks. Chris Stamey (vocals, guitar); Mitch Easter (rhythm guitar); Peter Holsapple (piano); Anton Fier, Ed Shockley (drums); other musicians. The Company of Light; Something Came over Me; Glorious Delusion; Time Is Running Out; Two Places at Once; Perfect Time; The Newlyweds; and six others. RNA/RHINO © PR02 70766 (57 min), © PR04 70766.

Performance: Grab bag Recording: Good

After several solo albums that went over the top in eccentricity, and close on the heels of "Mavericks," a collaboration with fellow dB's founder Peter Holsapple, Chris Stamey is back with a record that seems more conventional. Joined again by Holsapple and friends from NRBQ, the Golden Palominos, and Let's Active, Stamey mixes easy, toetapping rockers (Perfect Time and I Want You) with supercharged guitar instrumentals like the title track.

Stamey says in the promotional material for "Fireworks" that he approached the album "cinematically," and, indeed, he wrote Something Came over Me for a movie about the American South, The Swing. But the album's cinematic strength is also its weakness-too many of the songs seem like background music. They also sound like homages to a number of Sixties pop groups: The Company of Light resembles the Byrds, Two Places at Once recalls Bob Dylan, Perfect Time harks back to the Beatles, and On the Radio (for Ray Davies) naturally calls up the You Really Got Me guitar staccato of the Kinks. Only in the title track and You Don't Miss Your Water, a William Bell tune best remembered for the Gram Parsons rendition (replicated

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THE STYLISTICS: Love Talk. The Stylistics (vocals); instrumental accompaniment. Love Talk; Me – U = Blue; Hang Your Teardrops Up to Dry; I Don't Need This; (Medley) Betcha, by Golly, Wowl You Are Everything/I'm Stone in Love with Youl You Make Me Feel Brand New; and four others. AMHERST ® AMH 94404 (45 min), © AMH 54404.

Performance: Sweet soul music Recording: Very good

Maybe I'm old-fashioned for liking the Stylistics as much as I do, but if so, I'm proud of it. Back in the Seventies, when the trio was among the best of a generation of fine male groups, it was easy to take them for granted. They were known for the exceptional sweetness of their vocal blend, with a high lead tenor lend-

ing a special airiness.

"Love Talk" presents the Stylistics in a winning combination of memorable oldies and new numbers in the same style. The title song, Always on My Mind, and Let Me Show You What Love Is are all so closely modeled on the group's classic hits that they automatically trigger a wave of nostalgia. But the surge of sweet memory is best served by two medleys. One combines their greatest hits—Betcha, by Golly, Wow, You Are Everything, I'm Stone in Love with You, and You Make Me Feel Brand New—and the other melds Goin' Out of My Head with Can't Take My Eyes off You.

If you want to know where the Bee Gees got the inspiration for the popular falsetto singing of their Saturday Night Fever period, just refer back to the

source: the Stylistics.

DONNA SUMMER: Mistaken Identity. Donna Summer (vocals); vocal and instrumental accompaniment. Get Ethnic; Body Talk; Work That Magic; When Love Cried; Heaven's Just a Whisper Away; and seven others. ATLANTIC © 82285-2 (55 min), © 82285-4.

Performance: In top form Recording: Very good

Donna Summer has been so closely identified with dance music that it's easy to forget what a broad-based singer she is. She can massage the emotions as well as the body, and she does both in this new album. Dance tunes such as Get Ethnic, Fred Astaire, and the title track are immediately captivating, and rather than settling into a single groove, she mixes up the rhythms-moving, for example, into an undulating beat in When Love Cries, one of the best numbers here. The ballads are no less effective, especially Heaven's Just a Whisper Away, which features Summer in the sort of mellow mood that made her recording of Last Dance an all-time favorite. She even offers the inspirational Let There Be Peace, with superb backing by the McClendon Choir.

Summer wrote or co-wrote ten of the twelve numbers here, and she and producer/arranger Keith Diamond know how to showcase her talents. The results fit her voice and style like a stylish body stocking.

P.G.

JAMES TAYLOR: New Moon Shine (see Best of the Month, page 71)

TIMBUK3: Big Shot in the Dark. Timbuk3 (vocals and instrumentals); other musicians. God Made an Angel; Sunshine; Two Medicines; The Border Crossing; Big Shot in the Dark; Mudflap Girl; and six others. I.R.S. (a) X2-13094 (47 min), (a) X4-13094.

Performance: Woolly Recording: Good

Timbuk3 may or may not think of themselves as politically correct. They do, however, have the forthright courage of their convictions, enough to snipe on the title track at a neo-con who has changed his liberal ways in middle age: "You had it right the first time." They take an antiauthoritarian stance against guards at The Border Crossing for "paranoia" about odd-looking travelers. And in the new-agey Two Medicines they suggest laughter and tears as the cures for many ailments. Balancing out these seriously held cultural attitudes is a good deal of whimsy. In The Little Things they confess that they "just love the name" of Delaware, and in Wake Up Little Darlin' they make gentle observations about small children and bad dreams

On the whole, Timbuk3 tackles the kinds of stuff that must concern them in their everyday, postcollegiate lives, setting their fretfulness or amusement to tunes that are snappy but understated. An electric guitar might noodle a counterpoint here or growl slightly there, or even make a brisk run once in a while,

Trip Shakespeare: pop quiz



but the music never gets riled up. "Big Shot in the Dark" offers the firmly held vision of gentlefolk who wouldn't think of making a rude noise, no matter what the provocation.

R.G.

TRIP SHAKESPEARE: Lulu. Matt and Dan Wilson (vocals, guitar, piano); John Munson (vocals, bass); Elaine Harris (drums, percussion). "none of the regular rules were true."; Lulu; Bachelorette; Your Mouth; Will You Be Found; and nine others. A&M © 75021 5372-2 (58 min), © 75021 5372-4.

Performance: Cute Recording: Okay

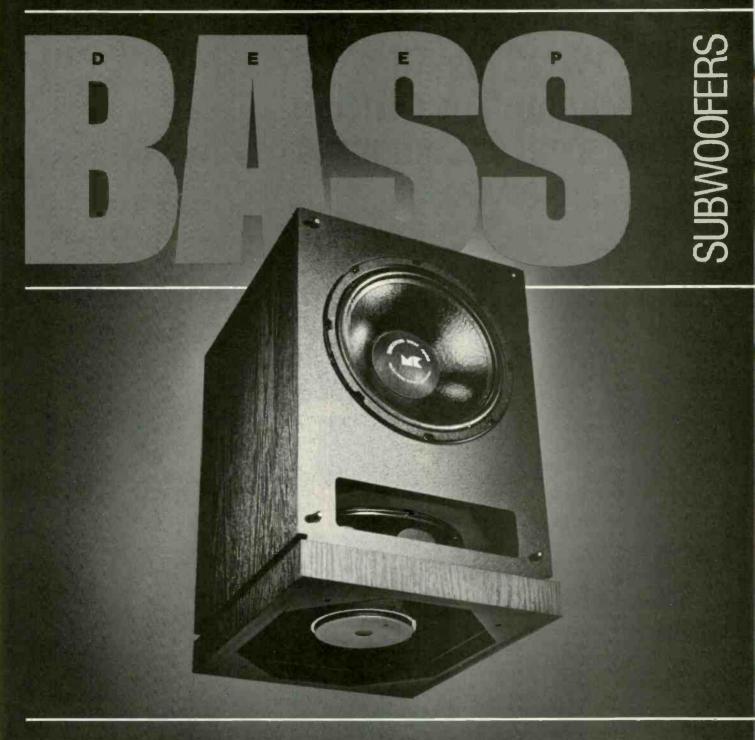
The really, really smart ones never want to make it simple. No, they want very much to make pop music in their own very special ways, toying with the music and the words enough so that we'll understand just how smart they are. You can tell how much Trip Shakespeare likes the poppiness of pop when you hear the perky, retro bounciness of their making-out-in-the-car song, Bonneville. But these folks are easily bored by convention, so they go against the grain by concocting obtuse lyrics-"Your mouth is my apartment in the evening"—and tossing in odd, barely related intros, bridges, codas, and outros. As much as I admire the imagination behind all this effort—especially in Bachelorette, where the tune's sweetness meets the self-effacing lyrics head on-I wish Trip Shakespeare had used a little more selfrestraint.

Collection

TOM'S ALBUM. DNA Featuring Suzanne Vega: Rusted Pipe. Suzanne Vega: Tom's Diner. Peter Behrens: Dep De Do Dep. Nikki D: Dadd's Little Girl. Beth Watson: Waiting at the Border. Michigan and Smiley: Tom's Diner. And seven others. A&M @ 75021 5363-2 (38 min), @ 75021 5363-4.

