

APRIL 1984 • \$1.50

Stereo Review

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Better Than the Movies**

**CD Error Correction:
What You Need to Know**

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CIRCLE NO. 1 ON READER SERVICE CARD

Bulletin

Edited by Christie Barter and Gordon Sell

● MIKE NESMITH'S PACIFIC ARTS VIDEO has announced the acquisition of some interesting new videos from Chrysalis Records, including Toni Basil's "Word of Mouth" program, featuring the video version of the hit single Mickey. Also in the package: "The Best of Blondie," "Jethro Tull Slipstream," and "Billy Connelly Bites Your Bum." Look for summer releases in Beta Hi-Fi and the new VHS Hi-Fi format at the special price of \$29.95.

● PHILIPS RECORDS' first simultaneous release on Compact Disc, cassette, and LP was scheduled to be the complete set of Beethoven piano concertos in live recordings by Alfred Brendel with the Chicago Symphony conducted by James Levine. Release plans have had to be revised. The LP and cassette versions are March releases, and the CD's are now scheduled for early April.

● GET YOUR OSCAR BALLOTS READY...for 1985. Arnold Schwarzenegger's next Conan movie, Conan the Destroyer, will pit the musclemán against Grace Jones. The disco diva ("Warm Leatherette") will portray Zula the Warrior.

● SHRAPNEL, the irrepressible "combat-rock" punk band, has finally secured a record deal--with Elektra, no less. The group's debut mini-LP will include a cover of an old Gary Glitter song. Way to go, guys!

● TECH NOTES: Motorola's C-QUAM stereo AM broadcasting and receiving system is gaining new converts. McIntosh Laboratories, Concord, and Samsung have joined Delco, Chrysler, and Sherwood in adopting the system....Concord was recently bought by Epicure Products but will continue to operate as a separate company....Genesis Physics Corp. has bought the Avid speaker company. ...BASF is celebrating the fiftieth anniversary of its invention of magnetic recording tape....Optical Disc Corp., of Cerritos, California, has developed a LaserDisc video disc recorder. Once recorded, a disc can be played back on any LaserDisc player. ...A joint promotion by Sony, Bose,

CBS, PolyGram, and Warner-Elektra-Atlantic will demonstrate digital Compact Disc systems to college students enjoying spring break in Florida. The promotion is part of '84 MusicFest, which will take place in Daytona Beach from March 22 to 26.

● TIME-LIFE MUSIC has introduced two multiple-set collections, both handsomely produced. One is a tape-only compilation covering the Swing Era on twenty cassettes, available as a unit for \$195. The other traces the Great Ages of Music from the Renaissance to the present day via recordings drawn from the PolyGram Classics catalogs. The latter is being released on fifteen double LP albums or cassette packages, which will be shipped separately at \$14.95 each. Time-Life is also selling the Mobile Fidelity set of Sinatra recordings by mail. Write to Time-Life Music, Time & Life Building, Chicago, Ill. 60611.

● MOTOWN has boarded the Compact Disc bandwagon. The company's first CD release includes Lionel Richie's two solo albums and greatest hits collections by Diana Ross, the Jackson Five, the Miracles, and Smokey Robinson.

● ALL THAT GLITTERS: A group of British audiophiles claim to have discovered a phenomenon they call "electron disassociation" that is expected to have a profound effect on the way some hi-fi systems sound. Electron disassociation is said to occur when the electrons carrying a musical signal are forced to bridge the microscopic gap between the metal parts of mechanical connectors, switches, and potentiometers. Some electrons jump ahead of other, neighboring ones, causing a blurring of the image and a veiling of the ultrasonics. The only known solution is to gold-weld every mechanical connection. The improvement is remarkable, according to those who have heard gold-welded systems, and more than offsets the disadvantages of being unable to change components, etc. As we go to press, the April 1 futures price of gold is \$388.20 per ounce.

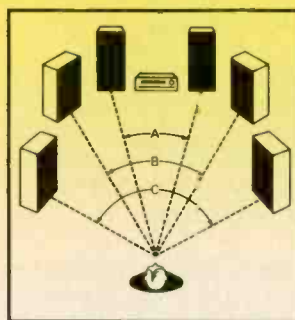
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Stereo Review

(ISSN 0039-1220)

APRIL

VOL. 49, NO. 4

1984

BULLETIN	Christie Barter and Gordon Sell	1
SPEAKING MY PIECE	William Livingstone	6
LETTERS TO THE EDITOR		8
NEW PRODUCTS		13
TAPE TALK	Craig Stark	16
TECHNICAL TALK	Julian D. Hirsch	18
EQUIPMENT TEST REPORTS	Hirsch-Houck Laboratories	21
THE COMPACT DISC BANDWAGON	Christie Barter	36
MUSICALS ON VIDEO	Steve Simels	38
NEW EQUIPMENT: STARS AT VEGAS	William Burton	40
AND FOR THE CAR...	Frank Vizard	47
UNDERSTANDING COMPACT DISC ERRORS	David Ranada	48
HIGH TECH FORUM: SPECIAL AD SECTION		51
RECORD MAKERS	Christie Barter and Steve Simels	69
AMERICAN MAESTRO LEONARD SLATKIN	William Livingstone	72
BEST RECORDINGS OF THE MONTH		76
POPULAR MUSIC		85
LENNON/ONO: "MILK AND HONEY"	Mark Peel	86
IAN ANDERSON: "WALK INTO LIGHT"	Mark Peel	88
POINTER SISTERS: "BREAK OUT"	Phyl Garland	90
LARRY WILLOUGHBY: "BUILDING BRIDGES"	Alanna Nash	92
DICK HYMAN PLAYS ZEZ CONFREY	Joel Vance	96
VERVE JAZZ REISSUES	Chris Albertson	98
"JAZZ IN AMERICA" VIDEOS	Chris Albertson	102
CLASSICAL MUSIC		103
KODÁLY: ORCHESTRAL WORKS	Eric Salzman	104
RAMEAU: TWO OPERAS	Christie Barter, Stoddard Lincoln	112
THE BASIC REPERTOIRE	Richard Freed	118
ADVERTISERS' INDEX		118

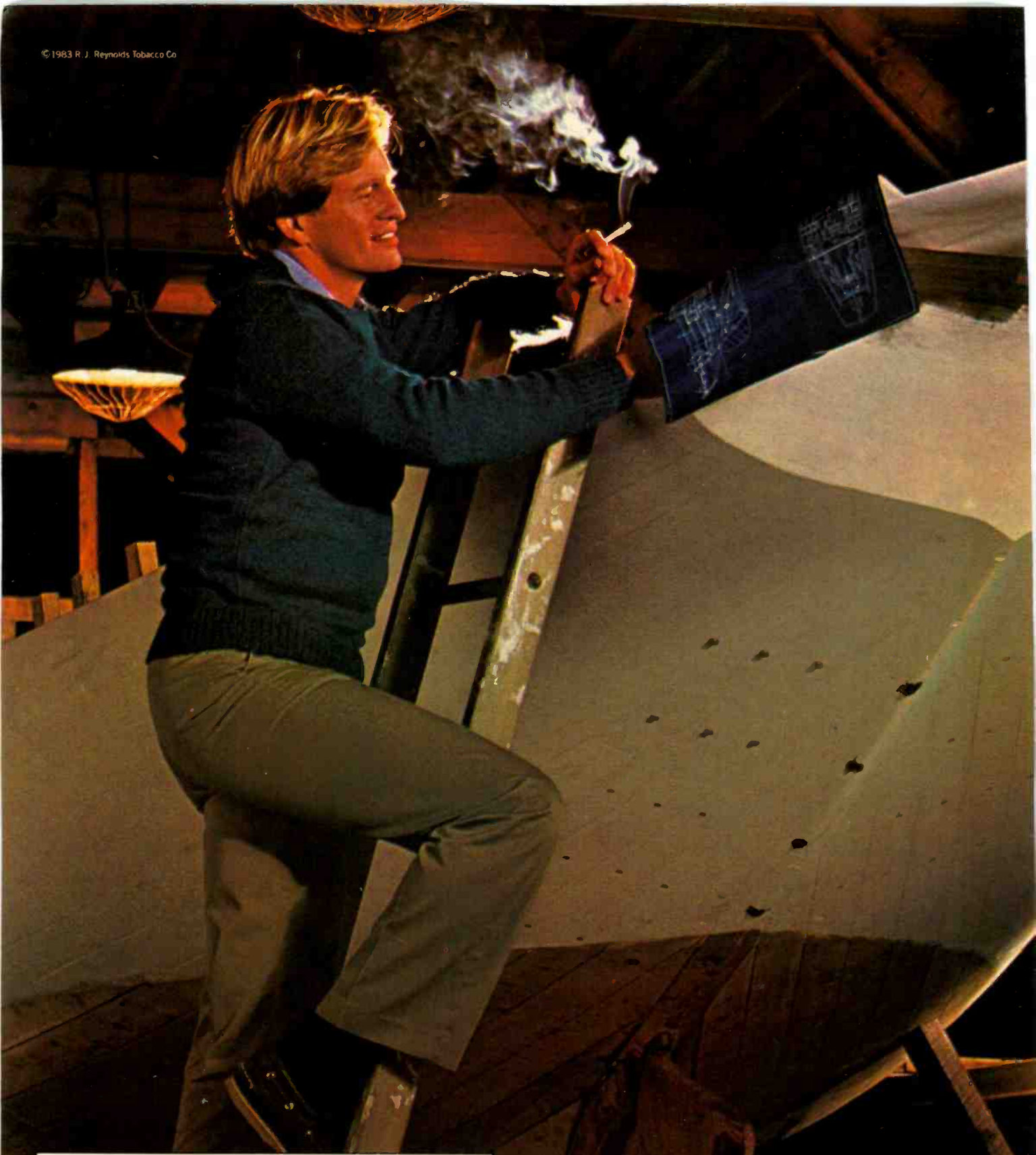


Lincoln Perry

See page 40 for a full report on the 1984 Winter Consumer Electronics Show in Las Vegas.

COVER: Design by Borys Patchowsky; photo by Bruce Pendleton. For test reports on the NAD 5120 turntable and the Carver receiver, see pages 32 and 22.

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Speaking My Piece

By William
Livingstone



With Jack Wayman,
senior vice president
of the EIA's Consumer
Electronics Group

GOOD NEWS

FOR music lovers and audiophiles there is a lot of good news these days. In the so-called Sony Betamax case the Supreme Court has ruled that when you use a video recorder to tape television programs for your own use, you are not violating U.S. copyright laws. Further, the Court ruled that the companies that make and sell the recorders do not violate the law by putting them at the disposal of the public.

In reporting on the decision, the New York *Times* termed it "a major victory for the electronics industry, which has sold nine million video cassette recorders to American consumers." Jack Wayman, senior vice president of the Electronic Industries Association's Consumer Electronics Group, said that it was also a victory "for every consumer who is now free to enjoy the benefits of videotaping without fear and without excessive cost."

Wayman congratulated the Court for the wisdom of its decision. I would like to congratulate Wayman and his EIA/CEG staff for their tireless efforts in opposing the campaign by the Hollywood movie studios and the recording industry to impose a tax or royalty on recording equipment and blank tape.

To me the Supreme Court decision is a triumph of common sense, and it will probably have far-reaching consequences. According to Gary Shapiro, EIA vice president for government and legal affairs, its effect on copyright law will be felt for years.

In discussing the importance of the case, Shapiro emphasizes the fact that the Supreme Court was dealing with new technology as well as considering the conflicting interests of copyright holders and the public. He says it is the first time the Court has faced the

issue of "fair use" of copyrighted materials head on.

It is established that in fashioning the copyright law Congress intended noncommercial home audio recording (including dubbing commercial records for private use) to be construed as fair use. But I don't think the Recording Industry Association of America and the Coalition to Save America's Music have abandoned their lust for that tax.

Jack Valenti, president of the Motion Picture Association of America, has said that Hollywood's representatives will continue to lobby for Congressional legislation to get the tax or royalty on recorders and tape. Flushed with victory, Wayman retorted, "We are going to close the lid on Hollywood's coffin of greed. Those tired old yellow bills have been in Congress for years."

A number of legislators have said they think it unlikely that Congress will pass such bills in the face of the Supreme Court's interpretation of fair use. As a result of the publicity surrounding the Betamax case, legislators are now more sophisticated and know much more about the use of home recorders. But let us not abandon vigilance while enjoying the victory for the consumer.

What other news is good? Well, despite home taping, record sales are up in all major categories, which should make companies take risks on new artists and imaginative recording projects. And economic recovery in the electronics industry is so good that at CES in Las Vegas there were forecasts of retail sales of \$30 billion this year. That should give you a lot of new products (not just VCR's) to choose from. Read all about them in William Burton's "New Equipment: Stars at Vegas," page 40. □

Stereo Review

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Circulation Office
P.O. Box 2771, Boulder, Colorado 80302

EDITORIAL CONTRIBUTIONS must be accompanied by return postage and will be handled with reasonable care; however, publisher assumes no responsibility for the return or safety of art work, photography, or manuscripts.

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The Sansui S-X1050 also features Quartz PLL synthesizer tuning that assures you of drift-free reception. Clean bass response is provided by our DC servo circuitry, and our 5-LED power display lets you see what's happening—even in daylight.

We put all this overachievement under easy control with velvet-touch slides, tabs and push-buttons, to make the S-X1050 as pleasurable to operate as it is to listen to. For instance simultaneous switching lets you go instantly from one source to another at the

touch of a tab. And when you want to lock in your favorite music stations, you can at the touch of a button with 12 presets (6FM, 6AM).

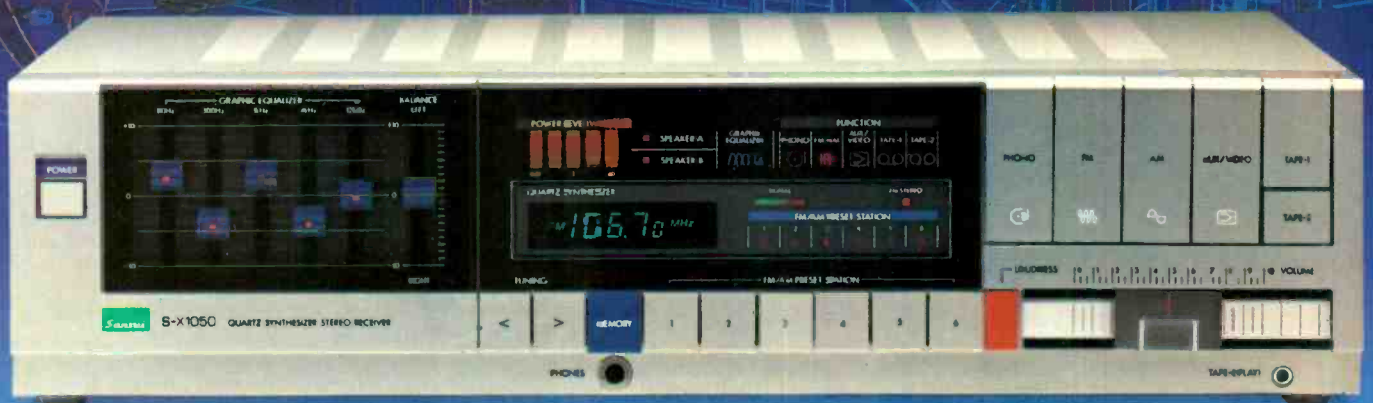
All this, plus playing two pairs of speakers simultaneously, slide volume control and a 2-deck connection for tape 1 to 2 dubbing make the S-X1050 a most incredible unit.

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Advent 6003

ADVENT

Letters

FRANK SINATRA

● "The One and Only Frank Sinatra" by Gary Giddins in the February issue was an honest and well-deserved tribute to an important artist of our time. It reflected the sensitive qualities of an individual who accepted his craft with much seriousness and who transcended the role of mere entertainer.

WALLIS ANTUCK
Lansing, Mich.

● STEREO REVIEW's February tribute to Frank Sinatra by Gary Giddins was excellent. It really gave an insight into his fabulous career. By the way, like Sinatra I sang on the Major Bowes Amateur Hour—two years later, in 1937 on Navy Day. The song was *Harbor Lights*. I was one of three winners, but the Navy had first claim on me.

PAUL JENKINS
Brookings, Ore.

● Beautiful! Your choice of Frank Sinatra as the 1983 recipient of STEREO REVIEW's Mabel Mercer Award was fitting and timely. The past honorees include the leading exponents of each musical field represented. Sinatra is unarguably at the forefront of American vocal pop—a singer's singer and the people's singer.

Gary Giddins's article was beautifully conceived and written. For comparison I took out my November 1971 issue, which had a cover story on Sinatra by Henry Pleasants. I found it thoroughly fascinating, and in combination with the Giddins article it gives an extremely valuable insight into *The Man*.

HARRY L. LICHTENBAUM
Wethersfield, Conn.

● My congratulations to Gary Giddins on his Sinatra piece, and to you all on the layout! A nice, dignified, and vivid piece of work. I regret only Gary's misquotation of me, referring to Sinatra's "typical [!] light baritone . . ." What I wrote was "typical Italian light baritone . . ." which makes sense and would not have called for the insertion of the quizzical exclamation point.

HENRY PLEASANTS
London, England

RURAL FM

● I live in a rural area and have to use a high-gain, rotatable antenna. I disagree with Julian Hirsch's statement in his February article, "FM Tuners in Town and Country," that 50-dB quieting sensitivity is the most important specification for listeners in my situation. For me, it is adjacent-channel selectivity. There are at least two stations I would like to receive

that are interfered with on adjacent channels. Since the interfering stations broadcast in the same line as the ones I want, rotating my antenna doesn't help. I cannot believe that this problem is so rare that manufacturers cannot address it. I would gladly put up with greater distortion for greater selectivity.

ROBERT C. JOHNSON
Tiffin, Ohio

Julian Hirsch replies: In your situation, high selectivity is obviously a paramount requirement. My recommendations were very general and could not possibly cover all reception conditions, though I did mention a problem like yours in the section on suburban reception. I really do not know what proportion of listeners share your reception problems, but I suspect it is not large enough to justify the development and marketing of a tuner optimized for adjacent-channel selectivity.

X RATED

● If the band X reads Steve Simels's February review of their album "More Fun in the New World," they'll probably consider a premature end to their careers. It's not that Mr. Simels gave an A-1 posi-



Ken Marcus/Electra Records

"New World" band X

tive review to a "punk" band, it's his prehistoric references.

For one thing, I can assure you that X did not in any way obtain (steal) anything from the Jefferson Airplane, much less John and Exene's unique harmonies. And the punk/funk track *True Love (Part Two)* was not inspired by the Rolling Stones but by Texas's Big Boys, the only hard-core band I can think of that ever covered, complete with horns, a song by Kool & the Gang. The Big Boys were even mentioned on "More Fun" in *I Must Not Think Bad Thoughts*.

PETER GONTIER
San Marino, Calif.

ANALOG TREASURES

● I was sorry to read in February "Letters" of reader Richard Andres's disillu-

Why Your First Compact Disc Player Should Be A Second Generation Mitsubishi.

No wow. No flutter. Dynamic range over 90dB. Plus complete freedom from dust, dirt, surface noise, rumble and speaker feedback.

The truth is, the basic technology of the digital audio disc is so vastly superior to analog sound, that deciding on a player becomes very tricky indeed.

That is, until you check the record.

YOU DON'T BECOME A DIGITAL AUDIO EXPERT OVERNIGHT.

Most companies now introducing digital audio players were just recently introduced to digital audio themselves.

Mitsubishi has been at the leading edge of digital audio research since the beginning. Moreover, much of the second generation technology found in the Mitsubishi DP-103 compact disc player you see here is a direct result of that experience.

For example, the DP-103 employs a three-beam optical pickup in place of the conventional single beam. These two insurance beams constantly correct for imperfections in the disc, ensuring stable, error-free tracking.

The retaining springs for the laser optics pickup, which are susceptible to vibration, have been replaced by Mitsubishi's exclusive linear-sliding cylinder—in effect eliminating a problem before you've had one.

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Like stereo componentry that preceded it, the compact disc player of the future will offer improved technology at a lower price.

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sionment with analog LP's. While I await price reductions on Compact Disc players and increases in the CD catalog sufficient to justify the plunge, I'm splurging on cheap reissues of great recordings of ten and twenty years ago.

My current cartridge (a Shure V-15 Type V) can at long last track *cleanly* recordings that often sounded frustratingly "dirty" in Sixties pressings played with my Sixties cartridges. I'm enjoying performances by Reiner, Szell, Kertesz, and early stereo Bernstein and Karajan as never before. The master tapes were obviously far better than the records made them sound when first released. These recordings are great music and great values,

and if CD's take over as predicted, the opportunity to acquire them won't last long. I urge Mr. Andres not to turn his back on LP's too soon.

WILLIAM J. MURPHY
Sacramento, Calif.

BOB DYLAN

● Steve Simels is entitled to his beliefs; freedom of thought includes the freedom not to think. But Bob Dylan's "Infidels" is a great album. And it is an important album; it says things that need saying.

Sweetheart Like You is about trying to establish a relationship between equals in this jungle-land-city. *Neighborhood Bully*

is about Israel, the Arabs, and the hypocrisy of the comfortable self-proclaimed radicals. It is a truth. It is a song that Shalom Ackshav (Peace Now) in Israel would appreciate while their American friends would find it disconcerting.

Dylan is his own. From his aborted gig on the Ed Sullivan Show to the Newport Folk Festival to today, he sings what he wants when he wants to. And when he alienates any of his alleged fans, that's their problem.

ARIEH HACOHEM FURMAN
Staten Island, N.Y.

RECORD AWARDS

● Thank you for selecting Richard Thompson for a second consecutive year as one of STEREO REVIEW's Record of the Year Award recipients. On "Hand of Kindness," Joe Boyd's masterly production and Thompson's rough-edged, spine-tingling guitar work achieve perfection with a touch of class. Now is the time for all jubilant Thompson fans to unite! Bombard your favorite FM stations with post cards, tack on your booster pin, paste up your bumper, and be very proud to be a Thompson gunner!

CHRIS DABROWSKI
Boonton, N.J.

● May I call your attention to an error in the listing of Record of the Year Honorable Mentions in February? The Mozart piano concerto played by Steven Lubin on Arabesque is No. 23, not No. 32.

W. E. CRAIG
Oak Park, Ill.

Our apologies to Mr. Lubin—and to Mozart—for allowing this typo to get into print.

DYNAMIC EXPANDERS

● When I read the "New Products" writeups on page 13 of the February issue, I groaned, "Oh Gawd, not *another* dynamic-range expander!" Who needs 'em? A living room is not a concert hall; there is always some noise about (refrigerator, furnace, air conditioner, traffic outdoors, whatever). Switch on the expander, turn up the volume enough that the soft passages are comfortably audible, and the loud ones will blow you through the wall. It is even worse, of course, if you use one in a car.

CHARLES H. CHANDLER
Malden, Mass.

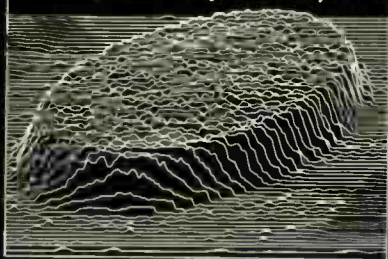
CRITICAL RAVE

● God bless Alanna Nash! Bless her for writing the most perceptive and tasteful country-music reviews I've read yet in a mass-circulation magazine. Bless her for recognizing such talents as Delia Bell, Gail Davies, John Anderson, and other country and bluegrass performers whose depth and musical integrity too often go relatively unnoticed. And bless her for not having a hint of the condescension that so often plagues popular writing about country music.

RON HALE
Santa Fe, N.M.

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Topographic Response Analysis.



Whether you're ready for a digital audio-disc player or not, these Celestion speakers are waiting to make the most of the system you have.

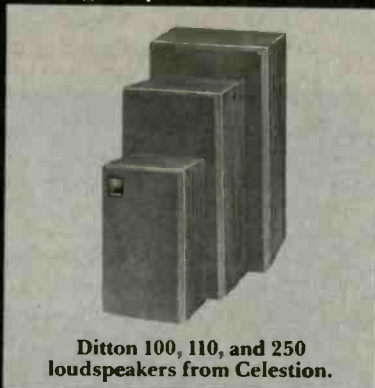
There's a reason for it. These loudspeakers were digital before digital players were. Critical dimensions, materials, driver characteristics—all were digitally plotted in three dimensions by laser technology. The result is a unique combination of accuracy, dynamic range, and power-handling capability that is extraordinary

in compact speakers at a modest price.

There's a reason for all this, too. At Celestion, we make speakers, everything that goes into them, and have the most experience in the business.

Listen for yourself at your Celestion dealer.

Even if you have to wait for a digital player, you'll be ready when the time comes. And you won't have to wait for digital pleasure.



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CIRCLE NO. 24 ON READER SERVICE CARD



INTRODUCING DODGE CARAVAN. A TRANSPORTATION REVOLUTION.



FULL-SIZE VAN



DODGE CARAVAN

**WE ARE
DODGE.  AN
AMERICAN
REVOLUTION.**

NOT AS LONG AS A FULL-SIZE STATION WAGON, YET IT HOLDS 40% MORE CARGO. AND IT'S ABOUT THE SAME HEIGHT AS THE AVERAGE AMERICAN WOMAN. IT HAS FRONT-WHEEL DRIVE, GETS INCREDIBLE MILEAGE, AND IS BACKED BY 5/50 PROTECTION.



Dodge Caravan. A truly revolutionary vehicle. It can handle two adults plus 125 cubic feet of cargo. Or five adults. Even seven with the available rear seat. Yet it's shorter than a full-size station wagon, so it's easier to maneuver and park. And since Caravan stands a mere 5'5," it's easy for you to get in and out of. And it's easy to get Caravan in and out of your garage.

Caravan's 2.2-liter engine rates an est. hwy. \mp 37 and EPA est. mpg of [24]* —impressive mileage for a vehicle of this sort. Caravan also has front-wheel drive to handle slippery surfaces outside and give you more room inside. Yet for all of this, Caravan is remarkably low-priced and even backed by Dodge's 5 year/50,000 mile Protection Plan on engine, powertrain and outer body rust-through.**

The totally new Dodge Caravan. You've got to see it, sit in it, and drive it to believe it. All of which can happen at your Dodge dealer — where you can buy or lease*** your very own transportation revolution.

The New Chrysler Technology. Quality backed by 5/50 Protection.

*Use EPA est. mpg for comparison. Your mileage may vary depending on speed, distance and weather. Actual hwy. mpg and CA est. lower.

**5 years or 50,000 miles, whichever comes first. Limited warranty. A deductible applies. Excludes leases. SEE DEALER FOR DETAILS

BUCKLE UP FOR SAFETY

A cowboy wearing a white shirt, a cowboy hat, and chaps is riding a dark horse. He is holding a lasso. In the foreground, two packs of Marlboro cigarettes are visible: a red pack labeled 'Marlboro FILTER CIGARETTES' and a gold pack labeled 'Marlboro 100's'.

Marlboro Country

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

17 mg "tar," 1.1 mg nicotine av.
per cigarette. FTC Report Mar '83

© Philip Morris Inc., 1984

Warning: The Surgeon General Has Determined
That Cigarette Smoking Is Dangerous to Your Health.

New Products

Latest Audio Equipment and Accessories

NO-FRILLS CD PLAYER FROM NAD

□ NAD's first Compact Disc player has an uncluttered front-panel design and unusually simple operating functions, without any of the elaborate programming facilities featured on many more expensive models. It has a skip function that gives rapid access to any track on a disc, and



the slower two-speed search function can be used to scan a disc in either direction with audible output for precise cueing. Passages can be cued to within one second. Complete playback of a disc from beginning to end requires pressing only one button after the disc is loaded in the slide-out drawer.

The NAD 5200, described as a "second-generation" CD player, makes extensive use of large-scale integrated circuits for simplicity of manufacture and reliability. Its frequency response is given as 20 to 20,000 Hz ± 0.5 dB, signal-to-noise ratio as 98 dB (A-weighted, de-emphasis on), and harmonic distortion as 0.01 per cent at 0 dB. Rated output level at 0 dB is 2 volts. The player is 16½ inches wide, 3¾ inches high, and 13 inches deep; weight is about 13¾ pounds. Price: \$650. NAD (U.S.A.), Inc. Dept. SR, 675 Canton Street, Norwood, Mass. 01062.

Circle 120 on reader service card

NEW MITSUBISHI CAR STEREO

□ Mitsubishi has added three new car stereo cassette player/receivers to its Diamond Collection line, bringing it to a to-



tal of eight models. The RX-724 (shown), RX-733, and RX-737 all have metal-tape capability and power outputs of 7 watts per channel into 4 ohms. The \$140 RX-724 has an analog tuner; the other two are digital-synthesis models.

The RX-733 has an auto-reverse cassette player, a loudness control, and a four-way fader. Price: \$290. The RX-737 features Dolby-B noise reduction, Music Program Search, a loudness control, and auto seek and scan tuning. Price: \$380. Mitsubishi Electric Sales America, Dept. SR, 799 North Bierman Circle, Mount Prospect, Ill. 60056.

Circle 121 on reader service card

PRERECORDED DIGITAL AUDIO TAPES

□ The Direct-to-Tape Recording Company now offers VHS or Beta video cassettes prerecorded with digital audio and playable using a VCR and PCM digital-audio adaptor. Some of the recordings are licensed from Titanic and AFKA Rec-

ords, others recorded by DTR itself. The DTR recordings were made using only two microphones and without limiting, equalization, or compression. The cur-



rent DTR catalog lists more than forty-five titles, mostly classical but with a few jazz and popular items. Prices in this format range from \$25 to \$31.

The same recordings are also available on open-reel and regular audio cassettes. All are duplicated in real time and can be ordered with either Dolby-B, Dolby-C, or

VHS HI-FI IN VCR FROM RCA



□ The VKT550 video-cassette recorder from RCA features the new VHS Hi-Fi system for high-fidelity stereo sound. Its audio specifications include a dynamic range of more than 80 dB, frequency response of 20 to 20,000 Hz, and wow-and-flutter of 0.005 per cent.

The VHS Hi-Fi system uses an additional pair of audio heads on the rotating video drum. These heads record and play back audio signals encoded on two frequency-modulated (FM) carriers, 1.3 MHz for the right channel and 1.7 MHz for the left channel. To keep the audio and video signals from interfering with each other, the audio and video heads have different azimuth angles and record at different levels on the video tape—a technique called "depth multiplexing." The FM audio heads lay down their signals through the full depth of the tape coating while the video heads record on only the top layer of the tape.

To lessen audio noise further, the VHS Hi-Fi system uses a companding noise-reduction process (called Peak Noise Reduction in the RCA unit) for the FM audio signals. As in the Beta Hi-Fi system, there is simultaneous recording of audio signals using conventional fixed heads and separate audio tracks on the tape, making the system fully compatible with non-Hi-Fi tapes and VCR's. The system enables a maximum of eight hours of hi-fi sound to be recorded on a single video cassette.

Video functions of the RCA VKT550 include a fourteen-day/six-event timer, infrared remote control, 105-channel tuning capability, "express recording," stop action, frame advance, double speed, and forward and reverse picture search. Price: \$1,000. RCA, Dept. SR, 600 North Sherman Drive, Indianapolis, Ind. 46201.

Circle 122 on reader service card

New Products

dbx noise reduction. Prices begin at \$11. A copy of the company's catalog/newsletter, *Direct-to-Tape News*, is available for \$1 from Direct-to-Tape Recording company, Dept. SR, 14 Station Avenue, Had-don Heights, N.J. 08035.

Circle 123 on reader service card

SHEFFIELD LAB'S ANTI-DIGITAL T-SHIRT

□ Sheffield Lab, producer of direct-to-disc and other non-digital audiophile recordings, now offers T-shirts promoting



Steve Pollack

its anti-digital point of view. The light-blue, all-cotton, short-sleeve shirt has the slogan "STOP DIGITAL MADNESS" over the Sheffield Lab tulip logo in pink. Price: \$7 in medium, large, and extra-large sizes. Sheffield Lab, Dept. SR, P.O. Box 5332, Santa Barbara, Calif. 93108.

FIRST RECEIVER FROM PROTON

□ The tuner section of the Proton 930 digital-synthesis AM/FM receiver, the company's first home audio component, features a Schotz tuner circuit and a four-gang, triple-JFET front end. Specifications include a 50-dB quieting sensitivity



of 2.8 microvolts and FM channel separation of 50 dB at 1,000 Hz. The amplifier

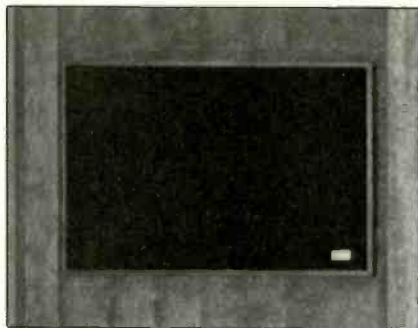
section is rated for 30 watts per channel continuous power output. Dynamic power at 1,000 Hz is given as 81 watts into 4 ohms and 60 watts into 8 ohms. A defeatable Anti-Clipping Circuit is said to enable the receiver to produce higher usable volume levels without distortion by "gently limiting" waveforms that would otherwise cause the amplifier to clip the signal.

There are five station presets, each usable for one FM and one AM frequency, and an automatic station-search function. Other features include a switchable phono input for either a moving-magnet or moving-coil cartridge and a bass-equalization circuit that provides a 10-dB boost at 42 Hz. An input for video sound replaces the usual auxiliary input. The Proton 930 measures about 16¾ x 3¾ x 9¾ inches and weighs 20 pounds. Price: \$360. Proton, Dept. SR, 737 West Artesia Boulevard, Compton, Calif. 90220.

Circle 124 on reader service card

WALL-MOUNTING DUNTECH SPEAKERS

□ Only 3½ inches deep, 23½ inches wide, and 16¾ inches high, the Duntech PCL-3 speakers are intended to be mounted on a wall like framed pictures. The two drivers in each system are verti-



cally aligned for precise imaging. The 170-millimeter-diameter bass/midrange has a Bextrene cone, and the 19-millimeter dome tweeter has a ferrofluid-cooled voice coil.

The claimed frequency response of the PCL-3 is 55 to 20,000 Hz ± 3 dB. Nominal impedance is 8 ohms. Rated sensitivity is a sound-pressure level of 83 dB measured at 1 meter with a 1-watt input. Recommended amplifier power is 50 to 200 watts. The speaker is enclosed in a frame of hand-rubbed solid oak. The standard grille cloth is black, but other colors and silk-screened pictures are available. Mounting brackets are provided. Price: \$750 per pair. W & W Audio, Dept. SR, 4821 McAlpine Farm Road, Charlotte, N.C. 28226.

Circle 125 on reader service card

NAKAMICHI'S LESS COSTLY CAR STEREO

□ The TD-800 car cassette player/tuner from Nakamichi offers performance similar to that of the company's top TD-1200 model but at a substantially lower price.

The main difference is that the TD-800 lacks auto-reverse capability and auto-



matic azimuth correction. Instead, it features a separately mounted Azimuth Fine Tuning control with thirty-one detented positions so that the user can manually align the Crystalloy playback head to compensate for any azimuth error in a recording.

The tape section's rated frequency response is 20 to 22,000 Hz ± 3 dB. Both Dolby-B and Dolby-C are included (Dolby-B can be used with FM also). Signal-to-noise ratio is given as 70 dB with metal tape and Dolby-C. Rated wow-and-flutter is 0.045 per cent weighted wrms.

The digital-synthesis tuner section has five AM and five FM station presets and autoscan as well as manual tuning. Like the azimuth control, much of the TD-800's electronics are housed separately from the in-dash tape-transport/control unit and can be mounted elsewhere under the dash. Price: \$890. Nakamichi U.S.A., Dept. SR, 1101 Colorado Avenue, Santa Monica, Calif. 90401.

Circle 126 on reader service card

PASSIVE RADIATOR IN GENESIS SPEAKER

□ The two-way Genesis 20 loudspeaker system combines a 1-inch tweeter, an 8-inch woofer, and a 10-inch passive radiator in a vented particle-board enclosure. The speaker uses quasi-third-order low-frequency alignment and has a bass reso-



nance of 34 Hz. The woofer has a four-layer high-temperature voice coil with a rubber impact bumper to help it withstand overdriving. The inverted dome tweeters, with individually corrected responses, have Ferrofluid-damped suspensions. Overall frequency response is given as 34 to 20,000 Hz ± 4 dB, sensitivity as 89 dB sound-pressure level with a 1-watt input measured at 1 meter. The Genesis 20 measures 27½ inches high, 14

inches wide, and 10½ inches deep and is finished in walnut-grain vinyl. Individual frequency-response graphs are printed on the cartons. Price: \$400 to \$450 per pair. Genesis Physics, Dept. SR, Newington Park, Newington, N.J. 03801.

Circle 127 on reader service card

SONY'S MULTI-PLAY CASSETTE DECK

□ As many as ten cassettes at a time can be loaded into Sony's new multi-play deck, the MTL-10. The cassettes can be played continuously, using auto-reverse, in any order. A repeat function enables a single track to be replayed up to ten



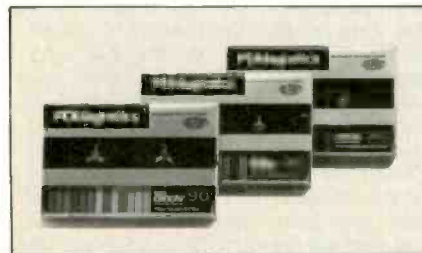
times. A blank-skip function detects unrecorded passages more than ten minutes long and shifts into fast-forward until music is again detected. The Automatic Music Sensor enables the user to skip either forward to the beginning of the next selection or back to the beginning of the current one.

The playback-only deck is equipped with Dolby-B noise reduction. Switches on the loading magazine are used to set bias, equalization, and Dolby on/off individually for each cassette. The JL-10 loading magazines are available separately for \$15 each and can be used for cassette storage. Price of the MTL-10: \$250. Sony Corporation of America, Dept. SR, Sony Drive, Park Ridge, N.J. 07656.

Circle 128 on reader service card

TAPE LINES FROM PDMAGNETICS

□ PDMagnetics has introduced two new lines of audio tape. High Grade, its premium line, includes Tri-Oxide Ferro HB (a Type I tape), 500 Crolyn HG (Type II), and 1100 Metal HG (Type IV). The Quality line consists of Ferro, Tri-Oxide Ferro



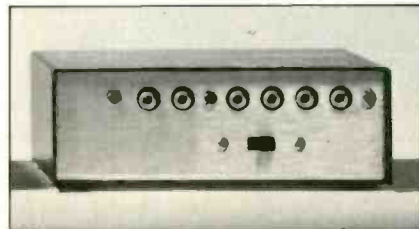
(both Type I formulations), and 500 Crolyn (Type II). The two Crolyn tapes are true chromium-dioxide formulations. C-60 and C-90 lengths are available in all tape types. Prices for C-90's: Quality Ferro, \$3.99; Tri-Oxide Ferro, \$4.99; 500 Crolyn, \$5.99; Tri-Oxide Ferro HG,

\$6.99; 500 Crolyn HG, \$7.99; 1100 Metal HG, \$11.99. PDMagnetics, Dept. SR, P.O. Box 4499, Wilmington, Del. 19807.

Circle 129 on reader service card

ACE AUDIO'S BASS CROSSOVER

□ The Model 5000-SF electronic crossover from Ace Audio is designed for use when a subwoofer is being added to an existing stereo system. The crossover diverts signals below 100 Hz from the two



main speakers, and there is a volume control that enables the user to boost the subwoofer's output level by up to 10 dB relative to the main speakers. The unit includes a subwoofer bridging amplifier and a bypass switch.

The 5000-SF uses 1 per cent metal-film resistors and polystyrene capacitors. Active filter circuits limit distortion to 0.002 per cent at a 2-volt output level. Frequency response is -3 dB at the crossover point and rolls off at 18 dB per octave above that. Price: \$185. Ace Audio Co., Dept. SR, 532 5th Street, East Northport, N.Y. 11731.

Circle 130 on reader service card

BUDGET SANYO BETA HI-FI VCR

□ Sanyo's new front-loading, table-top VCR 7200 features Beta Hi-Fi audio recording and playback together with full video functions for the comparatively low price of \$699.95. The Beta Hi-Fi system can be used for recording from any



source, including stereo broadcasts and live music, as well as playing back prerecorded video cassettes with Beta Hi-Fi soundtracks. Audio specifications include a dynamic range of 80 dB, frequency response of 20 to 20,000 Hz with less than 0.3 per cent distortion, wow-and-flutter less than 0.005 per cent rms (NAB), and channel separation of more than 60 dB. The VCR 7200 is compatible with all Beta-format tapes and can also play standard mono audio tracks (Beta Hi-Fi signals are recorded separately through the rotating video heads).

The recorder includes a fourteen-day/eight-event timer, a 105-channel cable-ready tuner, high-speed picture search,

and a thirteen-function wireless remote control. Weight is 19¾ pounds, and dimensions are 16¾ inches wide, 4¾ inches high, and 14¼ inches deep. Sanyo Electric, Dept. SR, 1200 West Artesia Boulevard, Compton, Calif. 90220.

Circle 131 on reader service card

SCANDINAVIAN AUDIO FURNITURE

□ The Danefurn company has introduced a line of audio-equipment cabinets imported from Scandinavia. Featuring American-walnut veneers, glass doors, and high-stress castors, the cabinets come knocked down and can be assembled using only a screwdriver. The DFAV-6 (shown) has three interior shelves for components and a divided record-storage



shelf; a five-shelf storage compartment for audio cassettes slides out at the right of the cabinet. The top can hold a turntable or other component. Dimensions are 28 inches wide, 42 inches high, and 20 inches deep; weight is 117 pounds. Price: \$492.

The DFAV-116 audio rack has three shelves for components, with a lift-up top on the uppermost one to accommodate a turntable. There is a record-storage shelf on the bottom. Dimensions: 19½ x 39¼ x 20 inches, weight 79 pounds. Price: \$316. The DFAV-7 is a double-width cabinet with four inner shelves for components and two record-storage shelves. Dimensions: 41¼ x 35½ x 20 inches, weight 110 pounds. Price: \$426. Danefurn, Inc., Dept. SR, 425 Huel Road, Northbrook, Ill. 60062.

Circle 132 on reader service card

NOTE: All product descriptions and specifications quoted in these columns are based on materials supplied by the manufacturers, who will respond directly to requests for further information. Domestic inflation and fluctuations in the value of the dollar affect the price of imported merchandise. Prices quoted in this issue are therefore subject to change.

Tape Talk

By Craig Stark



CAR RECORDING?

Q. Are there car stereo decks that include a recording capability? If not, why not?

JIMMY C. BROWN
Creswell, Ore.

A. If you want to record radio talk shows or dictate notes while driving, you might consider the JVC KS-Q8, an in-dash unit that includes a pop-out hand-held recorder, or the Kraco KID-595, which will record from the radio or a microphone. But as for making music recordings with a car stereo, I don't think it's a very good idea.

First, FM reception problems on the road are often severe. While one can tolerate occasional unexpected disruptions while listening, on a tape these would quickly become predictable and very objectionable. Second, even if space inside the car deck could be found for the additional circuitry needed for recording, it would be very hard to add the necessary front-panel switches, knobs, and level display. Moreover, making good recordings requires paying attention to the recording levels, and that's incompatible with safe driving.

Finally, with very few exceptions, the cassette players used in car stereo systems are rather limited in fidelity. (For whatever reason, people seem to put up with sound quality in their automobiles that they would never tolerate in their homes.) Suppose, then, that you could make a recording while driving. The natural thing to do would be to play it on your regular system when you got home. At that point, however, the poor quality would no longer be masked by the automobile's noise and peculiar acoustics, and you'd probably become very unhappy with a car system you would otherwise enjoy.

GILDING THE LILY

Q. I am about to purchase a top-quality cassette deck and have a couple of questions. Could I buy an "outboard" Dolby HX Pro unit to improve its high-

frequency headroom? Could the deck be modified to record and play at 3 $\frac{3}{4}$ ips?

STEVE MABLY
Willowdale, Ontario

A. The answer to your first question is no. Apart from any licensing problems (Dolby HX Professional was developed by Dolby together with Bang & Olufsen), incorporating HX Pro in an outboard unit would be next to impossible. The system operates by dynamically changing the level of the recording bias in response to the high-frequency content of the musical signal, and both the sensing and the bias-adjustment circuitry have to operate deep within the recorder's electronics. The system has to be built into the deck, and not every manufacturer is convinced that the merits of HX Professional are worth the added cost.

As for your second question, while there was some interest in double-speed cassette recording a few years ago, it seems to have faded, for perhaps two reasons. One has to do with licensing again. Philips, which invented and licenses the Compact Cassette format, vigorously enforces its standard, which specifies a 1 $\frac{7}{8}$ -ips speed. Second, except for professional applications, consumers did not find the increase in sound quality from double-speed recording to be worth the loss in playing time.

Tascam, the professional division of Teac, still offers a two-speed cassette deck with the 3 $\frac{3}{4}$ -ips option, so perhaps you should consider that model. The idea of modifying a deck after you buy it is not a good one unless you are a gifted engineer—or know one who'll do the work. Any such tinkering would immediately void the manufacturer's warranty, and with the electrical and mechanical complexity of today's top-quality decks, the effort is unlikely to be worthwhile.