Performance: Imaginative Recording: Good

Last year a song by Suzanne Vega, Tom's Diner, was given a full "house' remodeling job by a British dance-music duo, DNA. It became an unlikely hit, inspiring a spate of unconventional versions and interpretations (shades of the mid-Eighties Roxanne mania). "Tom's Album" collects a dozen of them and adds DNA's latest treatment of a Vega tune, Rusted Pipe. The twelve tracks all hark back to the folk-protest era, when songs were a way of singing the news or signifying points of view. They cross lines of gender, language, politics, and music. One is about an unwanted pregnancy, and another disses the war in the Persian Gulf. There are versions in French and German. The song gets reggaefied, scatted, sung a cappella, and turned into a homage to the TV show I Dream of Jeannie. Michael Stipe runs





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through a sloppy comic improv of *Tom's Diner* during an R.E.M. show (the band appears here under the pseudonym Bingo Hand Job).

It's pretty amazing how much mileage a multitude of artists got out of smokyvoiced Suzanne Vega's little song about a Manhattan diner. In its unpretentious way, "Tom's Album" reinforces the notion that music is still very much a common currency worldwide.

P.P.

Jazz

JIM HALL AND FRIENDS: Volume 2, Live at Town Hall. Jim Hall (guitar); Steve LaSpina (bass); Terry Clarke (drums); other musicians. Hide and Seek; How Deep Is the Ocean; Sancticity; My Funny Valentine; Careful. MUSIC-MASTERS © 01612-65066-2 (45 min), © 01612-65066-4.

Performance: Fine Recording: Excellent remote

Guitarist Jim Hall has enhanced performances by some of the finest jazz musicians of this and past eras. He has made enduring records with pianist Bill Evans ("Interplay") and the Chico Hamilton Quintet. He helped Sonny Rollins get over "The Bridge," and few 1957 jazz fans weren't moved by his mesmerizing locomotion in The Train and the River, a Jimmy Giuffre Trio number that graced an Atlantic album, the film documentary "Jazz on a Summer's Day," and television's most glorious tribute to jazz, "The Sound of Jazz." In the past thirty years, Hall has also made noteworthy appearances as a leader, and that beat goes on into the Nineties. "Jim Hall and Friends, Volume 2" was recorded at New York City's Town Hall, which has been the scene of great jazz concerts since the Forties. The concert, part of the 1990 JVC Festival, features the guitarist in quartet and trio surroundings and with a nine-piece group that includes vibist Gary Burton and fellow guitarists Mick Goodrick, John Abercrombie, Peter Bernstein, and John Scofield. There is also a delicate, skillfully interwoven Goodrick-Abercrombie duet in My Funny Valentine. It all adds up to 45 minutes of smooth, timeless jazz that is gentle to the ear while rich in substance. This album is a must for guitar fans, and you might also wish to check out Volume 1, which has Hall in the impressive company of Burton, Ron Carter, Bob Brookmeyer, and Gerry Mulligan.

RÉNEE MANNING: As Is. Rénee Manning (vocals); Ron Tooley (trumpet); Earl McIntyre (bass trombone); Ralph Lalama, Dick Oatts (reeds, flute); Billy Butler (guitar); Rufus Reid (bass); Kenny Washington (drums); other musicians. I's on You; Tell Me You'll Wait for Me; Deed I Do; Joe Louis Blues; Crazy About You; I Stand Alone; Bye Bye Black-

bird; and six others. KEN © 013 (58 min). Ken Music, 301 W. 57th St., Suite 26A, New York, NY 10019.

Performance: First-rate Recording: Excellent

If you have heard Rénce Manning sing with the Mel Lewis orchestra-which she did for some five years—or with any number of other jazz groups in the New York City area, this is probably an album you have been waiting for. "As Is" features Manning with nine superb musicians, performing a wide-ranging program of both original and familiar songs. Her delivery may not be anywhere near as distinct as Billie's, Sarah's, Dinah's, or Ella's, but she compensates for that with a rich, commanding voice over which she has complete control. In an age when volume has become the yardstick by which even the formerly discriminating Apollo Theatre audiences measure an acceptable performance, it is a pleasure to hear any singer who can carry a tune. But Manning goes far beyond that. Her album is a lesson in good taste, from her performance to the choice of material, band, and arranger. The charts are by trombonist Earl McIntyre, who also contributes two excellent songs, Joe Louis Blues and a moving soliloguy called I Stand Alone. The musicians include pianist Ronnie Matthews, saxophonist Dick Oatts, and guitarist Billy Butler, all of whom solo expertly, and the backbone of the rhythm section is provided by bassist Rufus Reid and drummer Kenny Washington. With a supporting cast like that, the singer had better be good, and Manning is. I would be remiss if I didn't mention that Manning also composed three of the songs-It's on You, May's Whispers, and As Isand they warrant the attention of other vocalists.

DAVID SANBORN: Another Hand. David Sanborn (alto saxophone); Bill Frisell, Marc Ribot, Al Anderson, Dave Tronzo (guitar); Charlie Haden (bass); Marcus Miller (bass guitar); Leon Pendarvis (organ); Mulgrew Miller (piano); Jack DeJohnette (drums); Don Alias (percussion); other musicians. First Song; Monica Jane; Come to Me, Nina; Hobbies; Weird from One Step Beyond; and five others. ELEKTRA MUSICIAN © 61088-2 (58 min), © 61088-4.

Performance: Uneven Recording: Satisfactory

After several years of commercial success and public acclaim as a pop-jazz fusion star, alto saxophonist David Sanborn is apparently intent on establishing his reputation as a legitimate jazz artist. The release of this new album coincided with a series of public appearances during which he performed with artists whose jazz credentials are impeccable. The problem is, the album touches on so many kinds of expression that it suffers from the lack of a cohesive center.

Sanborn's strength is in the gritty, full-

bodied, and fluid sound he is able to project through his horn. He is, more than most jazz soloists, dependent on his back-up musicians to flesh out the basic ideas he puts forth. When he joins forces here with the idiosyncratic composerguitarist Bill Frisell, his own identity seems to wither away, and his solos seem thin and unfocused when he performs with bassist Charlie Haden.

Sanborn is at his best in "Another Hand" when he avoids experimentation and settles into a highly melodic and deliciously rhapsodic groove, as in Marcus Miller's Dukes & Counts, by far the best selection. With Mulgrew Miller on piano, Jack DeJohnette on drums, and Marcus Miller on bass guitar, Sanborn delves into the luscious center of the composition and lets its beauty flow freely. He should avoid pseudo-intellectual efforts and do what he does best, which is to play as prettily as he can, straight from his heart.

NORMAN SIMMONS: 13th Moon. Norman Simmons (piano); Jimmy Owens (trumpet, flugelhorn); Frank Wess (flute, tenor saxophone); David Samuels (vibraphone); Lisle Atkinson (bass); Roberta Davis (vocals); other musicians. 13th Moon; Bag's Groove; So Sad; Willow Weep for Me; and four others. MILJAC © MJP-1003 (48 min). Milijac Publishing Co., 315 Seventh Ave., New York, NY 10001.

Performance: Good stuff Recording: Fine sound

You may not be familiar with the name, but if you listen to jazz with any regularity, there is only a slight chance that you haven't heard Norman Simmons play. His piano has provided a foundation for some of the greatest horn players in modern jazz, and he has worked as accompanist to a wide variety of vocalists, ranging from Carmen McRae and Anita O'Day to Joe Williams and Betty Carter. For many years I expected to see him break away and give us the full measure of his talent. He did emerge in a 1977 Spotlite album called "Ramira the Dancer," as well as in three mid-Eighties albums on his own small Milijac label. Now the Milijac records are out on CD, and I urge all devotees of good, unpretentious jazz to lend them an ear or two.

13th Moon," the third album, is simply superb. The supporting cast is stellar, with trumpeter Jimmy Owens and saxophonist Frank Wess up front, Lisle Atkinson on bass, and Al Harewood or Gerryck King at the drums. There are other participants, including Latin percussionists and an appealing vocalist, Roberta Davis, but the centerpiece is the leader's lyrical piano. Simmons is not a flashy pianist, but he will dazzle you with his gentle touch and invention. Perhaps bassist Red Mitchell put it best: "When Norman says what he has to say it's real honest jazz, like something between a seance and a church service." Amen.