DUBBING DEGRADATION

Q. When recording a live concert I use a high-quality recorder with Dolby noise reduction, and I leave the Dolby system on when I make an edited copy on a second recorder. If additional copies are

required I use the edited copy as the master for the first, then the first copy as the master for the second, and so on, always with the Dolby system on. To my ears there isn't much loss from one generation to the next, though I admit that I don't pay much attention beyond the edited first copy. Would I make better subsequent copies if I always used the edited copy as the master? How much deterioration is involved in sequential copying compared with the deterioration of an edited master through repeated use?

L. R. CLARKE
Park Ridge, Ill.

A. Studio editors start to get a little worried about the possibility of significant wear on a tape after about a hundred passes, but unless you're making copies on a production-line scale I wouldn't worry about wearing out your edited master. What puzzles me is why you take such care to ensure a high-quality original and edited master only to turn out copies that before very many generations (Dolby or no) are going to sound like a 78-rpm record being played on a shaky table. If each generation loses about 3 dB in 15-kHz response, which is likely enough with the usual Dolby tracking errors and inherent machine imperfections, it won't take many successive copyings to make the highest frequencies totally inaudible. Meanwhile, each generation rerecords the noise on the previous copy and adds a layer of its own. Wow-and-flutter adds up similarly. Even with top studio equipment the number of overdubs (rerecordings, similar to your sequential copying) is held to the minimum necessary. When I had to do this kind of recording and copying some years ago, I never went further than the second generation from the master, and I think that would be a good rule for you to adopt.

EIGHT-TRACK DRAG

Q. My eight-track cartridges from years gone by tend to drag or speed up unpredictably when I play them. Is there a way to rewind them, or am I out of luck?

R. G. YANCY
Bruce, Wis.

A. I'm afraid your luck has run out. As part of the manufacturing process, a dry lubricant is applied to the back of the polyester base material of eight-track tape. This permits the tape to be pulled out from the center of the hub and returned to the periphery of the tape pack. With time and use, this lubricant can disappear and/or become contaminated with dust, flaked-off oxide particles, and the like. This changes the sliding friction, causing the erratic motion (and pitch) you have observed. With a bit more playing the cartridge will freeze up completely.

There is no cure for this; it is inherent in the nature of the endless-loop design used for eight-track cartridges. The best advice I can give is to dub any eight-track material you want to keep onto cassettes before the first trouble appears. □



YAMAHA INTRODUCES THE SECOND-GENERATION GAP.

Second-generation CD players have come a long way. But none as far as the new Yamaha CD-X1.

There are two unique reasons why – the YM-3511 and the YM-2201 – high performance, high density LSI's specially developed by Yamaha to make the CD-X1 everything it is. And one thing it isn't.

It is the most technically advanced, user-friendly, high performance CD player on the market. It isn't expensive. It is amazing.

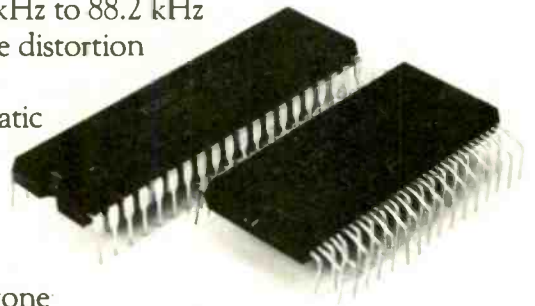
It has a 3-beam laser pickup that is more accurate than any other previous system.

We've also doubled the normal sampling rate from 44.1 kHz to 88.2 kHz and added a new digital filter system to virtually eliminate phase distortion and provide the highest possible playback resolution.

User-friendly features include easy DISC loading, automatic PLAY mode selection, easy MEMORY programming, convenient MUSIC SEARCH, handy REPEAT function, multi-function INDICATOR, audible FAST FORWARD and more.

The user-friendliness also includes a \$599* price tag.

The CD-X1 from Yamaha. It'll be a long time before anyone closes this second-generation gap.



*Suggested retail price

Technical Talk



JULIAN D. HIRSCH

HOW TO CHOOSE A COMPONENT

SELECTING components for a music system is fairly simple once you've narrowed the choice to a few products in each category. The early stages of the process, however, can be very confusing. As a prospective buyer, you are often faced with a large number of brand names, each of them representing a line of products spanning a wide range of prices. And the significant differences between some models—to say nothing of the *important* ones—may not be at all apparent from reading a manufacturer's brochure or advertisement.

Part of your choice will usually be based on price, of course, but comparing prices presents some difficulties. It may not be at all obvious how, say, a \$299 receiver differs in value from a \$329 one in the same manufacturer's line.

As a starting point, I have always found the product listings in *STEREO REVIEW's* annual *Stereo Buyers Guide* to be the most convenient source of comparative data. Consulting a comprehensive directory not only facilitates brand-to-brand comparisons, it also enables you to compare, specification for specification, the different models in a given manufacturer's product line.

A manufacturer can create a broad line of differently priced products from only a few basic modules. Take, for perhaps the

best example, the stereo receiver, long the most popular type of audio component. Some manufacturers offer as many as nine or ten receiver models, which may be priced from under \$200 to nearly \$1,000, sometimes with price differentials of only \$20 or \$30 between models. Faced with this situation, how can you make an intelligent choice?

The first step is to analyze each receiver, to continue our example, in terms of its features, its amplifier section, and its tuner section. It can be assumed that even the lowest-priced receivers have a normal complement of inputs, outputs, and basic controls. Generally, the more expensive units have additional control features—sometimes referred to as “bells and whistles”—that may or may not be important to you. You will have to decide, for instance, whether multiband tone controls or a built-in equalizer, output power displays, and the like are worth their cost to you.

Besides the special control and processing features that can be added or subtracted in order to differentiate the various receivers in the line, a manufacturer may use only a few different circuits for

the tuner- and power-amplifier sections. The amplifier circuits, moreover, can usually be simply modified to deliver various rated output-power levels.

For simplicity, let's assume that only two different basic circuits for each section are to be used. The cheaper tuner circuit will then be combined with two or three versions of the cheaper amplifier circuit to create the budget receivers in the line, which will differ primarily in their output-power ratings. The next model up in the line will probably use the better tuner circuit and either a high-power version of the cheaper amplifier circuit or a low-power version of the better amp. More expensive models will use the same tuner circuit together with other versions of the better amplifier, and again they will differ mainly in their output-power specifications.

If your budget is limited but you want a good tuner section, you need to spot the point in the receiver line at which the manufacturer switched to the better tuner circuit. You can do this by carefully studying the specifications. The better models in the line will generally have the same tuner specs, and the least expensive models will also usually have the same—but presumably poorer!—specifications. Once you have the models sorted into these two groups, you can get the better tuner section at the lowest price by choosing the least expensive receiver in the group with the better tuner specs. (For a guide to evaluating tuner specs, see my article in the February issue.)

Our example is somewhat oversimplified, of course, and you will often find some minor specification differences that may make one tuner (or amplifier) *seem* preferable. But keep in mind that *small* differences between two components in any *one* specification are rarely of even the slightest importance to the listening quality of an audio system. The difference between a 30-watt amplifier and a 40-watt one or between an amplifier with 0.2 per cent distortion and another with

TESTED THIS MONTH

ADS L1290 Speaker System
Carver AM/FM Receiver
B&O Beocord 5000 Cassette Deck
Wharfedale Diamond Speaker System
NAD 5120 Turntable

0.002 per cent. should not be the sole basis for making a choice. On the other hand, if the higher-power amplifier also has the lower distortion rating, it may well be a better product in other respects as well.

When shopping for a separate component, a tuner or an integrated amplifier, say, the same principles apply. The amplifiers in a single manufacturer's line (which will rarely be as extensive as a typical receiver line) usually differ in their power and distortion ratings as well as in their control flexibility and display features. Again, the thing to remember is that *small* specification differences do not matter very much, so don't be unduly influenced by a distortion reduction from 0.05 to 0.005 per cent (both levels are inaudible) or a power increase from 60 to 80 watts (a barely detectable 1.1 dB). You are more likely to find the prices of integrated amplifiers reflecting such things as the use of special components (low-noise resistors and high-quality capacitors, shielded transformers, and the like) in their construction, unique circuit designs that decrease noise and distortion, and sophisticated systems of output-stage protection.

Some products are difficult to evaluate on the basis of their specifications. An excellent example is the turntable, whose two key ratings are flutter and rumble (the latter is often stated as the signal-to-noise ratio, or S/N). These are both quite important, but until recently there have been no meaningful standards for measuring them; as a result, the numbers quoted by one manufacturer cannot be compared with those of another manufacturer. The choice of a turntable is often determined by its features (type of drive, degree of automation, type of tone arm). Even though there may be a considerable number of common design elements among the models in a single product line, there is no easy way to determine this, and a choice cannot be made as logically as in the case of a receiver.

Phono cartridges are almost in the same category. Frequency-response and channel-separation specifications (but not test measurements) are meaningless, for they tell the buyer nothing about how the cartridge will sound. Besides, the printed specifications for a cartridge are almost always at least "good" regardless of the unit's true performance.

Going from the least expensive to the

most expensive cartridges in a given line, you will find progressively more sophisticated stylus designs. The 0.6- or 0.7-mil conical stylus of the bottom-priced models, tracking at 2 to 3 grams, gives way to a 0.3 x 0.7-mil elliptical shape, with a tracking force usually about 1.2 to 1.4

SMALL DIFFERENCES
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grams, over most of the middle of the line. At the highest prices, line-contact styli are common, usually bearing the manufacturer's proprietary name. Often the same jewel tip will be available on cantilevers made of materials as diverse as various aluminum alloys, boron, sapphire, ruby, and even diamond; the more expensive materials reduce the moving mass and thereby raise the cartridge's resonance frequency well into the ultrasonic range.

As with receivers, the overlap in cartridge features is great, but it is not as easy to decide which special feature is the most important to you. Like a speaker, though not quite as dramatically, the cartridge can have a real effect on the sound you hear, which means that it should be chosen on the basis of your listening judgment, or at least that of someone whose opinion you value. "Specs" really don't matter much here.

Finally, my advice is *never* to buy a speaker on the basis of the manufacturer's specifications or features. A three- or four-way system is not necessarily better than a two-way system, a large enclosure is not necessarily better than a smaller one, there is no inherent superiority to either a sealed or vented enclosure, a specific cone material is not necessarily better than another, and so forth. With speakers, you have to listen for yourself and let *your* ears and your budget be your guides. □

Test Reports begin on page 21



"We do have Haydn's Schoolmaster Symphony and also his Philosopher Symphony, but I'm afraid I'm not familiar with his Voyeur Symphony . . ."

AUDIOPHILE FILE™ XL-S

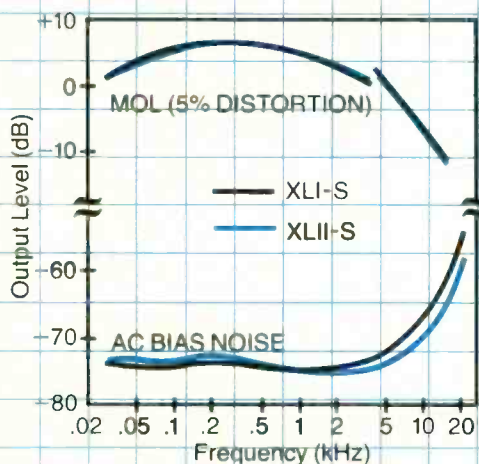
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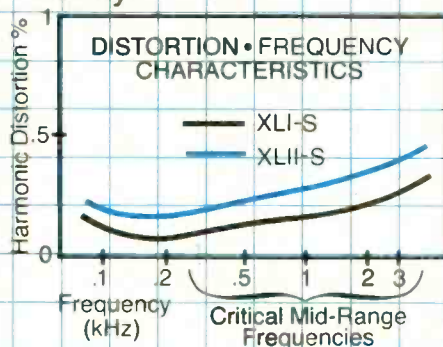


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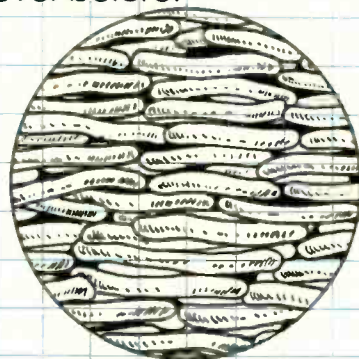
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CIRCLE NO. 27 ON READER SERVICE CARD

Equipment Test Reports

Hirsch-Houck Laboratories: Julian D. Hirsch and Craig Stark



Color photos by Roy Schneider

ADS L1290 SPEAKER SYSTEM

HIRSCH-HOUCK
LABORATORIES

THE ADS L1290, the next to largest speaker in the company's current line, is a three-way, vertically aligned columnar system. Its two 8.3-inch woofers are in acoustically separate enclosures approximately in the center of the column. Above them are a 2-inch soft-dome midrange driver and a 0.75-inch soft-dome tweeter (which has ferrofluid in its magnetic gap for damping and heat-transfer). The crossovers are at 500 and 5,000 Hz with 12-dB-per-octave slopes. The rated axial frequency response of the system is 40 to 27,000 Hz \pm 3 dB. The rated sensitivity is 90-dB sound-pressure level (SPL) measured at 1 meter with an input of 2.83 volts of pink noise in a typical living room. The nominal system impedance is 8 ohms.

At the bottom rear of the cabinet is a removable panel fastened by Allen screws (an Allen wrench is provided). Behind it is a cavity containing the speaker's four binding-post terminals, separate tweeter and midrange fuses, a slide switch that reduces the tweeter level by up to 1.5 dB,

and another switch that electrically separates the woofers from the other drivers for biamplified operation (in which case the extra two binding posts are used). A separate biamplifier/crossover module (the PA1) that will be available soon fits into this cavity and converts the L1290 to a powered speaker with 130 watts for the woofers and 70 watts for the midrange and tweeter.

The cabinet of the L1290 is 42 inches high, 10½ inches wide, and 12 inches deep, or 13 inches including the removable perforated-steel grille. An optional base (F12) improves the speaker's stability when it is placed on a carpeted floor. The front of the cabinet has beveled edges that, together with the flush-mounted drivers and the frameless grille, help to minimize diffraction effects. It is available with either a textured black urethane finish or veneered in lacquered walnut. Each system weighs 75 pounds and comes in a handle-equipped carton.

Price: ADS L1290, black, \$629.50 each; walnut veneer, \$649.50. Prices of F12 stand and PA1 module to be announced. Analog & Digital Systems, Inc., Dept. SR, One Progress Way, Wilmington, Mass. 01887.

● **Laboratory Measurements.** The on-axis frequency response of the ADS L1290, measured at 1 meter with our IQS FFT analysis system, was flat within \pm 3 dB from about 1,000 to 27,000 Hz. The

response in the woofer range was measured separately with close microphone spacing to prevent room-interaction effects. The output was at its maximum at about 55 Hz and sloped down at higher and lower frequencies. We did not attempt to splice the two curves, but it was apparent that system response was unusually uniform, almost certainly within the specified \pm 3-dB limits from 40 to 27,000 Hz. Not only is this the widest and flattest response we can recall measuring from a speaker with our current test procedures, but its perfect consistency with the manufacturer's ratings is so unusual for a speaker as to be virtually unique.

The sensitivity of the L1290 was 90 dB, as rated, and its polar response was exceptionally wide. The difference between the on-axis response curves and those measured 45 degrees off axis was no more than 3 dB up to about 15,000 Hz. In view of the flatness of the measured frequency response, we were also not too surprised to find that the group delay was constant within about 0.2 millisecond from about 1,500 to 20,000 Hz, changing by no more than 1 millisecond at lower frequencies. The actual system impedance measured between 4 and 12 ohms from 20 to 20,000 Hz, so we would describe the L1290 as a 4-ohm system. Finally, the woofer distortion was perhaps the lowest we have yet measured, under 1 per cent from 100 to 55 Hz, only 2 per cent at 35 Hz, and 3.7 per cent at 30 Hz. These measurements were made with a 2.83-volt drive level, which corresponds to that needed for a 90-dB SPL in the midrange. They closely agree with test data on the same units provided for us by ADS, although distortion is not included in the published specifications.

We also made another test on this speaker, one not previously part of our procedure but likely to be used in the future where it is appropriate. The claim of "digital readiness" is being made these days for every type of component from connecting cables to speakers. More often than not, this is either a rhetorical exaggeration or simply meaningless. In our view, a "digital-ready" speaker must be able to deliver a linear, undistorted output when driven by the kind of brief but extremely powerful signals that are present in live music and in well-made digital recordings. To test this in the case of the ADS L1290, we used "single-shot," 4-cycle tone bursts at frequencies of 100, 1,000, and 10,000 Hz, which fall within the operating ranges of each of its drivers. The acoustic output picked up by our test microphone was viewed on an oscilloscope, and we increased the test-signal level until clipping or other distortion was visible. At that point we measured the amplitude of the tone burst on the os-

Test Reports

cilloscope. Sound levels during these tests got *very* high; the pulses sounded like gunshots.

This test was made possible by the availability of a Carver M1.5t amplifier, currently the most powerful amplifier offered for home use. Even so, at the two higher frequencies the amplifier clipped before the speaker did, at outputs of about 100 volts rms, equivalent to 1,000 watts at 1,000 Hz and 2,500 watts at 10,000 Hz. Only the woofer could be overdriven before the amplifier clipped, at 70 volts or 1,200 watts at 100 Hz. (Note that these wattage figures are not actual power readings but simply calculated from the square of the voltage divided by the measured impedance at the test frequency. Such figures can be useful,

however, for relating a speaker's sound-producing capability to the available amplifier output.)

● **Comment.** It is generally appreciated that "good" measurements do not necessarily correlate closely with good sound quality, and vice versa, making it desirable to judge speaker quality by using a combination of objective and subjective methods. After only a brief exposure to the ADS L1290's in our listening room, however, we had no doubt of their superior sound quality. The subsequent validation of this judgment by our test instruments was a reassuring demonstration that *sometimes* speakers measure the way they sound!

The L1290 has an unusually flat and

smooth response over the full audio range and a half octave beyond, excellent dispersion in the forward hemisphere, and bass distortion lower than that of any common program source except a digital tape or disc. It is a genuinely fine speaker that is representative of the current state of the art in dynamic speaker-system design. When you listen to it, you might or might not notice anything "special" in its sound, but I very much doubt that anyone with an open mind and a pair of functioning ears will find anything significant to criticize in it. I have no hesitation in voicing my own enthusiasm for the L1290. And, as we found out, this is one speaker that really is "digital ready."

—Julian D. Hirsch

Circle 140 on reader service card



CARVER AM/FM RECEIVER

HIRSCH-HOUCK LABORATORIES

CONSIDERING the unusual design and performance qualities of Carver Corporation's TX-11 FM tuner and "Magnetic Field" amplifiers, combining the two into a receiver would seem to be a logical step. Carver apparently came to the same conclusion. The result is called, simply, "the Carver Receiver," which might seem to imply a permanently unique status for it as *the* receiver in the Carver line. Whether that proves to be the case or not, it certainly is unique in its overall performance.

The audio-amplifier section of the Carver receiver is rated to deliver 130 watts per channel into 8-ohm loads from 20 to 20,000 Hz with no more than 0.05 per cent distortion. The receiver has FM and AM tuner sections, and there are inputs for a single magnetic phono cartridge and two additional high-level sources. It has provisions for connecting two tape decks and dubbing from either machine to the other without disturbing normal receiver operation. Other front-panel knobs are for the three tone controls (bass, midrange, and treble), balance, a speaker selector (for two pairs of speakers), and volume.

Small pushbuttons control tone defeat and FM mute, select mono operation, and engage a low-pass filter (marked AM FILTER on the panel—most companies call this a high filter). Two horizontal rows of LED's display the instantaneous output of each channel, with high or low ranges selected by a button below them (which doesn't, however, indicate which range corresponds to which position). A headphone jack is located below the pushbutton power switch, and there is a loudness button between the volume and balance controls.

The FM tuner section uses an Asymmetrical Charge Coupled Detector, which is Carver's name for a unique audio-signal processor that reduces audible multipath distortions and the hiss level on weak stereo signals without sacrificing stereo separation. This is accomplished by synthesizing the L - R difference component of the stereo modulation, which provides the stereo directionality. The original difference signal is responsible for most of the noise in stereo FM reception. The synthesized difference signal is relatively noise-free. The circuit is turned on by pressing a button marked ENGAGE. Pressing another button to its right that is marked NOISE/NOISE + MULTIPATH is said to improve performance even more in these areas. (The operation of this system was described in some detail in our review of the Carver TX-11 tuner in the December 1982 issue. It has been modified for the receiver to give comparable performance at a lower circuit cost.)

The Carver Magnetic Field amplifier, several models of which have been reviewed here over the past few years, uses a signal-tracking power supply to provide the output transistors with a d.c. operating voltage just large enough for them to handle the instantaneous signal amplitude. This greatly reduces the average power and heat dissipation in the output transistors and power supply, thereby providing substantial economies of size, cost, and weight in those portions of the amplifier.

The tuning controls and the amplifier input selectors are light-touch buttons grouped around a display window containing the digital frequency readout, signal-strength and stereo indicator lights, and a LOCKED light that comes on with the reception of a correctly tuned signal. The tuner frequency (either FM or AM) is shifted up or down by pressing the corresponding button. Either AUTO or MANUAL operation can be selected by other buttons. In the former mode the tuner scans until a signal is acquired; in manual it moves the tuned frequency by 0.1 MHz or 10 kHz with each touch or scans rapidly if the tuning button is held in. There are six station memories, each usable for an FM and an AM frequency, and a MEMORY SET button for storing them.

The rear of the Carver receiver contains phono jacks for the signal inputs and outputs as well as separate PRE OUT and MAIN IN jacks joined by removable jumpers. There are binding posts for 300- and 75-ohm FM antennas and a wire AM antenna. A pivoted ferrite-rod AM antenna is mounted on the rear panel along with insulated binding posts for two pairs of speakers and two a.c. convenience outlets (one of them switched).

The Carver receiver measures 17½ inches wide (or 19 inches with the furnished rack-mounting adaptors), 17 inches deep, and 5¾ inches high, and it weighs 25 pounds. It is attractively finished with a gun-metal gray panel and a black enclosure. Price: \$699. Carver Corp., Dept. SR, P.O. Box 664, Woodinville, Wash. 98072.