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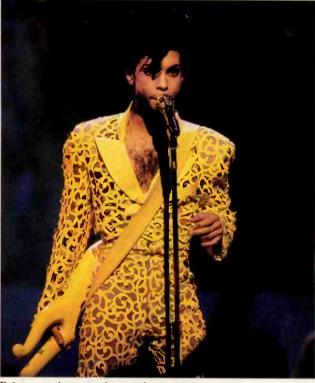
HE tenor Jerry Hadley is much in demand these days, both onstage and for recordings. Last fall alone he was featured in Leonard Bernstein's Candide on Deutsche Grammophon, Kismet on Sony, and Mozart's The Magic Flute on Telarc and Il Re Pastore on Philips. Hadley also portrays Paul McCartney's alter ego in the recent EMI Classics recording of McCartney's Liverpool Oratorio for soloists, chorus, and orchestra. Based on McCartney's youth in postwar Britain, the 90-minute work was arranged by Carl Davis, who conducted the world pre-



McCartney and Hadley

mière—in Liverpool—as well as the subsequent London performance where the recording was made. Other soloists are Kiri Te Kanawa, Sally Burgess, and Willard White.

N the liner notes for his new Paisley Park/Warner Bros. album, "Diamonds and Pearls," Prince proclaims, "A family is born and God bless us cuz we fonky!" The "family" is his new band, the New Power Generation, a group of eight musicians and performers making their recording debut. The album marks the superstar's first non-film-related record since 1988, and it's especially notable for his return to a full-band sound reminiscent of his "Purple Rain'



Prince: no drum machines, please

days with the Revolution. According to Prince it was a matter of timing: "Everyone else went out and got drum machines and computers, so I threw mine away.

OCK-AND-ROLL pioneer Fats Domino garnered a remarkable sixty-six chart hits between 1949 and 1963. Now



Domino: collected

EMI has collected all of them (and more) in "They Call Me the Fat Man: Antoine 'Fats' Domino, the Legendary Imperial Recordings." The four-CD, one-hundred-track set includes such classics as I'm Walkin', Blueberry Hill, and Ain't That a Shame, as well as previously unreleased performances and first-time stereo appearances of otherwise familiar songs. An accompanying booklet contains detailed session notes, a discography, rare photos, and reminiscences from the Fat Man himself.

mitri Hvorostovsky, the young Siberian-born baritone, makes his first appearance in a complete opera recording as Alfio in Philips's new Cavalleria Rusticana, conducted by Semyon Bychkov and co-starring Jessye Norman and Giuseppe Giacomini. Future opera recordings for the twenty-nine-year-old include the title role in Tchai-

kovsky's Eugene Onegin and \$ Rodrigo in Verdi's Don Carlo (also with Norman). Hvorostovsky's big break in the West came in 1989 when he won the BBC's Cardiff Singer of the World Competition. Since then Philips has released two solo albums, the first a selection of arias by Tchaikovsky and Verdi, the second a recital titled "Russian Romances" (appropriate for a man named one of "the fifty most beautiful people in the world" by People magazine). His next solo album, due out in the spring, will be a collection of Russian folk songs.

O coincide with the fortieth anniversary of one of the most popular television series of all time, Sony Music Video has released "Babalu Music! I Love Lucy's Greatest Hits" on videocassette and laserdisc. Produced by "Weird" Al Yankovic, the video features live performances by Desi Arnaz (a.k.a. Ricky Riccardo) and his orchestra at the Tropicana, as well as other musical moments from the show. Columbia Records simultaneously released a CD/cassette version that includes eight tracks rare performances from Ar-



Hvorostovsky: heart-throb

naz's 1951 radio show, "Your Tropical Trip." On the other hand, the video boasts five cuts absent from the audio version. The highlight of both, however, is undoubtedly the title track-Ricky Riccardo's signature song, Babalu-presented in a remixed and ex-

M·A·K·E·R·S



Midori at Carnegie Hall

tended medley form complete with sampled vocals.

idori's Carnegie Hall debut in October 1990, at the age of eighteen, offered a clear demonstration of the young violinist's musicianship, technique, and passion for Beethoven, Chopin, and other composers. Sony Classical's live audio recording of the concert, released on CD and cassette, has been on the Billboard Classical chart for months (peaking at No. 2). This month Sony will release the video recording, on laser-

disc and videotape, which includes a Mozart sonata that's not in the audio program.

IVE years after his last solo album, Canadian rocker Bryan Adams has returned with "Waking Up the Neighbors" on A&M. The album includes the international hit (Everything I Do) I Do It for You from the soundtrack of the film Robin Hood: Prince of Thieves. The song, cowritten by Adams and producer Mutt Lange, has been the biggestselling single since 1985's We Are the World. Adams and his band begin touring Australia and Japan this month, returning for North American performances in March.

AST year marked the twenty-fifth anniversary of the Monkees, and to honor the Pre-Fab Four, Rhino Records is presenting "The Monkees: Listen to the Band," a four-CD/four-cassette boxed set spanning the group's entire career. All of their biggest hit singles are included, as well as a dozen or so previously unreleased tracks, alternate mixes, and outtakes. An accompanying illustrated booklet features interviews with the band members, rare photos, and complete session credits (musicians who played on Monkees sessions include Buddy Miles, Ry Cooder, Neil Young, and Carole King).

Meanwhile, Monkee Micky Dolenz has been signed by Kid Rhino, the label's new children's division. His first release is "Micky Dolenz Puts You to Sleep," a collection of bum ("Nothing But a Burning Light") in the fall, is also in the process of reissuing Cockburn's entire back catalog on CD—nineteen albums, the earliest dating from 1970. Warner/Reprise Video is releasing some classic TV perleasing some classic TV per-



The Pre-Fab Four Go CD

pop tunes from the Sixties and Seventies reinterpreted as modern-day lullabies. Among the songs in the set are the Beatles' Fool on the Hill and Blackbird, Neil Young's Sugar Mountain, John Lennon's Beautiful Boy, and (of course) the Monkees' Pillow Time.

HE violinist and conductor Vladimir Spivakov and his Moscow Virtuosi have won fans in the West with their spirited recordings of Baroque and Classical music, including a well-received Four Seasons last year. They haven't overlooked Russian composers either, recording CD's of works by Shostakovich, Stravinsky, and Prokofiev for RCA Red Seal. Now Spivakov demonstrates his own virtuosity as a soloist in a new RCA recording of violin showpieces called "It Ain't Necessarily So," released on both CD and cassette. It ain't all Gershwin, though. Other composers include Ravel, Bartók. Debussy, and the Russians mentioned above.

RACENOTES. Columbia Records, which released Canadian singer/songwriter Bruce Cockburn's latest alformances of pop music, including "The Judy Garland Christmas Show" (from 1963) and "The Incomparable Nat 'King' Cole" (culled from various episodes of his shortlived Fifties series)... Teldec issued its first complete



Spivakov: Moscow virtuoso

set of the Beethoven symphonies in September in a specially priced five-CD set conducted by Nikolaus Harnoncourt. Although widely known for his recordings using period instruments, the conductor chose to record the Beethoven project with modern instruments, claiming that "period instruments are not my first priority... the music itself is more important than anything else."

Canadian rocker Bryan Adams



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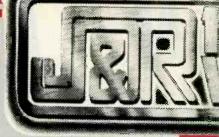
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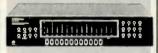


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Classical Music

Recent discs and cassettes reviewed by Robert Ackart, Richard Freed, David Hall, George Jellinek, Eric Salzman, and David Patrick Stearns

BACH (arr. Respighi): Passacaglia and Fugue in C Minor; Three Chorale Preludes; Sonata in E Minor for Violin and Continuo; Prelude and Fugue in D Major. BACH (arr. Elgar): Fantasia and Fugue in C. Minor. Ilkka Talvi (violin); Seattle Symphony, Gerard Schwarz cond. DELos ® DE 3098 (57 min).

> Performance: Solid Recording: Good

Thanks to Walt Disney's Fantasia, heavy-breathing, heaven-storming symphonic Bach is forever associated with Leopold Stokowski. But back in the Twenties and Thirties, the master orchestrator of Johann Sebastian was-of all people—Ottorino Respighi. Although you'd barely suspect it from The Pines of Rome, the biggest influences on Respighi's own music were Gregorian chant and Bach. And his arrangements of Bach kept his name before the public for many years, until the fashion changed.

The greatest transcriber and arranger of all was, of course, old Bach himself. And no one has been more arranged than Bach. Liszt and Busoni did it. So did Schoenberg, Berg, and Stravinsky. We've had Play Bach, Switched-On Bach, the Swingle Singers' Bach, rock Bach, and so on, ad infinitum. Why not have another listen to Respighi's Bach? Arrangements are quietly slipping back into favor, and, in the long history of updating Bach, Respighi's orchestrations do not emerge badly at all. His version of the Passacaglia and Fugue is stronger and more powerful than Stokowski's Toccata and Fugue in D Minor, and the Three Chorale Preludes are stunning. The Sonata in E Minor is an early, lesser arrangement for violin and strings that he probably wrote for himself to play (he was originally a violinist). The D Major Prelude and Fugue is, surprisingly, a witty and playful tour de force.

Edward Elgar was also reputed to be a great lover of the music of J. S. Bach, but

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his arrangement of the C Minor Fantasia and Fugue is heavyhanded and even grotesque. Unlike Respighi, he violates the letter without remaining true to the

This unusual album of "Symphonic Bach" comes from an unexpected place. The Seattle Symphony under Gerard Schwarz is perhaps not the orchestra to reel these arrangements off with easy virtuosity, but the playing is solid, and the recording goes a long way toward recreating past glories.

BEETHOVEN: Symphony No. 3, in E-flat Major, Op. 55 ("Eroica"); Leonore Overture No. 3, Op. 72a. NDR Symphony Orchestra, Günter Wand cond. RCA VICTOR @ 60755-2-RC (65 min).

Performance: Outstanding Recording: Excellent

It would have been reasonable to assume that this release contains the same "Eroica" as Günter Wand's six-disc set of all the Beethoven symphonies; that performance, after all, was recorded as recently as 1985. But this is a newer and altogether more vital one, recorded live at the end of 1989. The two performances follow the same general outline (the timings for the respective movements vary only a little), but the new one has a heightened inner tension and drive.

Wand's orchestra plays with even greater technical assurance here than in the earlier recording. One senses the committed involvement in the wind phrasing in the opening of the final movement, in the string playing and the solo horn in the first movement's development, in the fire and depth of the Funeral March," in the alertness of the horns in the scherzo's trio. The recording itself is crisper and brighter than the earlier one, too, with greater immediacy and impact, its live setting betrayed only by minimal (and remote) audience noise betwen the last two movements. What it all comes down to is an "Eroica" to match the most memorable versions of the past, with the benefit of the most realistic contemporary sound. Wand's Leonore Overture No. 3 is no mere makeweight, either, but is ablaze with the same intensity and dramatic sweep that enliven his new "Eroica."

BORODIN: Symphony No. 1, in E-flat Major; Symphony No. 2, in B Minor. Rotterdam Philharmonic Orchestra, Valery Gergiev cond. PHILIPS @ 422 996-2 (66 min).

Performance: Mostly excellent Recording: A-1

For all its echoes of the Schumann "Spring" Symphony in the finale and a touch of Berlioz's "Queen Mab" in the scherzo, the Borodin First Symphony is

a charmer, especially in this alertly played and beautifully recorded performance under the baton of Valery Gergiev, who has been associated with the Kirov Ballet. The Second Symphony, completed almost a decade later, is redolent of the operatic epic Prince Igor, on which Borodin was also working at the time. The heroic cadences of the opening movement are splendidly set forth here, and the prestissimo scherzo is neatly turned by the Rotterdam players. The finale is a blaze of color and rhythm, but the crown of the symphony, its slow movement, disappoints by virtue of a



Gerard Schwarz: symphonic Bach

tempo more adagio in character than the specified andante. Nonetheless, the disc is definitely a winner in terms of sonics and orchestral execution.

BRAHMS: Symphony No. 1, in C Minor, Op. 68; Variations on a Theme by Haydn, Op. 56a. London Classical Players, Roger Norrington cond. EMI/ANGEL RE-FLEXE © 54286-2 (61 min), © 54286-4.

Performance: Unforced Recording: Excellent

With the release of this first recording of a Brahms symphony played on historic instruments, Roger Norrington foresees the end of the forward push of the earlymusic movement; later performance practices are documented in piano rolls and recordings. But just because Norrington is treading in recent territory doesn't mean there's less damage to undo than in, say, Mozart or Beethoven. Norrington takes a very Classical approach toward Brahms, which means the tempos are faster and the textures





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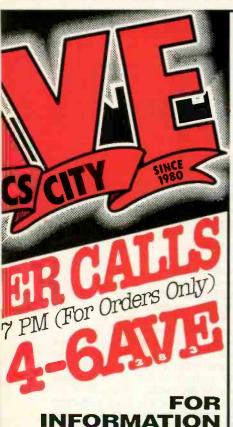
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leaner than we're used to. The result is a more "radical" rethinking than in his previous recordings of early Romantic works by Schumann and Mendelssohn.

The common idea that a slower performance is more emotional than a fast one is completely contradicted by Norrington's treatment here of the opening bars, which are as relentless and harrowing as they've ever been even at the faster than usual tempo. Norrington refuses to fuss over the music and pack it with inflections the way many conductors do, achieving more immediacy by choosing a single tempo for an entire movement and letting the music work its own magic. The effect is refreshingly natural and lacking in portentousness.

While many historic-instrument recordings lose their novelty after a few listenings, this one grew on me. The more "woody" sound of the woodwinds and the less glossy sound of the gut-string violins are rather addictive, especially in the "Haydn" Variations. And with so few conductor's fingerprints on the performances, repeated listening draws you more into the music. D.P.S.

BRUCKNER: Symphony No. 9 (see Best of the Month, page 72)

HANDEL: Water Music. Orchestra of St. Luke's, Charles Mackerras cond. TEL-ARC @ CD-80279 (54 min).

Performance: Brisk Recording: Brilliant

If George the First's royal barge had moved upriver at these tempos, it could have won the Henley Regatta. The CD includes the three complete published suites, plus two lesser-known variant movements from a manuscript in the composer's hand, a 50-minute hour at a brisk trot. The playing and recording are brilliant, the music breathless. If you can stand the pace, you will enjoy it.

MARTINU: Symphony No. 3; Symphony No. 4. Scottish National Orchestra, Bryden Thomson cond. CHANDOS @ CHAN 8917 (60 min).

Performance: Often magical Recording: Demonstration quality

Though there's no shortage of Martinu symphony recordings, the late Bryden Thomson's set of the six symphonies on three CD's may establish a lasting standard. That's particularly apparent in this installment, which pairs two of Martinu's most problematical compositions, both written during his World War II exile. The Third Symphony (1944) is a somewhat terse, three-movement work created in reaction to reports of Nazi atrocities in Martinu's homeland, Czechoslovakia, and the more sprawling Fourth Symphony (1945) is his highly extroverted reaction to the Allied victory. Both can be difficult to hold together, but Thomson was alert to the scores on so many levels that the performances unfold with a feeling of inevitability. Despite somewhat relaxed tempos, there's a strong underlying pulse. But Thomson's greatest strength was his radiant sense of sonic color, which is far more than just a surface embellishment in these works: Many of the magical orchestral effects reveal the very core of Martinu's music. They also point up the cross references between his symphonies, which are so numerous among Nos. 1 through 5 that they often seem like continuations of each other.

In short, these symphonies come alive here in all of their wildly mixed emotional states, eclectic references, and ironies piled upon ironies. You're not always sure what you're feeling while listening to them, but with such attractive recordings, you're willing to return to them again and again.

MOZART: Clarinet Concerto in A Major (K. 622). Richard Stoltzman (clarinet); English Chamber Orchestra, Stoltzman cond. Clarinet Quintet in A Major (K. 581). Richard Stoltzman (clarinet); Tokyo String Quartet. RCA VICTOR © 60723-2-RC (64 min).

> Performance: Lovely Recording: Handsome

Richard Stoltzman's earlier recording of the Clarinet Concerto with the English Chamber Orchestra under Alexander Schneider is now on a midprice RCA CD. This new performance is essentially a repetition-marginally less crisp in the orchestra, but marginally smoother in the solo playing-and it benefits from conspicuously brighter and richer sound. It benefits further from a far more appropriate coupling than the earlier one, Mozart's Clarinet Quintet instead of a gratuitous clarinet adaptation of his Bassoon Concerto. Stoltzman does not appear to have recorded the quintet before, and this is, not at all surprisingly, a lovely account of the work. My own loyalty to the classic recording of the concerto by Gervase de Peyer with Peter Maag conducting on London remains undimmed, even if the sound quality does not, and Antony Pay, with Christopher Hogwood conducting, scores a point or two in his version on L'Oiseau-Lyre by playing a basset clarinet, the instrument for which Mozart composed the concerto. In the quintet, there's De Peyer again, with the Melos Ensemble (and with a glorious Brahms quintet filling out the midprice Angel disc), and there's an especially fresh recent version by Eduard Brunner and the Hagen Quartet (with the Weber quintet) on Deutsche Grammophon. But for the Mozart Clarinet Concerto and Clarinet Quintet on a single disc, I don't think there is a match for the new Stoltzman recording.