● **Laboratory Measurements.** The receiver's Magnetic Field power-amplifier section is thoroughly protected against

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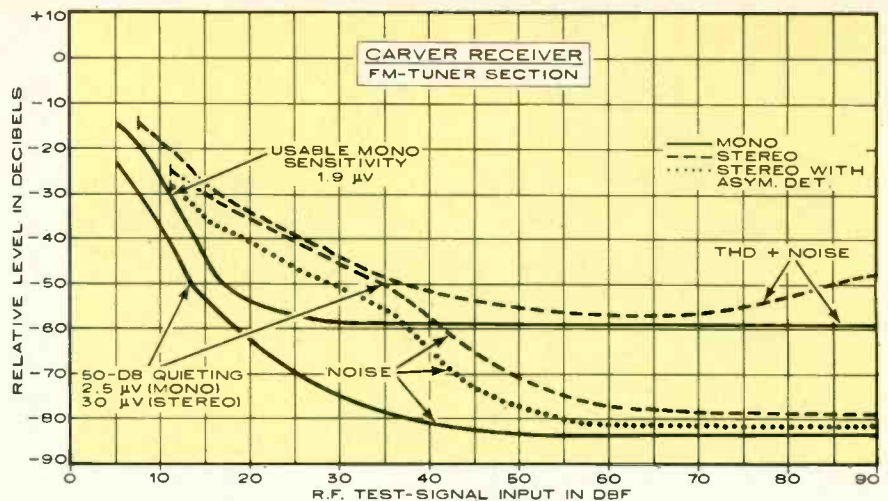
damage from overdriving, excessive output-current demands, or overheating from sustained continuous-drive operation. Since it does not have the usual current-limiting circuits, it is able to deliver very large signal currents to low-impedance loads. During the 1-hour preconditioning period, with both channels delivering 40 watts into 8-ohm loads at 1,000 Hz, the internal circuitry became hot enough for the unit's thermal-protection system to shut it down, but it resumed operation automatically when it had cooled. The 1,000-Hz output at clipping was 176 watts per channel into 8 ohms, 264 watts into 4 ohms, and 313 watts into 2 ohms, giving a clipping headroom of 1.32 dB. Little additional output was available during the 20-millisecond tone bursts of the IHF dynamic-headroom measurement; the 8-ohm dynamic power output was about the same as the clipping power, and the 4- and 2-ohm dynamic outputs were 272 and 356 watts per channel, respectively.

The distortion ratings of the Carver receiver's amplifier section proved to be quite conservative. With both channels driving 8-ohm loads, the distortion was less than 0.005 per cent from 1 to more than 100 watts output, reaching only 0.01 per cent at 150 watts. With 4-ohm loads, the distortion was 0.007 to 0.01 per cent between 1 and 90 watts, rising to about 0.03 per cent in the 150- to 200-watt range. With 2-ohm loads, the distortion was 0.01 to 0.02 per cent up to 30 watts, reaching 0.1 per cent in the 200- to 250-watt range and 1.74 per cent at 300 watts. Because of the rapid internal heating, high-power measurements at 2 ohms had to be made quickly, with only one channel driven. Nevertheless, the receiver suffered no ill effects from the abuse it received during our tests.

Measured at the rated 130 watts or less into 8-ohm loads, distortion was between 0.003 and 0.01 per cent from 20 to 4,000 Hz, increasing to about 0.025 per cent at 20,000 Hz. The amplifier section was stable with complex reactive simulated-loudspeaker loads, but it showed the typical overshoot and ringing on high-frequency square-wave signals. Its slew factor was about 2.5, with slight second-harmonic waveform distortion appearing on an output signal of 130 watts at about 50,000 Hz. The protective system shut the amplifier off instantly when excessive high-frequency current was fed to our test loads.

We measured a sensitivity of 20 millivolts (mV) for a reference power output

The Carver receiver's Asymmetrical Charge Coupled Detector tuner circuit board can be seen below the herringbone-shaped power-amplifier heat sink. Above the heat sink is the circuitry for the power-amplifier and power-supply sections.



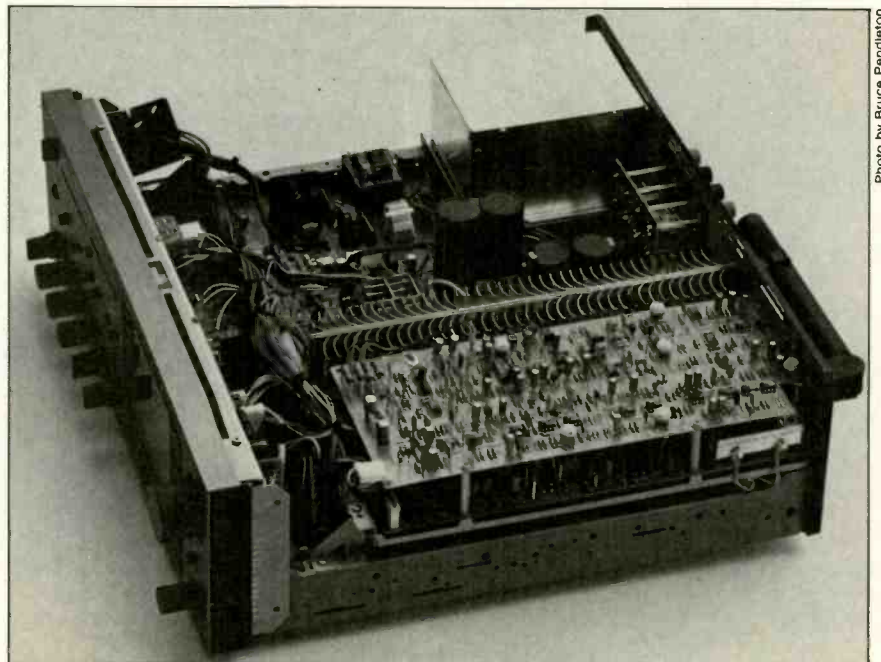
of 1 watt through the preamplifier section's high-level inputs, with an A-weighted signal-to-noise ratio (S/N) of 78 dB. The phono sensitivity was 0.26 mV, with a 76-dB S/N. The phono preamplifier overloaded at 150 to 160 mV, depending on frequency. The phono input impedance was a 47,000-ohm resistance in parallel with a 110-picofarad capacitance.

The tone controls had a moderate range, about ± 10 dB at the frequency extremes and ± 6 dB in the midrange. They had relatively subtle effects but were able to provide useful modification of the very low or very high frequencies. The loudness compensation boosted only the low frequencies, beginning at about 100 Hz, and imparted solidity to the program at low or moderate levels without the usual unnatural heaviness. The AM FILTER introduced a 6-dB-per-octave slope above 2,000 Hz. Its principal effect was to make the Carver AM tuner sound much like ordinary AM tuners, perhaps explaining why it is called an "AM filter" instead of a "high filter."

Carver went to considerable lengths to

make the phono preamplifier of this receiver as nearly ideal as possible, and the effort is reflected in the accuracy of its phono equalization, which was flat within ± 0.3 dB from 20 to 20,000 Hz. (The minute deviation may well represent only the errors in the inverse-RIAA pre-equalizer we use for this measurement.) Moreover, the response of the phono section was totally unaffected by the inductance of the cartridge connected to it.

The FM-tuner section of the Carver receiver delivered above-average performance even with its Asymmetrical Detector circuit disabled. Like the Carver TX-11 tuner, and unlike practically every other tuner and receiver on the market, this tuner does not switch into mono at low signal levels to avoid excessive noise. The usable sensitivity in mono was 10.8 dBf (1.9 microvolts, or μV), and in stereo it was 15.8 dBf (3.4 μV). The 50-dB quieting sensitivity was 13.2 dBf (2.5 μV) in mono and 35 dBf (30 μV) in stereo. With the special circuits active, the stereo 50-dB quieting sensitivity was 29 dBf (15 μV). The mono and stereo harmonic distortions at 65 dBf (1,000 μV) were 0.12





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and 0.15 per cent, respectively; the noise-reducing circuits had no significant effect on the distortion at that signal level. The S/N at 65 dBf was by far the best we have yet measured from a receiver and has been matched by only one or two tuners, each considerably more expensive than the entire Carver receiver! The readings—obtained with the special FM circuits off—were 83 dB in mono and 77.5 dB in stereo, both better than we thought possible from our FM signal generator.

The tuner frequency response was virtually ruler-flat from 30 to 10,000 Hz, rising only +0.7 dB at 15,000 Hz. Nevertheless, the 19-kHz pilot-carrier signal was reduced to a negligible -68-dB level. The stereo channel separation was 48 dB at 100 Hz, 35.5 dB at 30 Hz, and 38 to 39 dB from 8,000 to 15,000 Hz.

The AM tuner section of the Carver receiver was designed to give an extended high-frequency response relatively independent of the received radio frequency. (In most AM tuners, the selectivity of the antenna and r.f. amplifier circuits attenuates the high-frequency response of signals at the low-frequency end of the broadcast band.) While the AM frequency response was not as wide as we have measured on two or three of the best AM tuners we've tested (none of which is currently available), it was better than that of most other contemporary receivers and tuners, being essentially flat from 20 to 3,000 Hz and down 6 dB at 3,600 Hz. The audio frequency response was measured at AM-radio frequencies of 520 and 1,430 kHz; the difference between the two was less than 1.5 dB in the 1,000-

3,000-Hz audio range. According to Carver, the high-frequency rolloff in the AM tuner's response was introduced deliberately to compensate for the dynamic pre-emphasis that is commonly used by AM broadcasters. The tuner's response is intended to make it *sound* flat rather than *measure* flat.

● **Comment.** It is unfortunate that space limitations prevent us from describing all the novel circuit-design features of the Carver receiver. Suffice it to say that it is as different from most other receivers in its circuitry as in its appearance and performance.

We found that the Asymmetrical Charge Coupled Detector in the receiver was not quite as dramatically effective as the one in the Carver TX-11 tuner we tested earlier. Nevertheless, it made a worthwhile improvement in the listenability of weak stereo signals with no undesirable side effects, and that is no small achievement. Our slight disappointment in this area was more than compensated for by the superb overall performance of the tuner, especially its extremely low noise level, which established a new reference "noise floor" for our Sound Technology signal generator. The AM tuner sounded better than most, although still a far cry from "hi-fi." There was a heaviness in its bass that was not fully balanced by the very good high end. Then again, the tone controls improved the AM sound more than they have in other receivers we have used, many of which have an AM quality that is simply beyond redemption.

The Carver Magnetic Field amplifier designs continue to impress us with their seemingly limitless reserves of clean audio power. We know of no other receiver that can even approach this one in power capability. The few with similar ratings achieve similar performance only into 8-ohm loads, weigh about twice as much as the Carver, and cost much more. In normal use—reproducing musical program material at any level—the Carver receiver runs only mildly warm. It has an amusing idiosyncrasy in the form of occasional grunts and groans from the power-supply section when it is called on to deliver an unusually large current. Fortunately, these sounds are not noticeable when the receiver is used to play music through speakers, though they are hard to overlook during a bench test using dummy loads and test signals.

I do not, as a rule, refer to any component as the "best" of its type. I do feel safe, however, in saying that I consider the Carver receiver to be the "most" receiver I have yet tested in terms of the quantitative and qualitative superiority of almost all its basic functions. One might assemble a slightly better tuner and a more powerful amplifier as separate components—at a much higher cost—but anyone who is not prejudiced against receivers as a class could hardly do better than to select Carver's. On second thought, perhaps this unit will remain the Carver receiver for the foreseeable future. Certainly it would be difficult to make any worthwhile improvements in its performance.

—Julian D. Hirsch

Circle 141 on reader service card



B&O BEOCORD 5000
CASSETTE DECK

HIRSCH-HOUCK
LABORATORIES

SLIM of line and with the graceful Scandinavian styling that has traditionally marked Bang & Olufsen's products, the Beocord 5000 two-head cassette deck offers a distinctive alternative to the appearance and operation of the typical Japanese-built recorder. B&O's innovative design approach also extends to the deck's electronic section, which, besides such standard circuit features as Dolby-B and Dolby-C noise reduction, incorpo-

rates the HX Professional headroom-extension system.

Developed in close association with Dolby Laboratories, B&O's HX Pro is not a noise-reduction system but rather a method of increasing the high-frequency storage capacity of a cassette tape. The basis for its operation lies in the discovery that high-level treble signals are to some extent "self-biasing." That is, when the music being recorded contains a large high-frequency content, the tape behaves as if someone had actually turned the bias control up slightly. When this effect is combined with the bias supplied by the recorder, the tape becomes overbiased, reducing its treble capacity. In functional terms, what HX Pro does is to lower the regular bias component slightly at just those moments when the musical signal is itself supplying some bias to the tape, thus keeping the bias level constant. The system is demonstrably effective in its intended aim of increasing high-frequency headroom.

The drive system of the Beocord 5000 is straightforwardly constructed. The deck uses a single capstan, which is belt-driven by a d.c. servomotor. The same motor powers the fast-winding operations as well. A hardened permalloy head is used for both recording and playback. But while these aspects of the transport are conventional, its operation certainly is not. (Continued on page 29)

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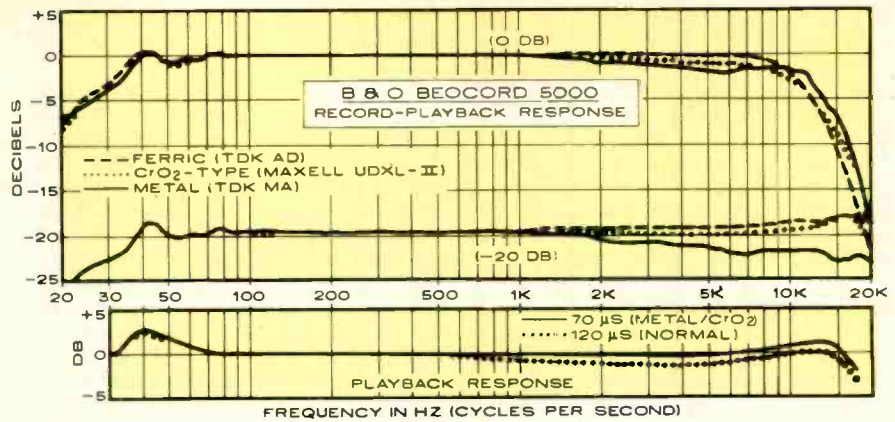
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CIRCLE NO. 23 ON READER SERVICE CARD

When the Beocord 5000 is not in use, there are no visible switches or controls at all. As long as it is connected to an a.c. power source, however, it is not turned fully off but remains in a standby condition. Pressing the lower left corner of the front plate (marked OPEN) causes the entire transport section to slide forward, rather like a self-opening dresser drawer, exposing the cassette well and the controls. At the same time a four-digit electronic tape counter in the front panel is illuminated, as are the letters L and R to identify the left- and right-channel record-level indicators.

Unlike almost all other hi-fi cassette decks today, the Beocord 5000 loads cassettes into its well from the top, not the front. This enables the deck to have a very low profile, though it makes loading and unloading cassettes slightly more difficult (especially since there is no eject button). Because there is no separate top cover—the transport section retracts into the main unit when OPEN is pressed again or when the deck is left open and unattended for more than thirty minutes—access to the heads and capstan roller for cleaning and demagnetizing is unusually easy. Bias and equalization switching for ferric, high-bias, and metal tape types is automatic; there are no manual switches or user-adjustable controls.

To the right of the cassette well are twelve pushbuttons that control the transport functions. For the most part these are standard, though much of their nomenclature and some of their operations are not. For example, to make a recording it is necessary first to press the REC. OPEN button, then the RECORD button twice. Pressing STOP will not immediately stop the tape at this point: a 4-second blank space is automatically inserted unless the STOP button is hit twice. The ADVANCE and RETURN buttons permit skip-



The upper curves indicate overall record-playback response at the manufacturer's indicated 0-dB recording level using the tapes designated on the graph. In the center are the same measurements recorded at -20 dB relative to the upper curves, a level conventionally used for tape-deck frequency-response measurements. Bottom curves show playback response with calibrated test tapes.

ping ahead or going back by up to eight selections on a side (as determined by blank intervals). MEMO. SET, MEMO. GO, and START GO are used for the usual memory-rewind functions. All of the buttons, which have no illuminators, are mounted nearly flush with the panel—so close, indeed, that we experienced difficulty in consistently activating them.

To the left of the cassette well are separate record-level slide controls for each channel and two three-position switches. One switch is used for noise-reduction selection, and the other selects line, microphone, or AUX inputs. The AUX input works only with matching B&O components or other European equipment using DIN connectors. No provision is made for playback-level control or headphone listening. Astonishingly, we found that there is no monitor circuitry: except dur-

ing tape playback no signal is returned to the preamplifier or receiver. The monitor switch on your amplifier must be set for SOURCE instead of TAPE in order to listen to the music while recording.

Recording levels are shown by two eight-segment LED indicators on the front panel. In addition to reading peak rather than average signal levels, these indicators are equalized, meaning that they reflect the treble and bass boost that is applied to all signals before they reach the record head. This is certainly the most accurate way to prevent treble saturation of a tape. There are no decibel markings on the LED indicators, though the lights turn from green to red at a point that the manual identifies as "0 dB," which we found is set at the Dolby calibration level of 200 nanowebers per meter at 400 Hz.

All connections to and from the Beocord 5000 must be made with adaptors that mate with the unit's DIN-type sockets. One phono-plug adaptor is supplied; it consists of a DIN connector at one end of four 6-inch cables terminating in unmarked phono plugs whose identity must be learned by trial and error. Even the microphone jack, which can accept two microphones (with the right adaptors), uses a DIN connector. No connections are made to the rear panel of the deck since the DIN connector for its normal inputs and outputs is at the end of a permanently attached 1-meter cable. When we first looked at the rear of the Beocord 5000, we were concerned to see exposed power-supply circuit boards within easy finger reach through the ventilation holes. The deck is approved by Underwriters Laboratories, however, so it meets their rules regarding shock hazards. It still doesn't seem like a good idea to have live circuit boards so easily accessible.

Overall, the Beocord 5000 measures 16½ inches wide, 12¾ inches deep when closed or 17 inches deep when the drawer containing the transport mechanism and controls is slid out, and 3 inches high. It weighs 18½ pounds. Price: \$695. Bang & Olufsen of America, Ltd., Dept. SR, 1150 Feehanville Drive, Mt. Prospect, Ill. 60056. (Continued on the next page)



Test Reports

● **Laboratory Measurements.** The data supplied with our sample of the Beocord 5000 indicated that the unit had been adjusted using TDK AD (ferric), Maxell UDXL-II (high-bias), and TDK MA (metal) tapes, so we used these for our measurements. Similar high-quality tapes would have yielded almost identical results. The playback response of the unit was checked with IEC-standard calibrated tapes from BASF. Except for an inaudible "head bump" of 2.5 dB at 40 Hz, it was very flat (less than 2 dB total variation) out to 16,000 Hz. At 18,000 Hz the response was down 2.5 dB with the 70-microsecond (chrome/metal) tape and 3.5 dB with the 120-microsecond (ferric) tape.

At the -20-dB level used for overall frequency-response measurements, response for all three tape types was within ± 2.5 dB from approximately 32 to 20,000 Hz. At the IEC 0-dB level (250 nWb/meter), the response was again remarkably uniform among the three tape types. Normally, metal tapes show markedly better resistance to high-frequency saturation (overload) than chrome or ferric types do. In this case, however, thanks to the built-in HX Professional headroom-extension system, the performance of all three types was essentially the same, since the system "helps" the lower-coer-

civity tape types proportionally more than it does the high-coercivity metal variety.

Recordings made at the deck's "0-dB" level with TDK AD, Maxell UDXL-II, and TDK MA showed third-harmonic distortion of a 315-Hz tone of 0.7, 2.4, and 1.2 per cent, respectively. (The input level to the CrO₂-equivalent Maxell UDXL-II had to be raised by 1 dB, until the first red LED lit up, in order to produce a 0-dB recorded output, which probably accounts for that tape's higher distortion.) At the 3 per cent third-harmonic distortion point, the recorded output levels were +3.6, +1, and +3.8 dB for AD, UDXL-II, and MA, respectively. The resulting signal-to-noise ratio (S/N) measurements, unweighted and without noise reduction, were 49.8, 50.7, and 52.8 dB. With Dolby-B and IEC A-weighting these figures improved to 65.6, 65.1, and 66.8 dB, respectively. A-weighted S/N's with Dolby-C measured 68.5, 69.5, and 71.8 dB. The B&O specs use CCIR-weighted rather than A-weighted curves, and thus show higher S/N's with Dolby-C: 72, 74, and 73 dB, respectively, for the three tape types. We confirmed these claims, measuring 75.3, 74.2, and 75.2 dB for CCIR-weighted S/N's.

Wow-and-flutter from the Beocord measured 0.03 per cent wrms and 0.05

per cent DIN peak-weighted, which is unusually good for a single-capstan design. Fast-forward and rewind times, however, were slow: 107 seconds for a C-60 and 155 seconds for a C-90 cassette. Tape speed was only 0.4 per cent slow, which is negligible for almost all listeners. Line input sensitivity for a 0-dB indication was a very normal 58 millivolts (0.058 volt), with an output of 530 millivolts at this level.

● **Comment.** Whether you consider the styling of the Beocord 5000 attractive is a matter of taste. We cannot, however, but admire the originality of the design. And certainly the unit did a very good job in both recorded and playing back music of various types. The HX-Professional system *does* extend high-frequency headroom, as claimed, and we could detect no undesirable sonic side effects of its operation. We are still mystified why such a beneficial development has not appeared on more recent tape decks. While it is always possible, using digital Compact Discs, to find musical passages that not even Dolby-C can handle without some residual tape hiss (provided one is listening at an elevated level), we were very pleased with the sonic performance of the Beocord 5000. —Craig Stark

Circle 142 on reader service card



WHARFEDALE DIAMOND SPEAKER

HIRSCH-HOUCK LABORATORIES

THE Wharfedale Diamond is a miniature speaker system designed to operate on a stand or shelf placed close to a wall. It is a two-way system with a 4-inch woofer and a 0.75-inch tweeter. The wooden cabinet, finished in walnut-grain vinyl, is only 9 $\frac{3}{8}$ inches high, 7 $\frac{3}{8}$ inches wide, and 7 $\frac{3}{4}$ inches deep.

The woofer, which has a "mineral-filled-polypropylene" cone (the material is a composite of chalk and polypropy-

lene), actually operates over the full audio-frequency range, but above 5,000 Hz its output is supplemented by that of the tweeter. The tweeter dome itself is only 0.4-inch in diameter, but it is front-loaded by a plastic structure that flares out to a $\frac{3}{4}$ -inch diameter.

The most unusual aspect of the Diamond's design, however, is the fifth-order reflex loading of the woofer, which has a rear-panel port about 1 $\frac{3}{16}$ inches in diameter. The rated system response is 50 to 20,000 Hz, but the manufacturer emphasizes that its overall frequency balance and its bass performance are critically dependent on the speaker's placement relative to the wall behind it. The tuning of the port is a function of its distance from the wall, which in general should be between $\frac{1}{2}$ and 3 inches. The spring-loaded input connectors are recessed into the

back of the speaker cabinet and do not prevent placing it close to the wall.

The nominal impedance of the Wharfedale Diamond is 8 ohms, and its sensitivity is rated at 86 dB at 1 meter for a 1-watt input in free space (it should be 2 to 3 dB higher when the speaker is against a wall). The Diamond is suitable for use with amplifiers delivering between 25 and 75 watts, and it is rated to handle up to 75 watts of program material.