MOZART: Concertos for Two Pianos; Fantasia in F Minor; Andante and Variations in G Major (see Best of the Month, page 73)

MOZART: Opera Arias (see Collections— Carol Vaness)

POULENC: Humoresque; Nocturnes Nos. 1-8; Suite for Piano; Theme and Variations; Improvisations Nos. 4, 5, 9, 10, 11, and 14; Three Intermezzos; Villageoises; Presto in B-flat Major. Pascal Rogé (piano). LONDON @ 425 862-2 (63 min).

Performance: Elegant but hurried Recording: Excellent

Pascal Rogé takes a focused, highly spementality and emphasizes its humor, brilliance, rowdiness, and swift of hand with cific approach to Poulenc's piano music. brilliance, rowdiness, and swift sleights of hand with playing that is colorful and

Richard Stoltzman and the Tokyo Quartet



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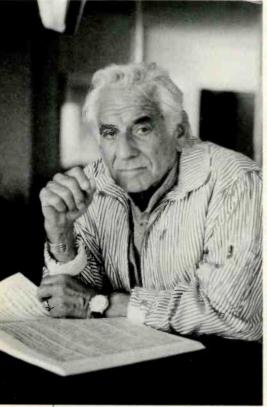
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The Symphony of a Thousand



EONARD BERNSTEIN'S Mahler cycle for Deutsche Grammophon has been completed posthumously, with superb mid-Seventies recordings from broadcast sources. The Symphony No. 8 derives from a 1975 Austrian Radio/Television broadcast from Salzburg's Grosses Festspielhaus, and the Symphony No. 10 Adagio, the only part Mahler himself completed, is from the soundtrack of a 1974 Unitel film for television recorded in Vienna's Kontender of the sound of the



Leonard Bernstein

zerthaus. The performances add up to a stunning, even shattering musical experience—Bernstein's percussive footstamping and all.

In the whole of Mahler's symphonic output, it is the Eighth—nicknamed "Symphony of a Thousand"—that best realizes his dictum, "A symphony should be like the world." The choral forces, as the popular subtitle implies, are enormous, and the eight solo vocal parts demand singers of the highest musical ability. The choruses and the orchestra, augmented by organ, harmonium, mandolin, and bells, generate overwhelmingly massive sonority at climactic moments, but there are moments, too, of a crystalline, chambermusic texture.

The first part is a setting of the medieval Latin hymn, Veni Creator Spiritus. Cast essentially in sonata pattern, it is a polyphonic tour de force culminating in a brilliant double fugue. The nearly hourlong second part sets the entire visionary final scene of Goethe's Faust, Part II. Here Mahler's music harks back to the nature mysticism of the Third Symphony and looks forward to the transparent contrapuntal writing of the last compositions—the Symphony No. 9, Das Lied von der Erde, and the unfinished Symphony No. 10.

Bernstein's Salzburg performance boasts a splendid assembly of soloists who come to the fore most spectacularly in the Faust scene. Hermann Prey is a superbly passionate Pater Ecstaticus, and José van Dam is no less effective in the evocation of elemental earth forces by Pater Profundus. The demands made on the tenor soloist, as Doctor Marianus, constitute cruel and unusual punishment. Kenneth Riegel shows the strain at times in his upper register, but not disastrously so, and he handles himself creditably throughout. The women are excellent, one and all, especially Judith Blegen, who portrays Una Poenitentium/Gretchen with warmth and tenderness. In the so-called minor roles, contralto Agnes Baltsa as Maria Aegyptiaca is particularly impressive.

No praise can be sufficient for the choral singers, who give unstintingly in terms of vital attacks and sustained phrasing in both high-powered and delicate episodes. The Vienna Choir Boys come through gloriously in the Chorus of Blessed Children. The Vienna Philharmonic plays superbly, with tremendous intensity in the strings and trumpet work that can only be described as celestial.

Bernstein was never willing to go along with the conjectural completions of the Tenth by Deryck Cooke and others, and thus he chose to perform only the uncannily beautiful Adagio. His performance here, after a world-weary beginning, bespeaks tenderness and reconciliation. There is no attempt to exaggerate the *Angst* exemplified by the one terrifyingly dissonant episode that precedes the serene conclusion.

Technically, these recordings are of the very first order. I have no idea how much post-mixing has entered into the final result, but the sonic imaging in the Eighth Symphony is magnificent, both in terms of depth illusion and in the "placement" of the choral groupings in the lateral plane. The balance of vocal soloists with the choruses and orchestra is very well carried out on the whole. My only minor beef is the rather undernourished organ sound. Among the notable past recordings, I would rank with this

one only Georg Solti's 1972 version on London, done in the Vienna Sofiensaal with the Chicago Symphony, Viennese choral forces, and a fine team of soloists, and Klaus Tennstedt's 1986 Angel recording with the London Philharmonic and British choristers.

The Robert Shaw version of the Mahler Eighth on Telarc marks the seventyfifth birthday of the Atlanta Symphony's founder and conductor emeritus. Three days of recording at the Woodruff Memorial Arts Center has produced, on a single CD (a technological first), a recorded performance that, if not notable for subtlety or a sense of mystery, does have the vigor and thrust one would expect from its predominantly collegiate choral forces and soloists whose careers blossomed during the late 1980's. I like the darkly colored bass of Kenneth Cox as Pater Profundus and the bright yet warm soprano of Margaret Jane Wray as Una Poenitentium. Deborah Voigt is in splendid voice as the Magna Peccatrix, and so is Delores Ziegler as the Mulier Samaritana. The choral work has the body and precision one associates with Shaw, and the orchestra is on its toes throughout. Telarc's recording captures to the full both the multifarious detail and elemental weight of Mahler's scoring. The imaging seems more closely focused than in the Bernstein, Solti, and Tennstedt recordings, but without in any way seeming cramped. If maximum musical and sonic "bang for the buck" is your major consideration, Telarc certainly has come up with a best buy. David Hall

MAHLER: Symphony No. 8, in E-flat Major; Symphony No. 10, Adagio. Margaret Price, Judith Blegen, Gerti Zeumer (soprano); Trudeliese Schmidt, Agnes Baltsa (contralto); Kenneth Riegel (tenor); Hermann Prey (baritone); José van Dam (bass); Vienna State Opera Choir; Vienna Singverein; Vienna Choir Boys; Rudolf Scholz (organ); Vienna Philharmonic Orchestra, Leonard Bernstein cond. DEUTSCHE GRAMMOPHON ® 435 102-2 two CD's (109 min).

MAHLER: Symphony No. 8, in E-flat Major. Deborah Voigt, Margaret Jane Wray, Heidi Grant (soprano); Delores Ziegler, Marietta Simpson (mezzo-soprano); Michael Sylvester (tenor); William Stone (baritone); Kenneth Cox (bass); Atlanta Boy Choir; Ohio State University Chorale; Ohio State University Symphonic Choir; Master Chorale of Tampa Bay; Members of the University of South Florida Chorus; Atlanta Symphony Chorus and Orchestra, Robert Shaw cond. Telarc © CD-80267 (80 min).

elegant, particularly as recorded here in the flattering acoustic of Paris's Salle Wagram. But while few other Poulenc interpreters etch the pieces with such clean lines, there are many expressive points that Rogé brushes by. In some of the terser, denser pieces, such as the Presto in B-flat, the music sounds like such a clattery mélange of notes, it could be a Debussy prelude that's been put through a trash compactor.

Rogé might be after authenticity: Poulenc himself was reputed to favor a dry tone, as in the recordings by his trusted interpreter, Jacques Février. Poulenc's own recordings of selected improvisations suggest, however, that such severity isn't in order. My first choice remains Paul Crossley's thoughtful, atmospheric performances in his three-CD CBS set of Poulenc's complete piano music. D.P.S.

PROKOFIEV: Romeo and Juliet, Op. 64 (excerpts). Montreal Symphony Orchestra, Charles Dutoit cond. LONDON @ 430 279-2 (75 min).