Price: \$95 each. Wharfedale Loudspeakers, Dept. SR, Five Rockford Drive, West Nyack, N.Y. 10994.

● **Laboratory Measurements.** Our FFT frequency-response measurements on the Diamond were made with the speaker placed on a stand, several feet from a wall and about 2 feet from the floor. The axial frequency response had minor peaks and dips, principally between 8,000 and 18,000 Hz, but its overall response, ± 5.5 dB from 500 Hz to 22,000 Hz, is certainly creditable performance. The dispersion was good, with less than 3 dB difference between the axial and 45-degree frequency-response curves up to 4,000 Hz and a typical spread of 6 to 8 dB at higher frequencies. The group delay was constant, varying no more than 0.25 millisecond from 1,000 to 23,000 Hz.

A meaningful measurement of the woofer response was not possible since the contribution of the port was dominant below about 150 Hz, but it was clear, as the manufacturer stated, that the bass output was profoundly affected by the speaker's distance from a rear wall. The woofer-cone response was quite close to Wharfedale's measurements on the same test units, down about 5 dB from the mid-

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Test Reports

range level at 100 Hz and 15 dB at 40 Hz. Summing the port and cone outputs yielded an unreasonably extended response (down to 30 Hz or lower!), but this was not consistent with our other findings or the claimed performance.

The minimum impedance of the system was 6.5 ohms, and its sensitivity was 88 dB. When we drove it with 3.6 volts (equivalent to a midrange output of 90 dB), the distortion in the cone output was between 1.5 and 2.5 per cent from 100 to 55 Hz, rising sharply below the latter frequency, which we would consider the system's low-frequency limit. This is roughly what we would expect from a speaker of this size. The measured port distortion was very large, but it was not at all consistent with the quality of sound heard on program material.

● **Comment.** For our listening tests, we placed the Wharfedale Diamonds at ear level about 1/2 to 1 inch from the wall. The

most striking thing about their sound was that, without seeing them, no one would ever suspect that he was not hearing full-sized speakers. More than one visitor in our listening room was sure that one of the larger systems in the room was playing and had to go up to the Diamond speakers to confirm they were in use.

The octave-to-octave balance of the Diamond speakers is such that they have an "all-together" sound, neither shrill and thin nor boomy and tubby. Of course, an A/B comparison with speakers having a more substantial bass output tends to weaken the illusion, but the fact remains that the Diamond is a mini-speaker in size only.

The bass response (and, to some extent, the overall balance) of any speaker is a function of its relationship to the walls, floor, and ceiling of the room. Many speaker manufacturers prefer to ignore this fact, but Wharfedale emphasizes it and points out the advantage of being

able to tailor the speaker's sound by small changes in placement, a procedure that is made eminently practical by the Diamond's small size and weight. The Diamond is not likely to be the speaker of choice for hard-core audiophiles (at least for a main system), and the laws of physics do make it impossible for a 4-inch driver to match the performance of a 8- or 10-inch cone. But the other side of the coin is that those same laws also make it impossible for the larger cone to match the middle- and high-frequency response and dispersion of the smaller one.

There have been (and are) many very small speaker systems that claim hi-fi performance. Few have been able to make good on that claim. The Wharfedale Diamond is a high-fidelity speaker by any reasonable interpretation of that term. Within the constraints of its size and cost, it is an aptly named little gem.

—Julian D. Hirsch

Circle 143 on reader service card



NAD 5120 TURNTABLE

HIRSCH-HOUCK LABORATORIES

THE NAD 5120 combines a semiautomatic, two-speed turntable with a novel "floppy" tone arm; both are designed to provide superior isolation from external shock and spurious vibrations. The platter, a light stamped-aluminum

disc, is belt-driven at fixed speeds of 33 $\frac{1}{3}$ or 45 rpm by a low-speed (360-rpm) synchronous a.c. motor. Speed is changed by a knob on the motorboard that shifts the belt to a different pulley diameter. A thick and unusually heavy rubber mat fits snugly over the platter (the two have a combined weight of 2 $\frac{1}{4}$ pounds).

The tone arm is a flat, $\frac{1}{16}$ -inch-thick strip of phenolic material similar to that used for printed-circuit boards. There are elongated slots in the front end for mounting and positioning a cartridge; the other end of the arm carries an adjustable counterweight whose position is shifted (after arm balancing) to provide a cali-

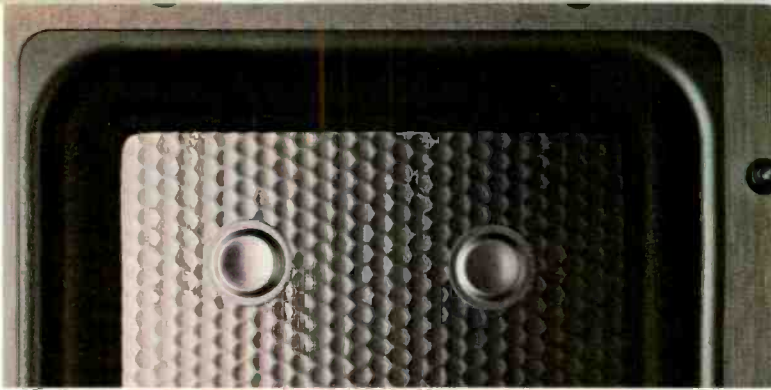
brated vertical tracking force of up to 3 grams. The tone arm's internal "wiring" consists of four embedded copper conductors terminating in a four-pin plug that fits a socket in the arm's support post. Since the arm has no removable headshell, the entire arm is unplugged for cartridge installation and many of the set-up adjustments.

The counterweight, in addition to being movable along the axis of the arm by a rack-and-pinion mechanism, is free to pivot vertically to some degree against the force of a compressed spring. This Dynamic Vibration Absorber, or DVA, can be tuned by a screw that varies the spring pressure in order to make the counterweight system resonate out of phase with the main arm/cartridge resonance frequency, thus reducing the amplitude of the resonance. In addition, attached to the counterweight is a small dashpot containing a damping fluid into which a rod connected to the arm system can be lowered by means of a small adjusting screw. This provides a controllable degree of damping of the arm resonance (the amount required depends on the inherent damping in the cartridge/stylus system) that further reduces its amplitude. The arm and platter are rigidly coupled through a mounting plate, with the entire system floated on soft springs attached to the dark-gray, molded-plastic motorboard and base. The resonance frequency of the arm/platter/spring system is below 4 Hz.

Aside from the speed selector and an antiskating dial on the motorboard, the only control on the NAD 5120 is a combination arm-lift and start/stop switch knob on the front edge of the base. It simultaneously turns on the motor and lowers the tone arm or lifts the arm and shuts off the motor. In addition, at the end of a record side the arm lifts and the motor shuts down automatically. The NAD 5120 is supplied with a nearly opaque black, hinged plastic dust cover. The unit is 16 $\frac{1}{2}$ inches wide, 14 inches deep, and 4 $\frac{1}{8}$ inches high, and it weighs



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Test Reports

11 pounds. Price: \$248. NAD (USA), Dept. SR, 675 Canton Street, Norwood, Mass. 02062

● **Laboratory Measurements.** We installed a Shure V15 Type V cartridge in the tone arm of the NAD 5120 for our tests. To perform the full range of necessary setup adjustments requires considerable patience. Although the procedure is not especially difficult, it is cumbersome and time consuming, involving numerous insertions and removals of the plug-in arm and observations of the resonance frequency. Fortunately, the detailed instructions include a simplified procedure with tabular and graphic information on almost all cartridge models likely to be used in this arm. This reduces the number of arm-removal operations, but the process is still more involved than the setup for most other record players.

When we balanced the arm as carefully as possible, the calibrations of the tracking-force dial were in error by a not too significant 10 per cent (the actual force being less than the indicated value). The tone-arm tracking error was difficult to measure because of the shape of the arm and the limited visibility of the edge of the cartridge body, but it was less than 0.4 degree per inch over most of the record area and never more than 0.67 degree per inch. (A computer analysis based on the specified arm dimensions confirmed these measurements.)

The playing speeds of the NAD 5120 were very slightly slow, by 0.7 per cent at 33 $\frac{1}{3}$ rpm and 0.2 per cent at 45 rpm. The JIS-weighted rms flutter was 0.08 per cent, and the DIN-weighted peak flutter was ± 0.12 per cent, both principally at frequencies below 5 Hz. The unweighted rumble was a very low -42 dB, principally between 20 and 30 Hz. With ARLL weighting, the rumble reading improved to -60 dB.

The tone-arm mass resonated with the V15 Type V cartridge stylus compliance at 9 Hz. This was measured with the cartridge's stabilizer disabled in order to make the resonance more visible, but it was still very well damped by the arm's DVA system. The effective arm mass

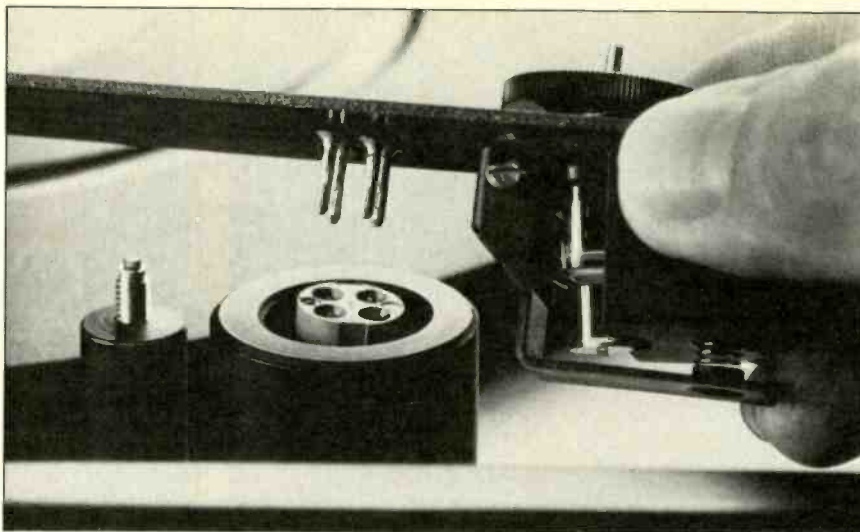


Photo by Bruce Pendleton

Tone arm of the NAD 5120. Left to right are the tone-arm lift, four-prong connector, anti-resonance dashpot, damping spring, and counterweight.

without the cartridge was about 12 grams. The capacitance to ground of the signal cables and arm wiring was about 175 picofarads per channel. The antiskating dial calibration was quite good, with the optimum setting being about 0.5 gram higher than the tracking-force setting.

The type of suspension system used in the NAD 5120 ordinarily gives exceptional isolation from external vibration. The measured base-conducted vibration isolation of the NAD 5120 was well above average, though it was not quite equal to the results we have obtained from some other turntables using similar suspension systems. The largest transmission mode was at 18 Hz, with a smaller response from 40 to 50 Hz. As usual, the isolation was best when the cover was lowered.

● **Comment.** Like most record players with a soft suspension resonating in the range of a few hertz, the NAD 5120 was well isolated from vibration conducted through its base but very bouncy in its response to normal handling. The stop/play control, unless operated with extreme

care, tended to shift the pickup outward, sometimes by a quarter-inch or more. It would be advisable to install this turntable on a rigid shelf or table to minimize jarring effects, but we would expect it to be relatively immune to airborne acoustic feedback.

The setup complexity of the NAD 5120 may be viewed as an asset by some—the perfectionist will be able to trim it as closely as his patience and hearing acuity will allow. And it should not deter others from choosing the turntable if it is otherwise suitable. The benefits, if any, of the full-length setup adjustment (as compared with the tabular “quick setup” procedure) are minuscule. We believe, however, that any degree of reduction in arm-resonance effects obtained by either method is worthwhile.

The question of whether the flat phenolic arm represents an improvement over conventional tubular metal designs is not easy to resolve from our measurements and use tests. Certainly the NAD 5120's arm has no obvious faults or weaknesses of any kind. (There were, for instance, no significant tone-arm resonances in the audio range of the sort that we have occasionally found in tubular tone arms.) And for those who might want to use different cartridges at different times, NAD sells additional arms for \$30, making it easy to change cartridges by merely plugging in a different arm with all the setup adjustments already made.

An interesting side note about the NAD 5120 concerns its source, which is Czechoslovakia. The flat arm was the concept of a Czech audiophile/inventor, and the turntable is manufactured in Czechoslovakia. To our knowledge it is the first hi-fi product from that country to be marketed in the U.S. In any case, like all the other NAD products, the 5120 is an “original,” distinctly different in design from others in the same category and offering features and values not found elsewhere. It is well worth looking at if you are in the market for a new turntable.

—Julian D. Hirsch

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THE COMPACT DISC BANDWAGON

The last of the majors,
EMI/Angel/Capitol,
has climbed aboard

BY CHRISTIE BARTER

WHEN stereo sound was new, record buyers delighted in listening to the volleys of invisible ping-pong players and to the passing of trains in their living rooms. Today, anyone with a Compact Disc player can evoke the sounds of a racquetball match (much trendier) and cause a jet plane to whip thunderously through his or her listening space. Such is progress.

A new release from Elektra called "The Digital Domain" (60303-2), a demonstration CD, starts off with fifteen seconds of absolute silence—which, ironically, *is* progress. Before the days of digital recording and playback now upon us, this would not have been possible. But it tells part of the CD story too, as does the rest of this disc. Its contents include examples of digital *recording* (that jet plane, the Pacific Ocean, a variety of exotic instruments, birds and beasts of the field, even the human voice), digital *processing* (by which some of those original sounds are bent to creative purposes), and digital *synthesis* (making up sounds you wouldn't believe and giving five minutes' worth of them titles like *Silicon Valley Breakdown*). The disc also has a seven-minute "test section."

The big news on the CD software front since the first of the year was the entry of EMI, represented in the U.S. by Capitol, Angel, and other labels. It was the last of the "majors" to hop aboard the CD bandwagon. The initial release included a baker's dozen of pop titles, ranging from Kate Bush's 1978 album "Kick Inside" (EMI CDP 46007-2), a forceful mix of feminist agitprop and writing excellence, to the latest from Duran Duran (reviewed in this issue).

Also among the EMI CD's is David Bowie's essay on the "new" romanticism, "Let's Dance" (EMI America CDP 46002-2), which hit the market

the same time as a half-speed-mastered version from Mobile Fidelity (MFSL 1-083). On direct comparison, the difference in sound quality between them was marginal; perhaps the bass on the CD was a little fuller and the top end just a bit more crystalline. But, like almost all pop CD's to date, Bowie's derives from an analog original, and digital mastering can only go so far in enhancing what's already there. Fact is, though, the

sound on "Let's Dance" was really outstanding to begin with.

The first Angel release of ten titles leads off with the company's very first digital recording, Debussy's *Images for Orchestra* by the London Symphony under André Previn (CDC-47001). When the LP was issued here in 1980, it came as a revelation—as much for its sound as for Previn's insights as a conductor in this repertoire. On CD it is still a rev-

Near right, violinist Itzhak Perlman
with conductor Carlo Maria Giulini;
far right, violinists Salvatore
Accardo and Anne-Sophie Mutter



elation, in stunning sound, of a highly complex score.

Otherwise, violinists are highly visible in absolutely first-rate recordings of standard repertoire: the Beethoven Violin Concerto, played by Itzhak Perlman with the Philharmonia Orchestra conducted by Carlo Maria Giulini (Angel CDC-47002), and two discs featuring the phenomenal young violinist Anne-Sophie Mutter—a coupling of Mozart's two D Major violin concertos, with the Philharmonia under Riccardo Muti (CDC-47011), and Bach's two violin concertos along with his Double Concerto, the latter with Salvatore Accardo playing second fiddle and conducting the English Chamber Orchestra (CDC-47005).

If EMI took its own sweet time to make its CD launch, the other major labels wasted none in beefing up their own CD catalogs. Classical releases still predominate, because that's where the market is, and it's in the classical repertoire that the technical advantages of digital audio are most apparent. But pop releases have been proliferating too. RCA achieved a "first" in the field with its simultaneous release on LP, cassette, and CD of the Eurythmics' "Touch" (PL1-70109, PK1-70109, PDC1-4917).

RCA Records



The Eurythmics' Ann Lenox

PolyGram followed up with a simultaneous release of the new John Lennon/Yoko Ono album, "Milk and Honey" (reviewed in this issue).

Several smaller classical outfits have signed in with new CD releases in recent months. Chandos, the British label, released three impeccably produced CD's of catalog standouts: Holst's audiophile warhorse, *The Planets*, in an excellent performance by the Scottish National under Sir Alexander Gibson (CHAN 8302); Tchaikovsky's *Little Russian* Symphony with Geoffrey Simon and the London Symphony (CHAN 8304); and Purcell's *Dido and Aeneas* conducted by Andrew Parrott (CHAN 8306). In the last, the title roles are sung by Emma Kirkby, as fresh of voice as ever, and David Thomas, with Judith Nelson as Belinda and beautiful support from the Taverner Players.

Nonesuch had sixteen entries by

mid-February and is adding three or four titles every couple of months. Some of the winners among them are "The Tango Project" (79030-2), Teresa Stratas's "The Unknown Kurt Weill" (79019-2), and the stripped-down version of Bach's B Minor Mass conducted by Joshua Rifkin (79036-2). Delos has roughly the same number of titles to date, including splendid recordings of Tchaikovsky's most popular symphonies, the Fifth and Sixth, by Eugene Ormandy and the Philadelphia Orchestra (DCD-3015 and DCD-3016).

Teldec (no longer Telefunken) is the label under which many of the recordings by Nikolaus Harnoncourt and the Concentus Musicus Wien are being released on CD, including Bach's six *Brandenburg* Concertos (8.42823 and 8.42840) and various couplings of Mozart symphonies as well as the much-honored Mozart Requiem (8.42756). They all sound measurably better than they do on LP.

Pierre Verany, a tiny French label based very much off the beaten track in Aix-en-Provence, nevertheless must have gotten its CD pressing order in early. It can be proud of a couple of organ recitals on local instruments, Pierre Bardon playing music of Bach (PV.710811) and Chantal de Zeeuw playing Liszt (PV.883041).

Finally, to go back to where we began, Bis has come up with what I believe is a better "demo record" than anything with jet airplanes whizzing through: an album of percussion music by "modern" masters, John Cage and Henry Cowell among them, played by the Kroumata Percussion Ensemble of Sweden (CD-232). Some of it is extremely beautiful, some of it is hair-raising, but it's all guaranteed to give your audio system a workout—and your nervous system as well. □



Reg. Wilson/Angel/EMI Records

MUSICALS ON VIDEO

Some are even better at home than they were at the movies

BY LOUIS MEREDITH

PRERECORDED video discs and tapes routinely achieve millions of dollars in sales nowadays, and nearly every neighborhood in America boasts a video-rental store. And with the hardware dramatically improved over the early days (CX noise reduction for discs, high-fidelity sound for tapes), I think it's likely that there's going to be more software available, and sooner, than anybody could have imagined five years ago. I also think much of it is going to be produced with a lot more care and attention to detail than hitherto. The emerging "videophile" market is going to expect products with the same high-quality packaging, repertoire, and mastering that audiophiles get from a number of labels now. And the resulting upgrading can only be good for everybody.

Three remarkable pieces of video software have just been released that clearly seem to be aimed at videophiles rather than the mass market. On the surface, you might not think they have anything in common. One is a landmark Hollywood musical, one a pioneering rock film, and one a controversial epic Western. Their original release dates span three decades, from 1954 to 1964 to 1980. All three, however, are films in which music is crucially important, all have appeared in video versions that are superior to or significantly different from the forms in which most people originally saw them, and all have genuine historical importance. And any of them would, I think, make an excellent addition to a home video collection.

Taking them chronologically, the first is the newly restored 1954 remake of *A Star Is Born* (Warner Home Video 11335—two VHS or Beta Hi-Fi cassettes, \$69.95; CED or LaserDisc, \$39.98). Starring Judy Garland and James Mason, directed by George Cukor, this was Garland's comeback film. Although it was tremendously successful, it was trimmed by nearly thirty minutes after its original release. The missing footage has, as film critic Leonard Maltin put it, "taken on Holy Grail status among film buffs."

The restoration, put together by film historian Ronald Haver, is not just for buffs. It's a substantially richer version of a movie that was pretty astonishing in the first place. Haver found most of what had been cut, including ten minutes of crucial exposition and two complete musical numbers. Where an entire scene couldn't be located, he used production stills in tandem with dialogue from the rediscovered original soundtrack. For my money, his effort paid off.

A Star Is Born has at least two bravura performances (Garland and Mason) and an unbeatable score by Harold Arlen (*The Man That Got Away*, *It's a New World*). And, as the resto-

not watching some new Coppola or Scorsese epic.

The video version of *A Star Is Born* seems to have been struck from a new negative, and it looks and sounds terrific. It has Technicolor you can eat with a spoon and an original two-channel soundtrack (not previously available) that's surprisingly realistic. As a bonus, the cassette versions come with program notes by Haver; I assume they'll be included also with the discs when they're available (they had been promised but not released at this writing).

Ten years after *Star*, the Beatles and director Richard Lester created an equally innovative film work, and twenty years after that *A Hard Day's Night* is finally available in our living rooms courtesy of producer Walter Shenson, who reacquired the rights. *A Hard Day's Night* virtually originated what we now call rock video (critic Andrew Sarris dubbed it "the *Citizen Kane* of jukebox musicals"). Faced with musicians who did not sing or dance in the traditional ways and with music that had nothing to do with the (slim) story he was telling, Lester put the Fab Four through a series of surrealistic, frantic, and funny paces that are still being copied by half the groups on MTV.

Despite our familiarity with the successors, I'm pleased to report that the musical numbers in *A Hard Day's Night*—and, in fact, the film as a whole—have lost none of their visual freshness or Liverpudlian wit. The video version has a brand-new prologue (*I'll Cry Instead* over a montage of Beatles stills) and a new soundtrack. Shenson remixed the original mono sound for very effective simulated stereo and equalized the dialogue for maximum clarity (a bonus considering the accents). Print quality and tape transfer are splendid. So far the film is available only on cas-



Capitol Records

ration makes clear, it was in its way a revolutionary work: a downbeat, realistic musical with a prophetically sophisticated integration of story with music and a brilliantly modern sense of space and detail. Only the G-rated language lets you know that you're

sette (VHS or Beta, Maljack Productions MP 1064, no list price); there's been talk of disc versions but nothing definite. In any case, if you've ever wondered how these four kids managed to conquer the world, wonder no more. *A Hard Day's Night* makes it perfectly obvious.

Like most Americans, I never saw *Heaven's Gate*, Michael Cimino's four-hour, \$40 million study of the land wars in Johnson County, Minnesota, in the 1890's. A week after it opened in 1980, to savage reviews, the distributors cut seventy minutes, and soon after that they shelved it entirely. Its commercial failure was so monumental that the title has entered the language as a synonym for flop (though the cut version has since had

Facing page, the Beatles in A Hard Day's Night; right, Kris Kristofferson in Heaven's Gate; below, Judy Garland in A Star Is Born

Warner Home Video



some success in Europe). Now it's available for home viewing in its original, uncut form (MGM/United Artists MV 700295—two VHS or Beta Hi-Fi cassettes, \$69.95; CED, \$39.95). I think a lot of folks are going to be as surprised as I was: this is one hell of a movie.