Performance: Glossy Recording: Spectacular

Romeo and Juliet is most often heard in one of the three familiar concert suites. This well-filled CD of excerpts from Prokofiev's full-length ballet judiciously picks through the score, with its surging lyricism and rich palette of orchestral effects, to present something that follows the progression of the narrative while maintaining many of the ballet's thematic cross references. As a result, it offers the most complete listening experience of the work outside of a recording of the entire ballet. But that's not the only reason why this new recording justifies itself amid so many other fine versions of Romeo and Juliet. The Montreal Symphony's vividly colored playing and the resonant acoustics of its recording venue, St. Eustache Church, have rarely been put to such good use.

Though conductor Charles Dutoit offers nothing particularly revelatory in his tempos or phrasing, he's alert to all of the score's sensual and emotional pleasures while also digging deep into the orchestration to find relevant details that are usually obscured. Like Herbert von Karajan, Dutoit is occasionally guilty of applying excess surface polish, but he has such a strong affinity with Prokofiev's sound world that most of the incidents of orchestral wizardry here have a clear purpose in conveying the ballet's story and characters. In many ways, this recording is an ideal introduction to one of Prokofiev's greatest scores.

SCHUBERT: Symphony No. 9, in C Major (D. 944). Leipzig Gewandhaus Orchestra, Kurt Masur cond. PHILIPS @ 426 269-2 (60 min).

Performance: Glowing Recording: Full-bodied

The Gewandhaus Orchestra introduced Schubert's "Great C Major" Symphony



Salonen: stylish Stravinsky

to the world in 1839 under Felix Mendelssohn, who performed the work with several cuts, as seemed necessary in view of its unusual length. In this bracing performance recorded a hundred and fifty years later, Kurt Masur takes all the repeats, as more and more of his colleagues have been doing in the last few decades. No one today is likely to feel the length is excessive. Masur happily avoids the temptation to monumentalize; he finds the natural pace for every movement and keeps the music moving with a minimum of gear-shifting. The playing itself, both from the orchestra as a whole and in the numerous solo passages for the various wind instruments, fairly glows, and the fine, full-bodied recording makes the most of this quality without neglecting definition. There are other versions-by Szell, Bernstein, Toscanini, Furtwängler-that exhibit still more power, or intensity, or individuality, but the strong combination of musical and technical virtues in this new version must command a place for it among the half-dozen or so most satisfying accounts of this work that are available now.

STRAVINSKY: Pulcinella (1965 revision); Rag-time for Eleven Instruments; Renard the Fox; Octet for Winds (1952 revision). Yvonne Kenny (soprano); John Aler, Nigel Robson (tenor); David Wilson-Johnson (baritone); John Tomlinson (bass); London Sinfonietta, EsaPekka Salonen cond. SONY CLASSICAL SK 45965 (73 min).

> Performance: Super stylish Recording: Vivid

This recording constitutes a miniature history of Stravinsky's evolution from exotic Russian folklorist to Neoclassicist. Renard, written in 1916, between Rite of Spring and Story of a Soldier, is a barnyard fable about a stupid rooster who has to be rescued (twice) from a wilv fox by a cat and a goat. The quirky score is Stravinsky's imagined transformation of remembered Russian folk music hammered out (in Switzerland) on a Hungarian cimbalom imitating the Russian guzla. Rag-time (1918) was inspired by some American sheet music and that self-same cimbalom, now interpreted as an out-of-tune barroom piano. In 1919, Diaghilev commissioned the composer to write a piece based on the old Italian commedia dell'arte and what was then thought to be music of Pergolesi. Pulcinella turned out to be no mere arrangement but a sparkling and creative transformation of the spirit of the eighteenth century. The Wind Octet, stemming from 1922-1923, is full-blown Neoclassicism, the great tradition brought up to date in a stylish and witty manner.

Stylish and witty can also describe these performances under Esa-Pekka Salonen. There is real spirit, humor, and animation in the way this young Finnish conductor and the British musicians bounce off a rhythm, articulate a color, turn out a phrase, and lay down the longer lines. The singers are first-rate, too, although in these early works they are merely leading players in an equal ensemble of voices and instruments; in any case, the fun-and-charm awards go around equally.

TCHAIKOVSKY: Symphony No. 3, in D Major, Op. 29 ("Polish"); 1812 Overture, Op. 49. Chicago Symphony Orchestra, Claudio Abbado cond. SONY CLASSICAL © SK 45939 (59 min), © ST 45939.

Performance: Mostly good Recording: Comfortable

Claudio Abbado now needs only the First Symphony ("Winter Dreams") to complete his Chicago Tchaikovsky cycle. His reading of the balletic Third Symphony—a five-movement affair written just before Swan Lake, its later opus number notwithstanding, is long on lyricism and elegance. Except for the polonaise-style finale, it lacks the snap and panache of Mariss Jansons's glittering Oslo performance on Chandos.

The 1812 Overture is a neat, musically well-shaped reading with well-executed bells and cannon dubbed in, but for the right amalgam of musicality and sonic excitement, I still prefer the versions by Riccardo Muti and the Philadelphia Orchestra on Angel and by Georg Solti and the Chicago Symphony on London. The new Sony recording seems to use a fairly close microphone placement, which

Prokofiev's Pictures From Old Russia

F you like Alexander Nevsky, you'll love Ivan the Terrible!

Ivan the Terrible was the second collaboration between Prokofiev and the great Soviet filmmaker Sergei Eisenstein. Nevsky was a huge success, and Ivan was planned on an even bigger scale as a two-part film. When the Germans invaded—this was in 1941—the Mosfilm studios and the Ivan team were moved from Moscow to Central Asia, and, far from cutting back, they projected a third

Nevsky was a nationalist (and anti-German) saga calculated to stir up patriotic fervor. But if Stalin saw Ivan as a glorification of himself, he was, in the end, disappointed. Part I won a Stalin Prize, but Part II showed up Ivan—and, by implication, Stalin—as a ruthless despot. Eisenstein called it his "suicide note." It was never released in the lifetimes of the principals, and the projected Part III was abandoned, but at least the filmmaker and composer suffered nothing worse than rejection.

Prokofiev's role in both Ivan and Nevsky went far beyond background music or underscoring. Some of the music was, in fact, written first so that film was shot and edited according to the music. There is a lot of vocal music—choruses, songs, even arias—throughout the score

for Ivan; ten of the thirteen numbers in the concert version on the new Chandos recording employ voice, mostly powerful choruses.

After Prokofiev and Stalin died-on the same day!-Abram Stasevich, the conductor of the original soundtrack, made a long and unsuccessful concert version of Ivan with a speaker and extensive stretches of the underscoring. The English Prokofiev scholar Christopher Palmer created the "Concert Scenario" used for the Chandos disc by taking out the narrator and the smaller bits and concentrating, in some cases restoring, the larger numbers. It's still a solid hour of music, but far more concise and dramatic.

Ivan emerges here with its musical power intact. It is, as Palmer points out in his informative notes, a work that is full of Russian folk style and obviously influenced by Mussorgsky (there is even, shades of *Boris*, a scene at the Polish court). Granted. Yet it is also the most Prokofievian of works, fully as powerful and evocative as Nevsky, and, in this form, it works without the film. If anything, it is even more panoramic than its predecessor. These pictures from Old Russia are incredibly three-dimensional. Music's power to transport the listener-intime, in space, and infeeling-has rarely been so well demonstrated. Because of the way music was used and because of the composer's genius, the score transcends the idea of mere underscoring or scene music as few theatrical or film scores ever have.

I am not exactly sure how the Estonian conductor Neeme Järvi managed to recreate such an ultra-Russian work in London with a presumably English cast of singers and instrumentalists (the excellent baritone is Russian, but he has exactly one number). I am not a Russian speaker, but the sense of the work as a true Russian epic and the hammer-blow power and vividness of the expression are quite overwhelming. This edition, performance, and recording put Ivan the Terrible back at the center of Prokofiev's work as one of the major epic creations of the century.

Will some young Russian Prokofiev or John Adams now be inspired to take on Eric Salzman Stalin himself?

PROKOFIEV (ed. Palmer): Ivan the Terrible, Concert Scenario. Linda Finnie (contralto); Nikita Storojev (bass-baritone); Philharmonia Chorus and Orchestra, Neeme Järvi cond. Chandos © CHAN 8977 (59 min).



A scene from Eisenstein's Ivan

works well for the symphony, but the 1812 needs more of a wallop.

WAGNER: Götterdämmerung. Reiner Goldberg (tenor), Siegfried; Hildegard Behrens (soprano), Brünnhilde; Bernd Weikl (baritone), Gunther; Cheryl Studer (soprano), Gutrune; Matti Salminen (bass), Hagen; Ekkehard Wlas-chiha (baritone), Alberich; Hanna Schwarz (mezzo-soprano), Waltraute; others. Metropolitan Opera Chorus and Orchestra, James Levine cond. Deut-SCHE GRAMMOPHON ® 429 385-2 four CD's (270 min).