Visually, it's stunning, and the performances are magnificent, from the principals—Christopher Walken, Isabelle Huppert, and Kris Kristofferson (who's never been used better on film)—down to the least bit players. And the musical score is one of the best I've heard in years. Composer David Mansfield, a folkie best known for his work with Bob Dylan, built it up from a series of exquisite ethnic tunes for a small folk ensemble (which gets bigger as the film progresses). The juxtaposition of Mansfield's haunting fragments of Americana with Cimino's painterly constructions, period realism, and masterly action scenes is devastating.

Yes, *Heaven's Gate* is, as they used to say, longer than *Parsifal* and has fewer laughs, but it's the quintessential flawed masterpiece. You really should give it a chance. □

MGM/United Artists

NEW EQUIPMENT:

BY WILLIAM BURTON

STEREO was the star in Las Vegas this January at the Winter Consumer Electronics Show, where audio manufacturers exhibited their new products to dealers and where dealers decided which components to offer their customers. Temporarily overshadowed by computers and video products, the audio field is being revitalized by precisely those two technologies. This was nowhere more evident than in one of the hit product categories of the show: the second generation of digital Compact Disc players, all of which combine computer technology with laser video-c technology.

The popularity of music videos is also contributing to progress in audio. At the CES, Michael Jackson, David Bo-

wie, and others were dancing and singing constantly on hundreds of video monitors and projection TV's to prove it. VHS Hi-Fi has finally followed Beta Hi-Fi into the market, both bringing better sound to video and high-quality audio recording on video tape. Other products, from video speakers to audio/video amplifiers and an entirely new video format, showed that the marriage of audio

and video is producing progeny only two years after the nuptials were celebrated at the 1982 Winter CES.

Although the CD and audio/video products generated much of this show's excitement, audio dealers were also writing orders for truckloads of cassette decks, speakers, turntables and phono cartridges, and other components and accessories. There were several noteworthy developments in these product categories as well.

CD PLAYERS

About 35,000 Compact Disc players were sold last year in the U.S. according to the show's sponsor, the Electronic Industries Association, which predicted that 150,000 would be sold this year. Manufacturers are still expecting prices to fall to between \$299 and \$399 by the end of 1984 even though the January show did not see the steep price drops that had been hoped for. Sherwood had a prototype on display at a price of \$499, and Magnavox cut the prices on its CD players, temporarily dropping the FD 1000SL, released at \$799, to \$499 (right after the show it was back up to \$599).

Right, Wharfedale's Graham Bank poses with his newest design, the \$12,000 Option 1. Lower left, Audiovox engineer Tom Freadman explains his company's Constant Velocity car stereo speakers. Lower right, Don Kliewer of Concord shows his electrostatic car speaker.



Photos by Gordon Sell

STARS AT VEGAS

CD-player price reductions were also announced by Technics and Yamaha (see the chart on the next two pages for features of players priced at \$700 or less). Hitachi announced that its DA-1010 vertical-load player, said to be very much like the discontinued DA-1000, which cost \$1,000, would list for \$600. Hitachi also displayed its CD karaoke machine, so you can sing along with digital.

New CD players were introduced at the show by Pioneer (\$750), Onkyo (\$1,000), and Kenwood (\$899), and NAD's new no-frills player was priced at \$650. Sony had two new players, at \$800 and \$850, bringing its total line to five, and Nikko showed a player with a tentative price of \$660. Denon introduced its \$1,000 DCD-1800 and is expected to have a \$500 player by the Summer CES next June. NEC showed its second-generation Model 705E player (\$900 to \$1,000), and Toshiba had the XR-Z70 at \$800. In all, more than twenty-five manufacturers have CD players or at least prototypes.

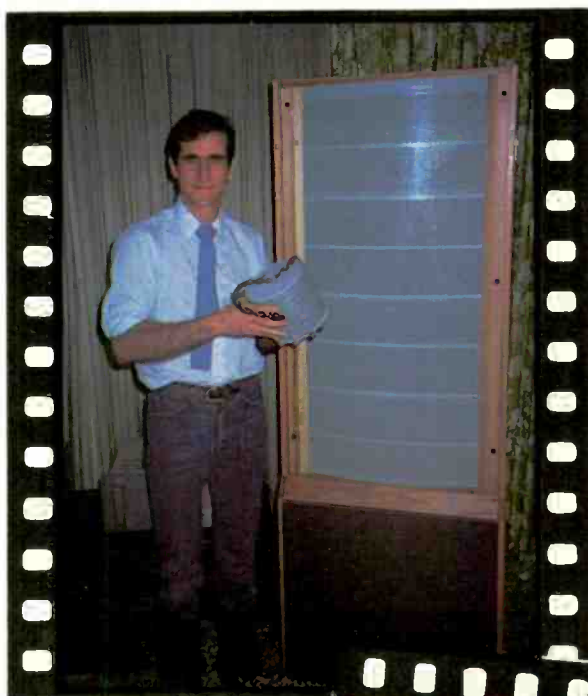
CD SOFTWARE

Twelve million CD's were made last year, Hans Gout of PolyGram told a press confer-

ence given by the Compact Disc Group industry association, six million from PolyGram's Hanover, Germany, plant and six million from Japan. He predicted that thirty million CD's will be made worldwide in 1984, with almost three thousand new titles added to the catalog.

At the same press conference, various record companies announced the extent of their commitment to the

Compact Disc format for this year. PolyGram expects to add twenty-five to thirty new CD titles each month in 1984 to its existing five-hundred-title catalog. Warner/Elektra/Atlantic will add about two hundred new titles to their current one hundred (one of them a spectacular demo/test disc, "The Digital Domain"); CBS will release ten to fifteen new titles each month and RCA seven to eight. Evidently mindful of criticisms of the sound of some CD's, RCA said that its artists are recording with the digital medium in mind. A&M Records said it would release forty titles in February, many of them simultaneously with their LP and cassette counterparts. De-



Left, Ron Sutherland of Martin-Logan shows off one of the 20-pound coils used in the crossover of the Monolith speakers. Lower left, Chris Byrne of Pioneer demonstrates his company's new CD player. Lower right, a Kodak representative shows how the new 8-mm KodaVision video camera/recorder/player fits into its home-user cradle.



non will be adding ten titles a month to the sixty released as of the show, and the highly praised Telarc catalog, now with thirty-three titles, will grow to fifty by year's end.

Audiophile label Mobile Fidelity had its first CD's on sale to dealers at the show, with titles by Sonny Rollins, Al Stewart, Alan Parsons, and Maurice Ravel. Delos, with fifteen titles available, hopes to have forty-five to sixty by January 1985, and Nautilus has six titles in the CD catalog. M&K RealTime Records announced it would be releasing recordings *only* on Compact Disc; the company now has nine CD titles and plans to double that this year. Other companies planning CD releases include Arista, Capitol/Angel/EMI, Chrysalis, GRP Records, Motown, and Teresa Gramophone.

About the only audiophile label not jumping into digital is Sheffield Lab, famous for its direct-to-disc recordings. Sheffield's president, Doug Sax, who has been the most outspoken and eloquent critic of digital sound and still has reservations about the medium, was at the show to canvass his dealers and distributors to see if they thought he should make CD's. At presstime, there had been no decision, but dealers favored Sheffield's making CD's by 85 to 15 per cent according to managing and marketing director Andrew Teton.

Despite confusion over the use of terms such as "digitally mastered" in the labeling of Compact Discs, the RIAA declined to set any standards,

saying these must come from the record companies. To solve this problem, PolyGram is proposing a three-letter code—the first letter referring to the original recording, the middle one to the mixing, and the last to the mastering. For example, "ADD" on a disc would mean that it is an analog recording that was digitally mixed and/or processed as well as being digitally mastered.

VIDEO AUDIO

Just before the show, the Electronic Industries Association recommended the Zenith transmission system and a new dbx noise-reduction system as the industry standard for stereo TV, and the FCC may have approved these choices by the time you read this. The possibility of high-quality broadcast TV sound, along with the popularity of music videos, has increased interest in Beta and VHS Hi-Fi video-cassette recorders and encouraged efforts to improve existing TV sound through add-ons or components linking video and audio systems. According to Don Patrician, national sales manager for Maxell, high-fidelity VCR's should increase their market share from 1.5 per cent in 1983 (all Beta) to 7.5 per cent in 1984 and a significant 37.5 per cent in 1985 (counting both Beta and VHS Hi-Fi units).

The VHS Hi-Fi system, demonstrated by JVC at the Summer CES last June, has outstanding specifications. These include a frequency re-

sponse of 20 to 20,000 Hz, dynamic range of more than 80 dB, distortion of less than 0.03 per cent, wow-and-flutter of less than 0.005 per cent and channel separation of more than 60 dB. This performance, like that of Beta Hi-Fi, stems from the use of a frequency-modulation recording process in conjunction with an effective noise-reduction system. Also like Beta Hi-Fi, VHS Hi-Fi is said not to interfere either with the standard video-cassette audio tracks or with the picture, making it compatible with cassettes recorded earlier or without using the new system.

At the show, Hitachi, Jensen, RCA, JVC, and NEC said they were preparing to ship their VHS Hi-Fi VCR's, with RCA's having a tentative price of \$1,000 and Jensen's under \$1,500. Quasar showed a prototype, with delivery expected for early in the second half of the year, and GE will ship its first VHS Hi-Fi decks in the summer. Prices, availability, and many technical details seemed to be closely guarded secrets as the manufacturers scrambled to get their production lines rolling.

With Zenith defecting from the Beta to the VHS camp, just about the only good news for Beta enthusiasts at the show involved the spread of Beta Hi-Fi VCR's. Aiwa showed its Beta Hi-Fi V-5 system, consisting of a VCR and Beta Hi-Fi adaptor with built-in power amps (\$1,395), and Sanyo showed a table-top successor (\$700) to its discontinued Beta Hi-Fi portable.

THE NEW, LESS EXPENSIVE COMPACT DISC PLAYERS

Manufacturer	Sansui	Sanyo	Sony	Technics	Magnavox	NAD
Model number	PC-V500	DAD8	CDP-200	SL-P8	FD 2020SL	5200
Price	\$700	\$700	\$700	\$700	\$699	\$650
Disc loading	drawer	vertical	drawer	drawer	top	drawer
Number of tracks that can be programmed	15	16	0	32	15	0
Cue by time?	No	Yes	No	Yes	No	No
Cue by index number?	No	Yes	Yes	Yes	No	No
Skip forward/back?	Yes/Yes	Yes/Yes	Yes/Yes	Yes/Yes	Yes/No	Yes/Yes
Fast forward/reverse?	Yes/Yes*	Yes/Yes	Yes/Yes*	Yes/Yes*	Yes/Yes	Yes/Yes*
Repeat track/disc/phrase?	Yes/Yes/No	Yes/Yes/No	Yes/Yes/Yes	Yes/Yes/Yes	Yes/Yes/No	No/No/No
Headphone output?	Yes	Yes**	Yes**	Yes**	No	No
Remote control?	No	No	No	Yes	No	No

* Program is audible during fast forward and reverse.
** Volume level of headphone output is adjustable.



Left, NEC's CD-705 programmable Compact Disc player can skip unwanted tracks in forward or reverse. The remote control slips into the front of the unit. Price: \$999. Below, another programmable CD player, Magnavox's FD 3030SL (\$799).

The big buzz in video was the controversial new 8-millimeter format, shown most prominently by Kodak and Fisher. Kodak expects to ship 8-mm camera/recorders in June, and GE promised mid-year delivery on its unit, with RCA and others waiting in the wings. (Hitachi president Bob O'Neil, in a forceful statement delivered at the Riviera Hotel, denounced Kodak for jeopardizing sales of current-format VCR's by marketing 8-mm; he added, however, that Hitachi would nonetheless be able to introduce its own 8-mm machines.) In the new format, the audio signal is encoded on 8-mm tape along with the video signal and is read by the rotating video heads, as in Beta Hi-Fi. Although the format should eventually have high-quality (even single-channel digital) sound, the Kodak system, which uses metal video tape, is mono only and is limited to a 90-minute playing time (as is GE's). Fisher



claims a maximum of 240 minutes. Among the products designed to improve TV sound were powered speakers from Jensen and Ecco. Jensen also displayed a tuner, the AVS-

2100 (\$590), designed to add video capabilities to an audio system. JVC, Fisher, Toshiba, Mitsubishi, and GE had TV's with stereo audio inputs and stereo speakers, and Akai showed

Nikko	Hitachi	Sears	Technics	Magnavox	Yamaha	Sanyo	Marantz	Sherwood
NCP-1	1010	none	SL-P7	FD 1000SL	CD-X1	CP200	CD-54	CDP-100
about \$650	\$600	\$600	\$600	\$599	\$599	\$550	about \$550	\$500
drawer	vertical	drawer	drawer	top	drawer	crawler	drawer	drawer
16	15	16	0	15	23	16	24	0
No	No	No	No	No	No	No	No	No
No	No	No	Yes	No	No	No	No	No
No/No	Yes/Yes	No/No	Yes/Yes	Yes/No	Yes/Yes	Yes/Yes	Yes/Yes	Yes/Yes
Yes/Yes	Yes/Yes	Yes/Yes	Yes/Yes*	Yes/Yes	Yes/Yes*	No/No	Yes/Yes	Yes/Yes*
Yes/Yes/No	Yes/Yes/No	Yes/Yes/No	Yes/Yes/No	Yes/Yes/No	Yes/Yes/Yes	Yes/Yes/No	Yes/Yes/No	No/Yes/No
Yes**	Yes**	Yes	No	No	No	Yes	No	No
No	No	No	No	No	No	No	Yes	No

its unique AV-U8 audio/video "command center" (\$350), which has a built-in black-and-white TV monitor and handles four audio and four video sources. The AV-U8 features Dynamic Noise Reduction and is rated at 22 watts per channel.

RECEIVERS

Among the few receivers introduced at the show, Pioneer's new SX-V90 audio/video receiver was a standout. Besides the usual audio-receiver features, it handles six video sources, generates simulated stereo from mono, and puts out 125 watts per channel, all for only \$800. NAD's 7135 receiver (\$448) has a "Dynamic Separation Circuit" for FM that gently varies the high blend according to the volume of the music to reduce noise from poor signals.

An "Anti-Clipping Circuit" is in-

cluded in the first Proton home component, the Model 930 receiver (\$360), which also features the Schotz variable-bandwidth PLL FM detector. SAE has a new \$499 receiver with a computer to link the controls with the audio circuits, and two new receivers from Sansui, the S-X1050 (\$300) and S-X1030 (\$250), feature knobless control panels and twelve station presets.

SPEAKERS

While the full-line audio companies occupied the open floor and spacious meeting rooms of the Las Vegas Convention Center, the specialist manufacturers set up their demonstrations in the cloistered suites of the Riviera hotel. Almost every room, as usual, had abominable acoustics, but the good speakers still stood out and the bad ones got what they deserved.

Many of the systems had unusual shapes. One of these, the Duntech PCL-3, was designed for wall mounting; despite a 3½-inch depth, it has a claimed frequency response of 55 to 20,000 Hz ± 3 dB. The sonically outstanding Snell Type A Series III offered enhanced bass response and a rear-firing super-tweeter for approximately \$3,700 to \$3,800 per pair.

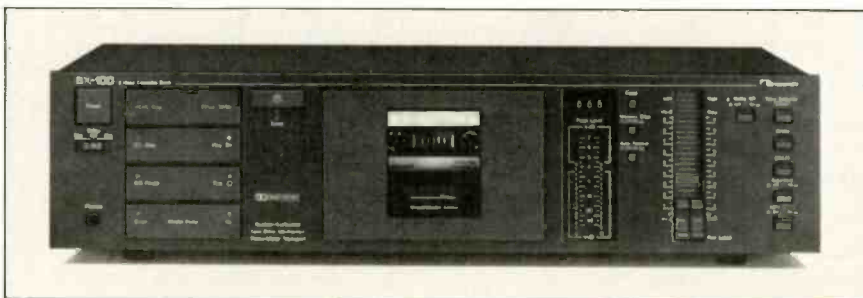
Also impressive were the \$12,000-per-pair Option 1 dipole-radiating speakers from Wharfedale, new models from Dahlquist and Thiel, and speakers from Siefert-May (All-American Audio) with trapezoidal enclosures. New B&W speakers use electronic time delays instead of physical offsets for time alignment of the drivers; a demo using a digital sound source was awesome. Canton's CT-2000, a 3-foot three-way system, can match any decor with its choice of finishes: white or black lacquer, walnut (\$2,000 per pair), or mahogany (\$2,240 per pair). Avid reappeared at CES with an addition to its line, a three-way speaker with a 10-inch passive radiator for \$780 per pair. KEF added the two-way Chorale III (\$225 per pair) to its Standard Series, and Polk's Model 4A (\$160 per pair) sported a new 1-inch polymer-dome tweeter. The \$115-per-pair Infinity RS11 has a 4½-inch woofer and 1½-inch polycarbonate tweeter.

CASSETTE DECKS

Auto-reverse cassette decks are becoming more common, and "dub-



Above, Hitachi's VHS Hi-Fi video-cassette recorder, the VT-88A, records and plays back high-fidelity audio through rotating heads; standard VHS audio tracks are read by fixed heads. Upper right, Pioneer's SX-V90 audio and video receiver includes switching circuits for two VCR's, a video-disc player, a video monitor, a television, and a video-game machine. Audio functions include stereo simulation, Dynamic Noise Reduction, and digital tuning. Price: \$799.95. Lower right, the BX-100 cassette deck from Nakamichi has vertical record-level displays, Dolby-B, and auto repeat for \$359. The BX-150 adds Dolby-C and an output-level control for \$495.



bing decks" (with two transports) were popping up all over the convention center. Taking the multiple-play concept even further was the Sony MTL-10 cassette changer, which can play up to ten cassettes in any order. The deck is \$250, and the loading trays, also usable for cassette storage, are \$15 each.

Nakamichi introduced the BX-150 (\$495), with Dolby-C, and the BX-100 (\$349), both with two heads. Teac showed three new three-head decks, the V900X (\$725), the V-800X (\$600), and the V-700 (\$500); all have Dolby-B and Dolby-C, with dbx also in the top two. Akai had two new auto-reverse Dolby-B/C decks (one with three heads), at \$600 and \$800, and Denon and Kenwood introduced lower-priced decks with both Dolby systems.

SEPARATES

Manufacturers seemed to have little time to set up demonstrations for the press, but Phase Linear compared its DRS-900 power amplifier and a Threshold S/300 feedback-free amplifier with an oscilloscope to show how the former's higher dynamic headroom prevents clipping. Threshold amps were used to drive many of the speakers at the show in addition to being featured in Threshold's own demo room. Other notable separates included NAD's Model 4125 tuner (\$238) with the new Dynamic Separation Circuit.

VSP introduced its 200-watt-per-channel Gold Edition TransMos amp, with hand-soldered wiring, for \$1,400, and Amber showed its first tuner, the Model 7 (\$349). As in re-



Polk upgraded its two small Monitor speakers. The 4A (left) and 5jr (right) were designed to have higher sensitivity, better bass response, greater clarity, and a more natural midrange sound. Prices are \$159.90 and \$249.90 per pair, respectively.

ceivers, some of the news in separates was video compatibility. The Technics SU-A6MK2 preamplifier (\$500), for instance, handles both audio and video switching.

RECORD HARDWARE

Many turntables appeared with P-mount tone arms, and Sansui offered all but its top model in this format. The dual-tone-arm "auto-reverse" turntable in one of Sansui's midi systems turned a few heads, and the sin-

gle tone arm in a new Sharp turntable makes a hairpin turn to play both sides of an LP. The tone arm in NAD's long-awaited Model 5120 turntable (\$248) is designed to flex up and down, thereby reducing resonance (see test report on page 32). Linear-tracking technology hit a new low in price with ADC's fully automatic LT32, which lists at \$100. Slightly more expensive were three new belt-drive turntables from Harman Kardon, the T25 (\$175), T35 (\$235), and T45 (\$295). ▶



P-mount cartridges and turntables are becoming more common. Above is Audio-Technica's new moving-coil P-mount cartridge, the AT312EP. It has a biradial stylus and costs \$145. Left, Harman Kardon's standard-mount semi-automatic T45 turntable. It has a wood base, low-mass tone arm, and carbon-fiber headshell. Price: \$295.

Among the notable cartridges shown by Audio-Technica were the AT160ML (\$250) with a MicroLine line-contact stylus (the shape is said to reduce wear on both the stylus and the record) and the AT312EP moving-coil P-mount. High-output moving-coil cartridges were shown by Denon, the DL-110 (\$90) and DL-160 (\$120), and Adcom, whose Crosscoil line includes models with Van den Hul tips at \$450 and \$220.

BLANK TAPE

Although overall there were more new tape promotions (such as the extensive Scotch "Rewards or Rebates" program) than new products at the show, there were some new manufacturers and new formulations entering the blank-tape market. New audio tape rolled out included the High Grade and Quality lines from PDMagnetics and TDK's HX metal cassettes, for recording at the Type II high-bias (*not* metal) setting.

With Beta and VHS Hi-Fi, audio quality depends partly on the video signal-to-noise ratio (S/N). Fuji's new Super XG video tape is claimed to have S/N's that are 1 dB better than its Super HG tape for the regular audio track and 2 dB better on the video track (where hi-fi audio is recorded). The "imaging" giants Kodak and Polaroid entered the tape field with new brands of video cassettes.

ACCESSORIES

Bob Carver's demonstration at the winter show featured his newest

product, the Digital Time Lens (\$250), which is intended to compensate for differences between the sound of LP's and CD's. According to Carver, these differences are caused by different ratios between the L - R and L + R signals in the two media as well as a slightly falling response above 400 Hz in LP's compared with CD's. If you want to enjoy the advantages of CD's without the so-called "digital sound," this may be your answer.

Other ancillary CD products included a drawer from Custom Woodwork & Design to hold seventy-five of the discs in their "jewel boxes." Usable in all CW&D cabinets, it costs \$70. For smaller collections, Imperial Plastics displayed two pine CD racks for forty-eight or twenty-four discs (\$39 and \$29, respectively). Sonrise's rotating CD cabinet, in solid oak or walnut, holds forty-eight discs (\$65). In other furniture news, Danefurn brought Scandinavian style to electronic components with a new line of racks and cabinets.

For those who want to hear every nuance of a recording at ear-splitting volume without disturbing anyone else, Stax Kogyo introduced the electrostatic SR-Lambda "earspeaker" (with the SRM-1 Mk 2 amplifier) for \$780. Other interesting little products included a 2-ounce headset radio from Panasonic, a pocket *stereo AM* tuner from Sony, and an auto-reverse pocket cassette/FM player with a battery pack that detaches for recharging from Clear Electronics.