Performance: Imposing Recording: Likewise

Deutsche Grammophon's massive Ring project with James Levine and the Metropolitan Opera ensemble is nearing completion; only Siegfried remains to be released. The new Götterdämmerung is an achievement to make that ensemble proud, and I mean no slight to the singers when I call the conductor and orchestra its true heroes. We may even excuse the engineers if occasionally, enticed by the outpouring of rich orchestral sound, they allow the singers to be overpowered. Levine's mastery of Wagner's intricate world is fully documented here: His tempos are majestic, even too deliberate at times, but neither control nor cohesion is lacking. On the contrary, scenes follow one another in a giant arch of lustrous sound, with no orchestral detail glossed over. One also senses a strong inspirational force in Levine's conducting that brings out the best in the singers, who are mostly quite good.

The theatrical impact of Hildegard Behrens's powerful and intense Brünnhilde has long been admired, though vocally she cannot match Birgit Nilsson's towering recorded interpretations. And yet, in certain moments, such as her dialogue with Waltraute or her shocked discovery of Siegfried's betrayal, she rises to heights of true inspiration, and her Immolation Scene is thrilling even though her low notes are frequently obscured by the orchestra. Unfortunately, her Brünnhilde is partnered by a Siegfried who operates on a different level: Reiner Goldberg is an earnest and musicianly tenor, but one who is unheroic, unpoetic, and, let's face it, tonally unbeautiful. Fortunately, his firm intona-

tion fends off disaster.

Otherwise, the performance rests on strong vocal foundations, and it gets off to a strong start with an excellent trio of Norns. Matti Salminen's Hagen, the embodiment of evil menace, is not content with a demonic snarl; his massive tones peal forth in a smooth legato in the episode known as Hagen's Watch. Ekkehard Wlaschiha projects a solid, ominous Alberich, and Hanna Schwarz is properly anguished and sympathetic as Waltraute. Aside from a loose vibrato that imperils his sustained tones, Bernd Weikl conveys Gunther's weak and vulnerable character convincingly, though

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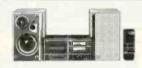
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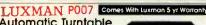
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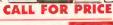


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the engineering tends to submerge his ample tones in orchestral overkill. By contrast, Cheryl Studer's Gutrune is ideal. Finally, three exquisite Rhinemaidens bring this long opera to an ethereal close. This recording is worthy to stand beside Solti's pioneering, gracefully aging, but still magnificent-sounding London set. GJ.

Collections

SANFORD SYLVAN: Beloved That Pilgrimage. Chanler: Eight Epitaphs. Barber: Hermit Songs, Op. 29. Copland: Twelve Poems of Emily Dickinson. Sanford Sylvan (baritone); David Breitman



Soprano Carol Vaness

(piano). ELEKTRA NONESUCH 79259-2 (54 min).

Performance: Sensitive, enjoyable Recording: Very good

Sanford Sylvan is a youngish American baritone, one of the principal singers in Peter Sellars's operatic productions. Recently heard in the title role of John Adams's *The Death of Klinghoffer*, he makes a welcome recital debut here with important song cycles by three distinguished American composers.

The Eight Epitaphs of Theodore Chanler (1902-1961) are likely to be the most generally appealing songs on the disc. Walter de la Mare's lyrics are concise, mordant, and memorable, and they come across irresistibly in Chanler's accessible and highly polished idiom. Sylvan brings to them a sophisticated manner that suggests a deceptive calm concealing turmoil beneath.

Samuel Barber's Hermit Songs use terse and at times thought-provoking observations by anonymous medieval Irish monks as translated by several modern poets. His settings are invariably singable, surrounded by elaborate piano writing that occasionally obscures the vocal line. The Copland cycle is a highly original work that will grow on the listener with repeated hearings. Unlike Barber and Chanler, Copland does not strike me as a natural vocal composer. There is an angularity to his style suggestive of piano techniques. It is not surprising that the piano writing frequently draws the listener's attention away from vocal lines that are rarely appealing in themselves. But Copland successfully found the musical key to Dickinson's complex emotional world, and the muscularity of his writing counteracts the occasional coyness of the poems.

Sylvan appears to be an intelligent and cultivated singer with a light voice that he uses with skill and imagination. The piano contribution of David Breitman is valuable, and the recording—aside from giving undue presence to the piano on occasion—is clear and resonant. G.J.

CAROL VANESS: Mozart Opera Arias. Così Fan Tutte: Come scoglio; Per pietà. La Clemenza di Tito: Deh, se piacer; Parto ma tu ben mio; Non più di fiori. Le Nozze di Figaro: Porgi, Amor; Dove sono. Don Giovanni: Non mir dir. Idomeneo: Idol mio; Zeffiretti; D'Oreste, d'Ajace. Carol Vaness (soprano); Munich Radio Orchestra, Leopold Hager cond. RCA VICTOR © 60562-2-RC (71 min).

Performance: Outstanding Recording: Bright, clear

In recent years, Carol Vaness has increasingly demonstrated her mastery of Mozart's operas—of his roles, his style, his special feeling for melody suffused with drama. And she has the requisite accuracy of pitch and vocal technique to make his music unalienably hers. Judging by the present recording, Vaness can take her place beside such famous Mozarteans as Lisa Della Casa and Elisabeth Schwarzkopf.

If the "Come scoglio" here is a little "straight" for my comic sense, it is nonetheless beautifully sung. The "Per pietà" is a lesson in sustained and seemingly effortless singing. The same may be said of both pieces from Le Nozze di Figaro; the final section of "Dove sono" is especially moving. But no more so than Donna Anna's "Non mi dir," which is performed not only with emotional conviction, but also as Mozart wrote it, including the vocally hazardous ornamentation rarely attempted in operahouse performances.

The lesser-known selections from La Clemenza di Tito and Idomeneo maintain the high level of artistic integrity and dedication that distinguish the recital. The accompaniment by Leopold Hager and the Munich Radio Orchestra, both thoroughly imbued with the Mozart performing tradition, add significantly to this highly recommended recording. R.A.

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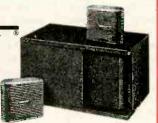
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by William Livingstone



Laserdisc Roundup

ESPITE the poor state of the economy, laserdisc players are reportedly selling well, probably because of the wide variety of program material now available on the discs. The major classical record companies have gotten into the video act and have released some very tempting laserdiscs with their most famous artists.

London's audio recording of the world's three leading tenors in the Baths of Caracalla in Rome in July 1990 is thought to be the best-selling classical album of all time. That performance is now on a London laser-disc, "Carreras Domingo Pavarotti in Concert" with Zubin Mehta conducting, and it is a knockout. I like it much better than the CD. The visual element adds a pleasant sense of being part of the fun at a unique occasion on a summer night in Italy.

The visual element in "Tchaikovsky Gala in Leningrad" (RCA Victor) provides a similar you-are-there sense of being present at a special occasion on a snowy night in Russia. It was a 150th birthday celebration for Tchaikovsky held in 1990 by the Leningrad

Philharmonic. Yuri Temirkanov conducted, and Jessye Norman, Yo-Yo Ma, Itzhak Perlman, and Boris Berezovsky were the soloists in a program of music by Tchaikovsky.

And you are there in Austria when you watch Deutsche Grammophon's "New Year's Concert in Vienna" with Carlos Kleiber conducting the Vienna Philharmonic in a traditional program. The Strauss polkas and waltzes don't get much better than this.

Philips presents Kleiber conducting the Concertgebouw Orchestra in a video recording of Beethoven's Symphonies Nos. 4 and 7 that is a model of restraint with camera work that never detracts from the music.

In much the same way, beautiful photography and the absence of visual gimmickry make it possible to enjoy repeatedly the high quality of the performances on two Sony Classical laserdiscs produced in Japan. They are Georg Solti conducting the Chicago Symphony in Mozart's Symphony No. 35, the "Haffner," and Mahler's Symphony No. 5 and Seiji Ozawa conducting the Boston Symphony in Brahms's First Symphony and Strauss's Also Sprach Zarathustra.

The above are all "live" concerts before well-behaved audiences. Teldec offers several laserdiscs of the pianist/conductor Daniel Barenboim performing music of Mozart and Beethoven in luxurious period rooms in European palaces with no audience present. I especially enjoyed the disc of Beethoven's "Waldstein" and "Appassionata" Sonatas, which is as beautiful to look at as to listen to.

Producers of solo-piano videos tend to move the camera around a bit more than I like. Aside from that I have no complaints about "Murray Perahia in Performance" (Sony Classical), a stunning recital from Aldeburgh, England, that includes music of Beethoven, Rachmaninoff, Schumann, and Liszt.

The darling of the piano world at present is the young Russian Evgeny (or Yevgeny) Kissin. RCA has released his first video, an all-Chopin recital filmed in Yokohama in 1986 when he was only fifteen. Sony has issued a 1987 recital from Tokyo in which he plays Rachmaninoff, Prokofiev, Liszt, Chopin, and Scriabin. In both he seems to be a dour, astonishingly gifted kid, but both will be treasurable souvenirs of a young artist at the start of what promises to be a great career.

To celebrate the one hundredth anniversary of Carnegie Hall, RCA released "A Place of Dreams," a charming documentary about the history of the hall. The combinations of documentary with performance that Christopher Nupen has produced for Teldec are not always to my taste. I was disappointed in his film "The Trout" (featuring Schubert's famous quintet) with Barenboim, Perlman, Mehta, Jacqueline du Pré, and Pinchas Zukerman. There was too much gee-whiz talk and too much horseplay among the performers.

But Nupen's "The Song of the Guitar," a tribute to Andrés Segovia with performances in the Alhambra in Granada, pleased me enormously. I found it touching and beautiful, and the documentary interludes are in separate chapters that can be skipped easily if you wish. Segovia describes Granada as "very close to Paradise," and the disc supports his claim visually."

The most original recent laserdisc is "The Loves of Emma Bardac" (Sony Classical), a French Impressionist docudrama that relates the life of the mistress of Gabriel Fauré and Claude Debussy through a mosaic of music, photographs, re-enactments, and great paintings. This ingenious narrative method enlarges the "envelope" of the video medium and suggests that it still has some surprises for us. The duo-pianists Katia and Marielle Labèque play music of Bizet, Debussy, and Fauré, and the technical brilliance of this video, originally recorded in high-definition TV, will make you glad you bought a laserdisc player.

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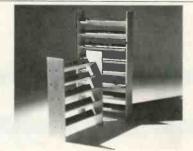
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The Marantz Marvel

OME months ago I called attention to a new product from the almost as new (in this country) Marantz/ Philips group: an audio computer that, working exclusively in the digital domain, is able to perform signal-processing operations unique to the consumer market in variety and competence. By now the processor has visited New York City, where it was much easier to assess than it was at the Summer Consumer Electronics Show in June.

To recapitulate the earlier report, the Marantz AX-1000 is essentially a two-channel device with outputs operating at line level, although additional outputs are present for surroundsound applications such as concerthall simulation. Of the signal-processing options, for which the list is long, a maximum of two can be employed simultaneously, with their dynamic activity shown on two 4-inch color liquid-crystal displays (LCD's), which also bring up menus from which the initial selections are made. The AX-1000 is a stand-alone unit except for a remote controller (whose trackballlike configuration somehow manages to make a fearsomely complex device almost easy to negotiate) and an AKG C-460B microphone to be used in conjunction with the computer's internal noise generators for response analysis of the listening environment.

Typical use of the AX-1000 would probably begin with the establishment

HEHIGHEN

by Ralph Hodges

of a room curve to insure that the system provides flat acoustical response, or any other sort of response the listener wishes. The process is essentially automatic and entails fourteen digital filters per channel. As the user watches passively, after having punched in a few settings for objective parameters, the computer gradually sorts the jumble on the display screen into something gratifyingly close to a straight horizontal line. Although the microprocessors employed are extremely fast, handling data blocks at a rate exceeding 13 million per second. the device takes an appropriate amount of time with these complex adjustments and may be chugging away at the job a full 10 minutes after it has been put to work. Also, although the display is reminiscent of what you'd expect from an analog graphic equalizer, the digital filters are not fixed in their characteristics but are custom-created on the spot for the sorts of correction needed, without hazard to phase integrity. There is a 10-dB upward limit on response adjustment, however; the strict headroom ceiling imposed by digital technology still applies.

Meandering through other AX-1000 functions, we find three-band parametric equalization, similar in use but not in internal operation to analog devices; reverberation injection, to which the above remarks also apply; a "Digital Movie Surround" function, which decodes Dolby Surround soundtracks; a stereo-separation control, something not seen in audio products for some time, that goes beyond the expected by being able to increase separation above what is in the recording; and another anachronism, a digital record-scratch filter, which works infinitely better than any other such device I've heard.

There is also a headphone-imaging function that attempts to banish the localization anomalies usually experienced with headphones, getting the sound image out in front. It can be set for optimum results with six headphone models, three of which are from Stax, to give you an idea of the level of quality and price being assumed. And there is a dynamic-range expander/ compressor that appears to have a unique degree of adjustability, even to the point of permitting selection of response and release times. Finally (almost), the display also operates as a twenty-seven-band real-time analyzer when it's not otherwise occupied.

Considering all the fun to be had with the AX-1000's analysis facilities and signal generators, you may wonder why you'd need music to enjoy it. Well, music will be required for full appreciation of the concert-hall simulations. Eight famous halls are encapsulated in the computer's read-only memory (ROM), some of which don't even sound like the AX-1000's programs any more because of acoustical renovation. An example is London's Royal Albert Hall, a huge space whose expansive dome created an echo that. in some seats, was approximately 9 dB louder than the direct sound. I never heard the hall in this condition. My first visit coincided with acoustical treatment that tamed the echo quite well. Listening to the AX-1000, however, I could easily believe I was back in the old, untreated hall, and the experience was miserable. (David Birch-Jones, Marantz's inimitable marketing manager, suspects that the inclusion of the old Royal Albert Hall was deliberate. Bad or good, real is real, and Marantz intends to be in the business of realism.) A presentation of Boston Symphony Hall was excellent, however, easily the best sound I've heard from any of the hall synthesizers available. I suspect this result was due to the great number of reflective iterations of which the AX-1000 is capable, and its fine control of them. Based on a 32-bit architecture, with 24-bit resolution and enormous speed, it can be expected to create illusions that defy simpler mechanisms.

I don't really expect the AX-1000 to be encountered by very many audiophiles in their local salons, but I could be wrong. This is a product that belongs on a trolley, to be wheeled between demo room and demo room in a well-furbished audio emporium. Its internal memories will store a goodly number of equalization programs applying to each room, and its presence during demonstrations will certainly fix the Marantz name in the customer's mind. Perhaps that is what Marantz has been aiming at from the beginning.

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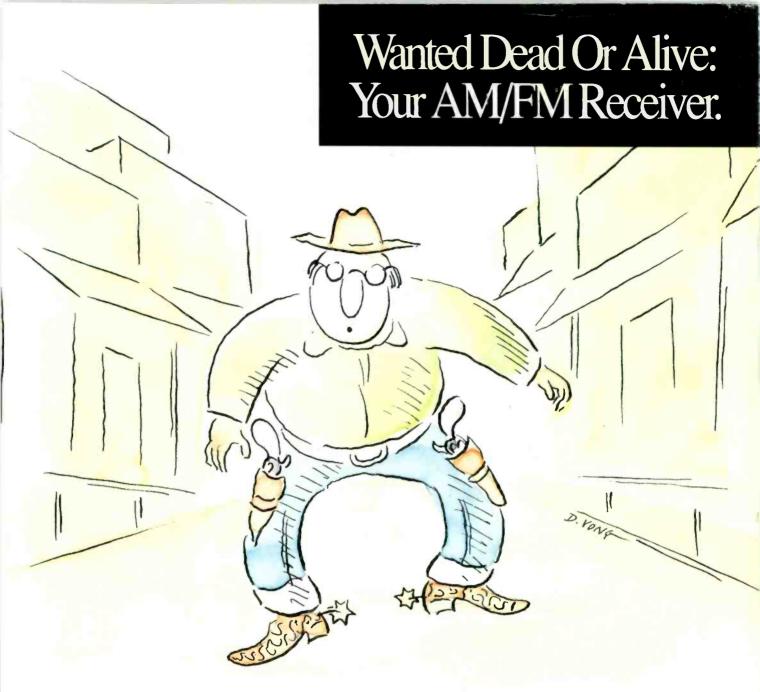
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Our most popular cure for the common receiver: Adcom's GTP-400 Preamp/Tuner and GFA-53511 Power Amplifier with 60 watts/channel. (Continuous both channels driven into 8 ohms, 20 Hz < 0.09% THD.)





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