Digital-audio computer technology was found not only in the Compact

Disc system but in music synthesizers, enabling them to be controlled by computers. For example, Kimball's Piano and Organ P5 Challenger synthesizer can be programmed with optical bar codes, and the user can create rhythms, melodies, solo orchestral voices, and novelty effects with a home computer.

LOOKING AHEAD

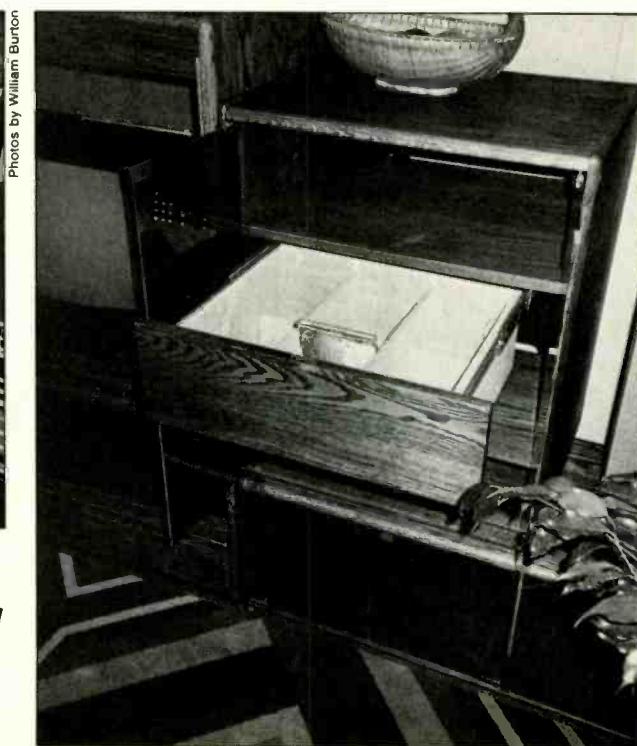
In June, manufacturers and dealers will meet in Chicago for the Summer Consumer Electronics Show. They'll be discussing new Compact Disc players and software, the effects of lower pricing, and the impact of digital technology on receivers, speakers, cassette decks, and other components. Dealers will have a better idea of how many people are upgrading their systems to take advantage of the superior sound potential of the Compact Disc system.

As far as the commingling of audio and video is concerned, there will probably be even more emphasis on hi-fi video-cassette recorders, stereo-ready televisions, audio add-ons for TV, and equipment to interface video and audio systems. Improved sound capabilities for video should finally enable consumers to buy video products with audio reproduction that matches—or exceeds—the quality of the video image.

In the meantime, between the winter and summer trade extravaganzas, dealers will be showing consumers what they bought at the Vegas CES in the home-town electronics show that lasts all year. □



Above, the tone arm in Sharp's RP-117 turntable makes a hairpin turn in order to play both sides of an LP without flipping the record over. Price: \$249.95. Right, Custom Woodwork & Design has a drawer for storing Compact Discs. The drawers will fit all CW&D audio cabinets; each stores seventy-five CD's and costs \$70.



AND FOR THE CAR . . .

BY FRANK VIZARD

MOBILE Compact Disc players, new cassette/radios, self-powered speakers, and new ways to fight thieves were the hot items in car stereo at the Winter Consumer Electronics Show in Las Vegas. Philips, Mitsubishi, Kenwood, Panasonic, and Fujitsu Ten showed prototypes of car CD players. While all were confident that their production models would be small enough for easy installation and that problems of heat and vibration would be overcome, it will be early 1985 at least before any players show up in cars or stores.

One truly innovative development, however, had nothing whatever to do with technology. Grundig, the German audio manufacturer, offered replacement insurance for stolen car systems bearing its name. Grundig's Theft Protection Guarantee, as it is called, can be purchased for under \$15 and is valid for two years. Theft victims must have proof of purchase and evidence of the loss.

Concern over theft is reaching an all-time high among suppliers, and various preventive solutions are being tried. Kenwood's new KRC-626 cassette player/receiver, for instance, is available with a special chassis that enables the owner to remove it easily from the dashboard for safekeeping. Alpine, in contrast, offered three auto-security devices designed to protect the whole car.

In other developments, Jensen presented a startling new look in cassette/radios. Jensen's five-model ATZ line combines an uncluttered, knobless front panel (made possible by a built-in computer with a 4K memory to control tuner and tape functions) with ease of installation. Prices range from \$320 to \$520.

Also changing its image at the show was Pioneer, whose Centrate system is easily the most expensive car stereo gear this company has ever offered. It includes a cassette/tuner unit, a 30-watt-per-channel amplifier, a choice of graphic equalizers, a subwoofer system, and an infrared remote control for prices ranging from \$1,300 to \$1,900. Industry insiders expect Sanyo to offer a similar deluxe package in the near future. Nakamichi introduced the \$890 TD-800 cassette/tuner, without auto-reverse, at the show, along with a more easily installed version of the auto-reverse TD-1200 and some amplifiers and crossovers.

It's an old idea for speakers to include their own amplifiers, but it has regained popularity thanks to its use in the successful Delco/Bose Music System offered by General Motors and by the availability of powerful, compact amplifiers with low distortion. Philips showed a pair for \$599, Sparkomatic's Amplidyne models ranged from \$199.95 to \$299.95 per pair, and Audiovox offered its Constant Velocity speak-

ers for \$250 to \$325 per pair. Concord introduced electrostatic speakers for car use with two models priced at about \$250 each. A rotating housing enables the speakers to be aimed as desired, and a built-in dynamic woofer supplies the bass.

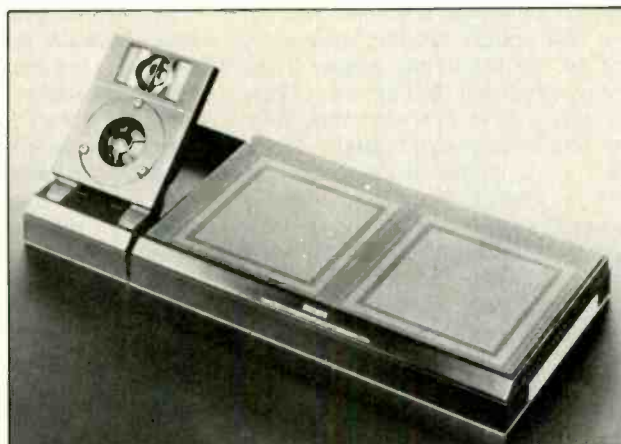
The adaptation of home hi-fi technology to mobile applications and the entry into the market of home audio companies continued unabated. For example, Acoustic Research increased the number of car speakers in its line from three to nine, and Harman Kardon introduced its first auto-sound product, a 60-watt-per-channel power amplifier for approximately \$375.

The situation with regard to AM stereo broadcasting is still confused. At the show, Motorola was pushing its C-QUAM system, emphasizing that Chrysler and GM were planning to introduce car radios using the system later this year. Sherwood also announced a car receiver equipped for C-QUAM AM stereo, but Sansui and others continued to hedge their bets with radios that are equipped to receive AM stereo broadcasts in all formats.

Two long-term trends showed no signs of change. First, the price of well-equipped digital in-dash cassette/radios is getting lower and lower. Second, the level of sophistication and the price of state-of-the-art car stereos are getting higher and higher. Both trends bode well for the future of high-fidelity sound on the road. □

Frank Vizard is the editor of *Autosound and Communications*.

Fujitsu Ten was one of five companies that showed prototype Compact Disc players for cars. Developed jointly with Toyota Motors, the Fujitsu Ten player has a "floating" suspension.



Several companies showed powered speaker systems. The Philips EN 8900 has a pivoting tweeter/midrange assembly and two square-panel woofers.

UNDERSTANDING COMPACT DISC ERRORS

How to interpret error/tracking tests

BY DAVID RANADA

GARBAGE in, garbage out," say the computer programmers. Feed bad data into a computer system and out will spew wrong, misleading, or useless results. The same is true of the digital-audio Compact Disc system, with the CD player taking the role of the computer and the data being the encoded audio signal. Incorrect or missing data from a Compact Disc can result in clicks, pops, dropouts, "skipped grooves," and "stuck records"—all the analog-disc problems you probably thought the Compact Disc system was supposed to eliminate.

But take heart: the pressing quality of a new or well-cared-for CD is likely to be far above the minimum necessary for faultless playback. There seems to be some needless concern about this point among those still skeptical about digital audio. They somehow feel that data errors are partially responsible for what they hear as the (bad) "sound of digital." Much of this worry comes from misunderstandings about the nature of CD data errors, their frequency, what players do about them, what they sound like when they are really severe, and the correct interpretation of CD-player error/tracking tests.

TYPES OF ERRORS

Anything interfering with the reflection of a CD player's laser beam from the inner, aluminized "signal surface" of a Compact Disc can create data errors. Interference can come from defects in or damage to the sig-

nal surface, defects imbedded in the disc's plastic material, and damage caused to the outside playing surface (the side opposite the label).

The CD system is protected from the audible effects of all but the grossest data errors by an all-digital error-correction system. In addition to the encoded audio data, a CD contains mathematically redundant summaries of the audio information. A CD player's error-correction circuits use this redundant information to correct errors it finds in the data.

There are four degrees of severity of CD errors, each level determined by what the error-correction circuits are required to do.

● **Fully correctable errors.** Most common on an unscratched CD are errors that can be completely and exactly corrected by use of the redundant error-correction data. Fully corrected errors *cannot* have any audible effects because the correct audio information has been restored.

● **Concealed or interpolated errors.** These are errors for which the error-correction circuits have insufficient redundant information to make a full correction. The circuits then mathematically interpolate substitutions for the missing or defective data so as to conceal the error, which might otherwise be heard as a loud click or pop. Interpolations are *sometimes* audible as distortion or low-level clicks but are *usually* inaudible.

● **Muting errors.** When a long string of unconcealable errors occurs, some CD players mute the audio signal. As long as the error "burst" is not too long, the muting is not always noticeable and is preferable to letting the errors pass.

● **"Detracking" errors.** Since the reflected laser beam carries both audio data and laser-positioning information, very bad disc damage or defects may create a large number of audio-data errors *and* throw off the laser-tracking circuits so that the laser becomes "detracked." This is the most severe form of error since it generally leads to the CD equivalent of a skipped or locked groove.

REAL-WORLD ERRORS

Just how severe are these four types of errors in practice? How good is the general quality of CD pressings? I'm happy to report that there seems to be nothing to worry about when it comes to data errors.

In order for me to investigate this issue, Sony courteously allowed me a day's use of one of its CDP-5000 professional CD players and the companion CDA-5000 CD analyzer. While the player can pull some interesting tricks (you can cue a disc to within 13.3 milliseconds of a desired point, and "back cueing" is possible for DJ use), it was the analyzer that enabled me to answer the pressing-quality questions. The analyzer can, among its many other functions, count the number of data errors occurring while a CD is playing in the CDP-5000, and it can classify the errors as fully corrected, concealed, or detracking. Inspired by this \$9,600 device, I constructed a much less versatile but much cheaper (\$40 total in parts) and equally accurate CD error-counting circuit and attached it to an "average" consumer-model CD player (thereby voiding its warranty, by the way).

CD information is grouped and processed in "blocks" or "frames" containing 192 bits of audio information each. Some 7,350 blocks of data are scanned by a CD player every second it is playing a disc. If only one bit out of a block is erroneous, the whole block is considered to be in error, called a "block error." My disc-test circuit, like Sony's, counts block errors and also counts the number of block errors that cannot be corrected and require concealment.

Dividing the total number of block errors for a disc by the number of seconds in the disc's playing time yields a figure of merit for pressing quality called the "block error rate" (BER), measured in blocks per second; the lower the figure the better. A typical CD in good condition has a BER of 30. The best in a survey of thirty discs had a BER of 6.7. Even the longest available CD, Beethoven's Ninth Symphony on Denon, had a BER of only 11.2.

A typical new or well-cared-for CD generates about 81,000 block errors in 45 minutes. In my experience, *all of these errors are exactly corrected.* There are no concealments—the audio information is *all perfectly reconstructed.* The BER has to be *very high* (over 100) to increase the probability of concealments, and even then interpolations are not likely unless there is some damage on or in the disc that is visible to the naked eye. Thus, CD error rates (for new and well-cared-for discs) are low enough that there is no reason for any concern about their audible effects.

TESTING CD PLAYERS

Despite the high general quality of CD pressing, eventually every owner of a CD player will want to play a defective or damaged disc. The ability

to play such records with no audible problems is one of the most important factors still distinguishing one CD player from another. There are tests now being used to draw out these distinctions, but *they cannot be used as infallible guides to CD-player performance* because of the necessarily subjective nature of the tests and because of (probably unavoidable) inconsistencies in the test material.

At present, there is only one standard, widely available test disc for examining the error-correction and tracking abilities of a CD player, Philips's Test Sample No. 4A (disc number 410 056-2). It is used by Hirsch-Houck Laboratories and by many other audio-equipment reviewers around the world. The disc contains short musical excerpts, and it simulates the effects of a defective or damaged pressing by means of three types of factory-applied "damage." A pamphlet enclosed with the disc indicates the time when the damaged section should pass by the laser scanner.

The first type of damage on TS4A is a wedge-shaped area of damaged inner signal surface created by scratches on the master-disc mold. The minimum width of the wedge (as scanned by a player) is 400 micrometers (μm , millionths of a meter), and it widens in 100- μm increments until it is 900 μm wide. This *inner-surface* wedge is meant to simulate either pinholes in a disc's aluminized signal surface or scratches on the *outer* surface of the playing side or the label side. Philips's recommended acceptance limit for all manufacturers of CD players is that each player should be able to play at least the 400- μm section of the wedge with no audible problems.

Next comes a series of opaque black dots, 300, 500, 600, and 800 μm in diameter, painted on the outer

playing surface. These are intended to simulate the effects of inclusions (particles trapped in the plastic), trapped air bubbles, and dirt on the outer playing surface. Again, Philips recommends that all players be able to handle at least the smallest-sized damage, 300 μm .

Last, there is a rectangular grid of tiny dots simulating a rather greasy fingerprint. It is longer in the direc-

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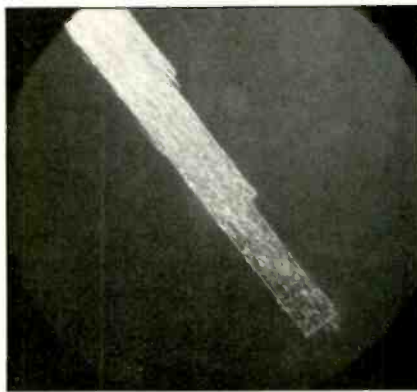
tion of rotation to provide a more severe test. Although Philips suggests no acceptance limit for what is essentially a go/no-go test, Julian Hirsch and I have yet to find a CD player that consistently fails to play through the simulated fingerprint.

The standard procedure when testing players with the TS4A disc is to play each type of damage, starting with the "easiest" parts, while listening for any audible effects of error-correction failure or detracking. As a Philips memo notes, superior performance in these "playability" tests "means in general that the player has a superior margin for playing various defects without audible disturbances ('drop-outs' or 'mutes')." [Superior playability also] leaves a large margin for handling any future degradation of the disc . . . caused by scratches, fingerprints, etc." Unfortunately, obtaining useful information about relative playability is not so simple. ▶

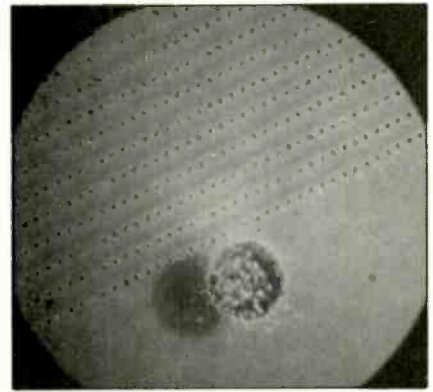
Photomicrographs by David Ranada



A disc defect (an embedded signal-surface scratch) that was caught by the quality-control department of a CD pressing plant.



The 400-, 500-, and 600-micrometer portions of the damaged (scratched) wedge on the signal surface of the Philips TS4A error/tracking test CD.



The 800-micrometer black dot and a portion of the simulated fingerprint on the playing surface of TS4A. Note the shadow created by the dot.

USING A TEST DISC

Evaluating a CD player's tracking and correcting abilities using TS4A *must* be a subjective listening test. An "objective," automated system to listen for detracking or dropouts in the music could not be made except at great expense, nor could one be made that would connect easily to the internal circuitry of all CD players. But a subjective tracking test involves several related, and not necessarily controllable, factors, including: (1) the nature of the flaw; (2) the size of the flaw and its orientation with respect to the audio track; (3) the construction and alignment of the laser scanning mechanism; (4) the design and adjustment of the servo circuits controlling the laser's position; (5) the error-correction "algorithms" embodied in the CD-decoding integrated circuits; and, last but certainly not least, (6) the ability of the tester to recognize the sound of error-correction failure or detracking.

All these factors are being tested when TS4A is used, even though only three of them (Nos. 3, 4, and 5) can be considered characteristics pertaining to a CD player. Of particular importance is the human factor. Gross failure of error correction or tracking can sound different on different machines, and—this is where the listening abilities of the tester come in—failure can sometimes be masked or even mimicked by the music being played. If a player's first instance of tracking failure produces a mute during a soft passage or pause in the music, it may not be noticed by the tester, and the player may consequently

receive a rating that is higher than it deserves.

Use of TS4A-derived results to compare CD players assumes that each copy of TS4A is identical—that every TS4A pressing would produce the same result each time it is played with the same CD player. But CD-player performance with any type of gross defect can be erratic. A player may get through the first portions of the wedge twice in a row with no problems—and then produce muting or detracking on the third try.

Using different copies of TS4A may itself produce different results. I counted the total number of block errors generated by the 300- μ m black dot on two copies of TS4A. One pressing produced $4,620 \pm 37$ block errors; the other copy had only $4,393 \pm 43$. The player to which I hooked up the error-counting circuitry managed to correct fully all the block errors in the second disc but generated about one hundred interpolations in each of five playings (out of ten) with the first pressing (none of these concealments were audible, however). It is conceivable that a lesser player would pass a subjective error test with one pressing and fail with another or that the results would vary depending on how many tests were run.

Both the human factor and the issue of disc/player consistency are relatively minor compared with the question of whether TS4A is a realistic simulation of real-world disc defects and damage. I don't know of any published research justifying the suitability of the TS4A defect and damage simulations. In several areas it seems to pose too stringent a test,

which is at least preferable to being too easy. The smallest wedge segment, for example, is far larger than any factory defect (pinhole, inclusion, signal-surface scratch) I've come across in any new commercial CD pressing. And you'd have to have awfully greasy fingers or handle your CD's very sloppily in order for any of your fingerprints to interfere with the laser beam as much as the simulated fingerprint on TS4A.

When it comes to outer-surface scratches, however, TS4A results definitely do not seem to be reliable indications of player performance. The CD system is, by its very nature, rather sensitive to scratches on the outside of the disc. This is not because of any inadequacy in the design of the error-correction system. After all, the system in its most basic form can theoretically cope with a *total* loss of data from a continuous track segment 8.16 millimeters long. Scratch problems arise not because of missing or damaged data but, I am told, because the scratch deflects the laser beam and/or its reflection, thus causing the laser to scan the wrong place at the wrong time and/or causing the optical sensors to "see" more than one track at a time. *No part of TS4A mimics this type of optical mixup.* Tests using TS4A cannot therefore be taken as truly representative of player behavior with CD scratches.

With these problems in mind, I would suggest a few guidelines for interpreting results obtained from tests with TS4A (or any other subjective test of CD-player error correction and tracking):

1. Comparisons between different players are most valid when the test results are all obtained from the same listener(s) using the same pressing of TS4A. (All of Julian Hirsch's CD-player tests have been made with the same TS4A pressing.)

2. If two players differ in their abilities only slightly (for example, one can get through the 800- μ m wedge segment, the other through the 900- μ m portion), no significant conclusions regarding relative quality should be drawn. But if a player consistently performs perfectly for many different reviewers, it's probably a superior unit.

3. TS4A test results should be taken only as rough guides to player performance with damaged or defective CD's. But until a test disc is made that lends itself to an automated test and also carefully simulates the full range of possible CD defects and damage, the Philips TS4A is the only game in town. □

Sony's CDP-5000 professional Compact Disc player (left) and its companion CDA-5000 disc analyzer. Together, these devices make it possible to evaluate the pressing quality of Compact Discs.



HIGH-TECH FORUM was created so that you and the manufacturers could share a special catalog covering the ideas, concepts and philosophies behind their most advanced product developments.

In HIGH-TECH FORUM you'll get in on behind-the-scenes manufacturing processes that make for a superior audio component or line of components. You'll have a chance to learn from company engineers how special technical problems were solved, thereby achieving the desired sonic quality. In short, you'll learn the thinking behind the products designed to meet your high standards of music reproduction.

Stereo Review's HIGH TECH FORUM



HPL-532

HX—Reflecting TDK's continuing leadership in magnetic recording technology

Magnetic recording tape has been with us a relatively short time, only about 35 years. Those years witnessed long periods of slow progress punctuated by sudden breakthroughs that significantly advanced the state of tape recording technology. Today few realize that the compact cassette format as originally developed by Philips was little better than a dictating machine. Its limited frequency response and high hiss level seemed to preclude any possibility that it would ever become a hi-fi medium.

But TDK took up the challenge. In 1968 TDK announced SD, a cassette tape specifically formulated to offset the technical limitations of the cassette format. **TDK had produced the world's first high-fidelity cassette tape.** This original SD oxide formulation was followed by other significant advances in tape recording technology, such as chromium dioxide, Avilyn, and recently, metal alloy tapes. A fifth new formulation, a pure metal alloy, has just joined this exclusive group of breakthrough tapes—we call it HX.



TDK's new HX tape is the first metal tape designed specifically for use in the high bias position.

FROM FERRITES TO FERRIC OXIDE.

To understand the technical roots of the HX achievement you have to know something about the company that produced it. TDK was founded in 1935 specifically to explore the industrial potential of the then newly developed ferrite materials. TDK's view of the long-term potential of ferrites proved absolutely correct; today it would be difficult to find an area of electronics in which ferromagnetic materials do not play a vital role. TDK to this day remains a major supplier of ferrites to electronics manufacturers all over the world.

Having developed an enviable reputa-

tion and expertise in magnetic materials technology, it was a logical step for TDK to turn its attention to magnetic recording tape. In 1952, when TDK started its research, open-reel home recording was in its infancy and the cassette format was many years away. But radio stations all over the world were taping programs for later broadcast, and recording studios were continually searching for tapes that could fulfill their special music-recording requirements.

In 1952 the gamma ferric oxide magnetic particle—the "active ingredient" in all recording tapes—had a long way to go before it could deliver true high-fidelity results. TDK confidently took on the challenge to manufacture an improved tape, secure in the knowledge that they had both the technical know-how and sophisticated manufacturing facilities needed to do the job. Among Japanese professionals, TDK's recording tapes subsequently gained an excellent reputation for quality and consistency, a reputation that was to become worldwide in scope as TDK's marketing efforts expanded.

CASSETTE BREAKTHROUGHS.

Once TDK proved that the compact cassette format could be a hi-fi medium with that breakthrough SD tape, other manufacturers began to investigate the possibility of improved cassette tape formulations. In 1971, DuPont developed the chromium dioxide particle. It represented another significant step forward, although certain technical problems remained. Two years later, TDK solved those problems by developing Avilyn, a magnetic tape formulation consisting of cobalt ions adsorbed (coated) on finely milled needle-shaped gamma ferric oxide particles. As the first of the "chrome-equivalent" cassette tapes, Avilyn's performance was significantly better than anything available up to that time.

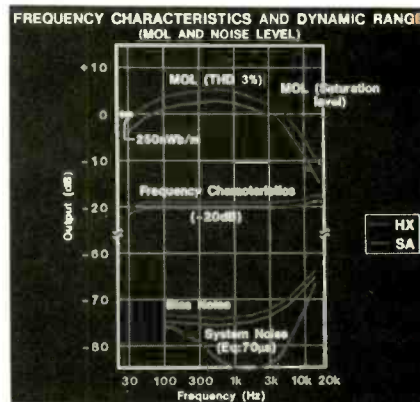
METAL QUALITY.

Never a company to rest on past achievements, TDK was one of the pioneers in the development of the pure metal particle for cassette tape. And when used in one of the better recorders, TDK's metal MA-R cassettes provided unexcelled performance. Unfortunately, every cassette recorded with a metal-bias switch position doesn't necessarily have the tech-

nical wherewithal to extract the full measure of metal tape performance. Knowing this, TDK embarked on a research project, the goal of which was to bring the sonic benefits of metal tape to virtually every cassette deck made in the last 10 years.

THE HX ANSWER.

TDK's HX is a newly developed pure metal particle specifically designed for recording with Type II "chrome-equivalent" bias and equalization. The unmatched MOL and exceptional high-end response of HX cassettes allow them to effortlessly handle the wider dynamic range and substantial treble energy of Compact Discs and digitally recorded material. Specifically, HX can record a 4 dB higher signal level at 10 kHz than the best of the Type II cassettes. (TDK's SA). High frequency overload and saturation cease to be a problem. And as a bonus, there is also a 2 dB improvement in midrange energy storage.



Everything promised by metal tape—and more—is delivered by HX, and on virtually any cassette deck. TDK achieved this technical breakthrough based on its nearly five decades of manufacturing experience. You owe it to yourself—and your deck—to try an HX-60 or HX-90 cassette as soon as your dealer is able to stock them. TDK's sonic superiority is there to be heard.

For the full HX technical story, write to:

TDK
TDK Electronics Corp.
 Technical Services Dept.

12 Harbor Park Drive, Port Washington, NY 11050

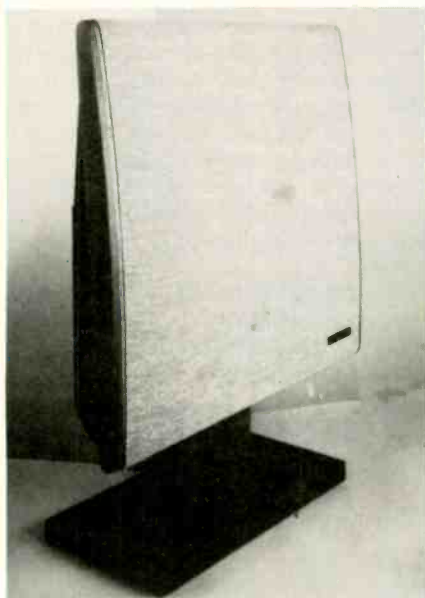
CIRCLE NO. 43 ON READER SERVICE CARD

Dahlquist, Celebrating a Decade of Dedication

In this era of corporate controlled "mass-fi," Dahlquist represents a refreshing commitment to the cause of audio perfection. It was originally founded by, is still owned by, and has always been run by an audio engineer.

THE PAST.

In 1973, Jon Dahlquist founded a new loudspeaker company. This was occasioned by a new product, the now classic DQ-10 loudspeaker system. Jon, who had previously been involved in vibration and stress analysis for the Lunar Excursion Module, received a patent on a method of controlling time-delay distortion and diffraction effects in loudspeakers. From the first, the DQ-10 Phased Array™ was acclaimed for its open, transparent sound and lack of "boxy" coloration. Today the DQ-10 is a "must hear" for any music lover serious about purchasing a quality speaker system. In fact, the DQ-10 was recently named one of the ten most significant products of the decade by *Absolute Sound* magazine.



THE PRESENT.

Over the years, Dahlquist received many requests for a professional studio monitor which would approach the low coloration, accurate spectral balance, precise lateral and depth imaging with the openness of the Dahlquist DQ-10.

But to be a studio monitor it would also need four differences: wider dynamic range, higher power handling, greater efficiency, and it had to be a traditional

box-type enclosure. Box-type enclosures usually resonate in unpredictable ways, and such resonances color the sound. There is also the problem of diffraction, caused as sound waves travel across the baffle and re-radiate from the edge, grille frame, or even other driver frames.

And so, the DQM "Un-Box" enclosure was created. After much experimentation a special, imported graded-density particle board was adopted for the enclosure. With finer particles on the outer surfaces and larger particles at the center, this material is nearly acoustically dead. "Nearly" is not quite good enough, so the enclosure has a vinyl skin to further damp resonances. Each DQM model is also available as an "N" version, in which the vinyl skin is coated with 3M's Nextel finish, giving additional control over surface resonances. To further control resonances, a second side wall encasing a PVC film was added on the DQM-9, 9 Compact, and 7 Compact.

This still leaves the problem of diffraction. The sound waves which travel across the baffle must be eliminated or sharply reduced. Flocking proved effective but did not attenuate the surface waves enough. With the use of an electrostatic field, flocking fibres were end-aligned for maximum sound absorption. The entire surface of each DQM baffle is coated with electrostatically aligned fibres.

Selection of drivers was critical, but a list of all the factors used to select drivers would be lengthy indeed. Let's, then, look at just two aspects:

Coloration in loudspeaker drivers is primarily due to resonances in various components. The drivers used in the DQM series employ technology licensed from one of Europe's most innovative manufacturers. Coloration is exceptionally low due to the proprietary cone and dome materials used. In the DQM 9, 9 Compact, and

7 Compact, the driver chassis are made from a special inclusion-free zinc alloy which, apart from being exceptionally rigid, reduces resonances from this critical component.

Speed matching is a poorly-understood aspect of driver blending. For best transient response, openness, and definition, the driver's diaphragm must respond as quickly as possible to the input signal. Speed of start and speed of stop are equally important. It is tempting to say that faster is better in all cases but this is not true. Blend can be lost if the tweeter is very much faster than the woofer. In such cases, the tweeter "runs away" from the woofer and is heard as a distinct entity. For maximum definition, all DQM woofers have ribbon wire voice coils, allowing higher voice coil winding density for greater efficiency and motor action.

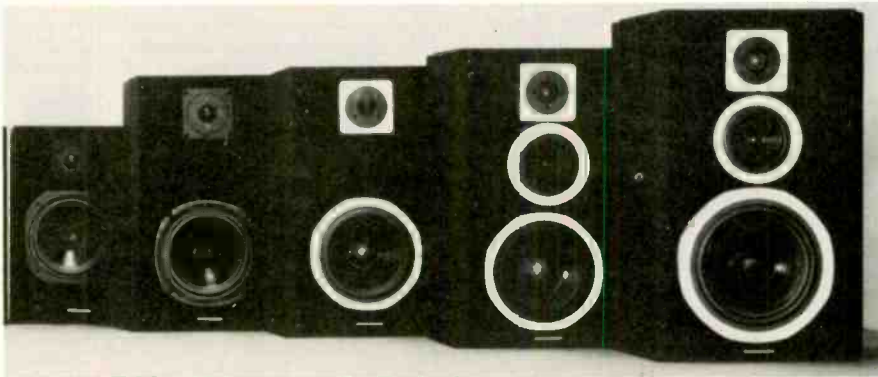
It goes almost without saying that the crossover points and slopes of a loudspeaker must be carefully chosen to insure proper spectral balance and driver blending. In the DQM loudspeaker series, other issues received special attention. For example, the inductors (coils) are made by Dahlquist to extremely tight tolerances for improved imaging. The capacitors are oversized, precision units which make for resolution of fine detail and help maintain accurate transient matching between drivers. No printed circuit boards are used for maximum performance and dynamic capabilities.

THE FUTURE

Currently, at Dahlquist, an even more complex design project is nearing completion. It is a vertical, phased array. Like its companion, the classic DQ-10, all drivers are aligned for minimum time delay and are mounted on minimal baffles for diffraction control. All of the traditional Dahlquist sonic attributes are taken another step toward perfection. It is a definitive example of driver blending and harmonic integrity.

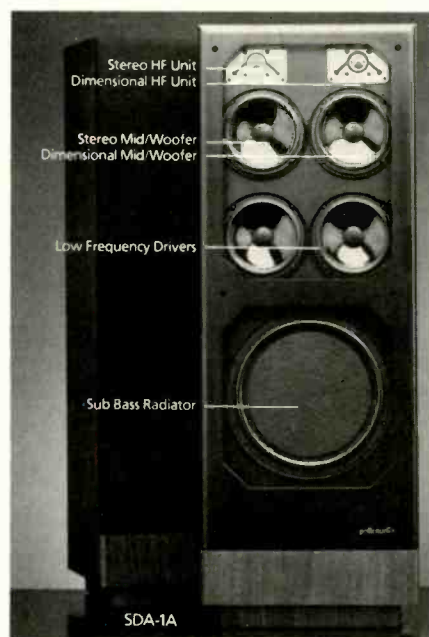
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CIRCLE NO. 33 ON READER SERVICE CARD

The Polk SDA Systems: the world's first true stereo loudspeakers.



A RADICALLY NEW TECHNOLOGY.

The critically acclaimed and Grand Prix award-winning Polk Stereo Dimensional Array (SDA) loudspeaker systems incorporate a unique and fundamentally revolutionary technology (patent pending). Without exaggeration, the design principles embodied in the SDAs could be said to make them the world's first true stereo loudspeakers. This new technology provides dramatically improved three-dimensional imaging, depth, and spatial fidelity—all of which can be easily heard and appreciated by novices and audiophiles alike.

THE MONO/STEREO DIFFERENCE.

Why do we refer to the SDA as the world's first stereo loudspeaker? Doesn't any pair of loudspeakers connected to a stereo amplifier become "stereo" speakers? Not quite. When the big switch was made from mono to stereo about 25 years ago, the basic technology and philosophy of loudspeaker propagation was never modified to take into account the fundamental difference between a mono and a stereo signal. The difference is this: Mono involves one signal that is reproduced by one speaker and is meant to be heard by both ears. Stereo, however, involves two separate channels; each channel's signal is meant to be reproduced by its individual speaker and—

here's the problem—heard by its individual ear. In other words, the left ear should hear *only* the left channel stereo signal from the left speaker, and the right ear *only* the right signal from the right speaker. Unfortunately, that's not what happens.

THE INTERAURAL CROSS TALK PROBLEM.

When each ear hears *both* speakers and signals, as occurs when you listen to conventional speakers in stereo, your hearing mechanism becomes psychoacoustically confused. There are too many signals arriving from too many different directions. This confusion prevents your brain from properly perceiving and processing the dimensional information that is present in conventional stereo recordings.

The spurious signal reaching each ear from the "wrong" speaker is a form of acoustic interference called interaural crosstalk. By a unique and psychoacoustically sophisticated procedure, the Polk SDA systems acoustically cancel interaural crosstalk; each ear hears only the appropriate channel's speaker, and the resulting overall improvement in dimensional realism is remarkable.

POLK'S ELEGANT SOLUTION.

The Polk SDA systems eliminate interaural crosstalk distortion by incorporating two completely separate and independently operating sets of drivers (called the stereo drivers and the dimensional drivers) into each speaker cabinet. The stereo drivers radiate the normal stereo signals, while the dimensional drivers radiate a *difference* signal. It is this difference signal that acoustically cancels the interaural crosstalk signal and thereby restores the stereo imaging lost in conventional reproduction. The

improvement in stereo imaging is striking.

SDA'S DRAMATIC AUDIBLE BENEFITS.

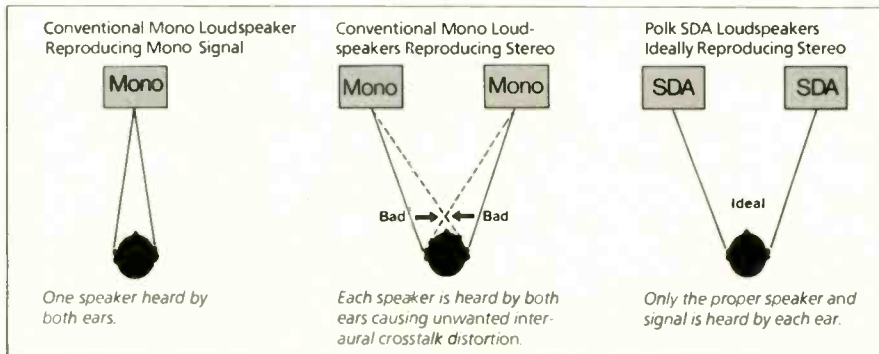
Critical listeners and novice alike are usually overwhelmed by the magnitude of the improvement achieved by Polk's Stereo Dimensional Technology. The perceived sound stage expands beyond the speakers and often beyond the walls of the listening room itself. You will find yourself transported to the acoustic environment of the original musical event. Information that is masked by conventional loudspeakers, but which is nevertheless present in the recording, is newly revealed for your enjoyment. You will hear instrumental relationships and subtle musical nuances on your existing recordings—tape, disc, or CD—that you never knew existed. FM and stereo video will benefit also.

Each instrument, vocalist, or sound becomes distinct, tangible, and firmly placed in its own natural spatial position. The improvement over conventional loudspeaker performance is dramatic. You will take great pleasure in rediscovering the records in your collection and the previously hidden joys contained therein. Simply put, the SDAs will enable you to fully experience in your own home the tremendous excitement, majesty, and pleasure of live music. As Julian Hirsch said in his review of the SDA system, "The result is *always* better than would be achieved by conventional speakers." We urge you to hear both SDA systems for yourself at your nearest Polk dealer; one listen is easily worth several thousand words!

Please write for full information on the revolutionary SDAs and our other more moderately priced, critically acclaimed conventional loudspeakers.

polkaudio

The Speaker Specialists®
1915 Annapolis Road
Baltimore, MD 21230



Nothing you buy will do more for the sound of your stereo system than a quality phono cartridge.

It's the smallest component in your system, but in terms of sound the phono cartridge is one of the biggest contributors. It's the only point at which the record is linked to the rest of your stereo system. So without a good cartridge, the world's most sophisticated turntable, amplifier and speakers will provide poor sound. In fact, they'll merely amplify the shortcomings of an inferior cartridge.

A WINDOW TO YOUR SOUND.

At Shure, we believe a phono cartridge should reproduce the sound of a record with crystal clarity. Like a window admitting light, a cartridge should convey the signal from your record to the rest of your stereo system without adding any color of its own. So instead of listening to sound with a predetermined character, you have the option of using your system's tone controls to tailor the sound to your personal taste.

A CARTRIDGE IS A TINY GENERATOR.

The cartridge is a miniature, precision-made stereo component that produces colossal results. Let's look inside a moving magnet cartridge (an innovation introduced by Shure). Sound reproduction begins when the (1) diamond stylus tip is put into motion by the record groove walls. This tip motion is then faithfully transmitted to a (2) miniature but powerful magnet by the (3) stylus shank. Inside the cartridge, this magnet is surrounded by (4) pole pieces, each wrapped with a (5) coil of copper wire. As the magnet moves, corresponding to the motion of the stylus tip, its magnetic field generates an electrical signal in the coil. This is the audio signal fed to the other components of your stereo system by (6) terminal pins bonded to the ends of the coils.

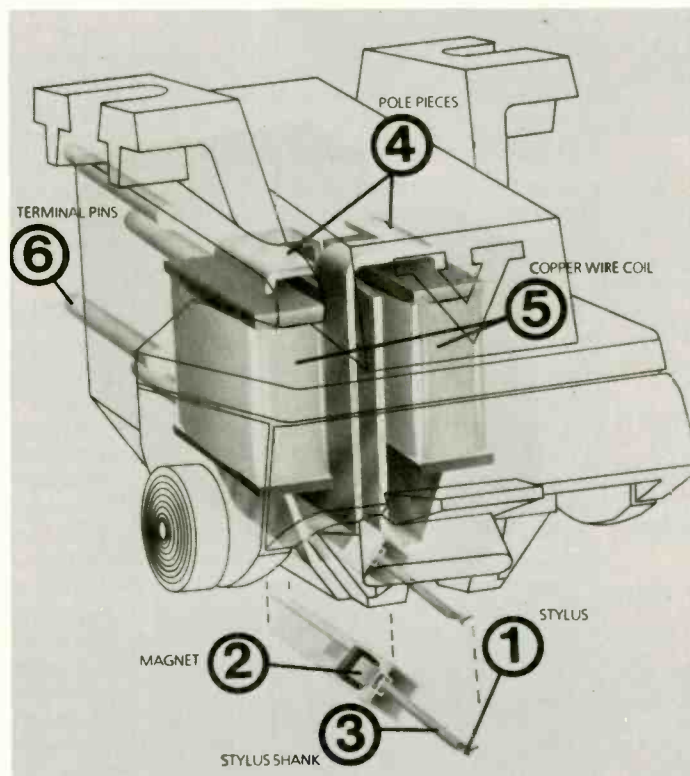
LITTLE MISTAKES MAKE BIG PROBLEMS.

Any electrical or mechanical error pro-

duced or transmitted by your cartridge will be amplified by your stereo system. That's why it's crucial that you choose a cartridge capable of handling all the sonic subtleties and sudden transients engineered into today's records—and able to overcome common playback problems like dust, static electricity, and record warp. A cartridge that does not have these capabilities will transmit sound which is distorted and fatiguing to the ear.

to triumph over harmonic distortion and raspy, unnatural sound. Poor trackability can cause permanent damage to your records. Shure originated the concept of trackability, and we've set the standard for others with our Total Trackability Index (TTI).

Shure is also famous for its research into tracing distortion, channel separation, and noise reduction—all crucial factors in distortion-free cartridge performance. The results are readily apparent in the world's finest phono-graph cartridges.



DISTORTION IS NO SIMPLE MATTER.

Phonograph reproduction is a surprisingly complex process. Each aspect must be carefully controlled in order to achieve distortion-free reproduction. One major aspect is frequency response. Flawless frequency response accounts for Shure's superior tonal balance. Shure's superiority in trackability is recognized worldwide. It is this ability to faithfully follow the complex undulations of the sound-encoded groove walls which allows Shure pickups

THE RIGHT WAY TO UPGRADE.

If the phono cartridge you're using isn't a Shure, it's time you switched. An inferior cartridge can cause permanent damage to your records and limit your listening enjoyment. A new Shure cartridge will protect the investment you've made in your record collection. It's designed to get the most out of today's sophisticated recordings, including digitally mastered, half-speed mastered, and direct-to-disc albums. To find out how your present cartridge measures up, ask your Shure dealer about our TTR117 Audio Obstacle Course record.

WHY SHURE?

For more than three decades, Shure has been the untested leader in phono cartridge design and development. We've introduced scores of innovations, like the dynamic stabilizer, the destati-

cizer, and the Side-Guard Stylus Protector. Every Shure cartridge is carefully tested and retested at all stages of manufacture. There's a Shure cartridge made to match your system and your budget. For a free copy of our catalog, call or write Shure Brothers Inc., 222 Hartrey Ave., Evanston, IL 60204. (312) 866-2553.

SHURE®
You'll Hear More From Us.

CIRCLE NO. 45 ON READER SERVICE CARD

The Point Source Design Philosophy (how to make loudspeakers that sound like music)

It's no secret that most loudspeaker systems are simply not able to fool your ear into thinking you're hearing live music. There are just too many giveaways to the fact that you are listening to a loudspeaker, not a live sound source. To cite just a few: Loudspeaker sound is typically boxy, inaccurately imaged, imprecisely defined, and lacking dynamic range.

Design Acoustics engineers have long sought an alternative to typical loudspeaker sound; and some of you may remember our omnidirectional systems that earned plaudits from Julian Hirsch and other reviewers. The properties we were searching for with multidirectional systems, we have finally achieved in simpler format by the use of Point Source Technology, or PST.

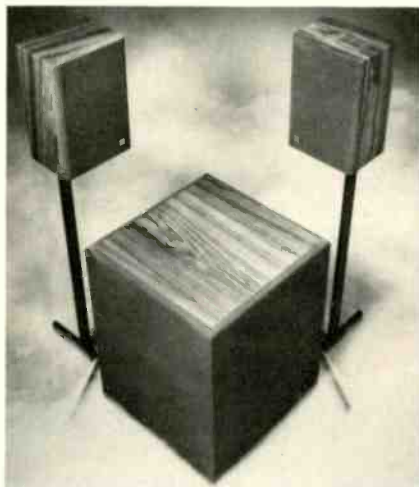
POINT SOURCE TECHNOLOGY.

Engineers describe the ideal loudspeaker system as an acoustic point source: a single, specific point from which all sound for a given channel radiates. Such a sound source, they point out, would produce a unified acoustic wavefront without diffraction effects and, of course, would be inherently phase accurate and coherent. Reproduced sound heard on such an ideal speaker system would be clearly defined and would accurately preserve the spatial properties of the original material.

THE BATTLE OF THE BAFFLE.

For several reasons, conventional loudspeaker systems are inherently unable to perform as point sources. The principal reason is that their large front baffles create acoustic *diffraction*. In addition to radiating directly from the drivers, the sound also spreads out across the baffle surface and radiates (diffracts) at panel edges and surface discontinuities. Result: Each sound reaches a listener's ears directly from the speaker cones, and additionally from several areas on the speaker system's front baffle surface. And since the length of each sound path varies, the same sound may reach the listener at different times. This causes phase cancellation and sonic confusion; frequency response is unpredictable and accurate acoustic imaging is impos-

sible. Obviously something should be done to reduce baffle size.



DEBAFFLING THE PROBLEM.

What can be done to reduce baffle dimensions while retaining superior bass response? The first thing an audiophile might notice about a Point Source system is that it seems to be lacking a woofer. Actually, the woofer isn't missing, it's been moved to a location where it can simultaneously do the most good—and the least harm. That location is facing downward at the *bottom* of the enclosure. This dramatically reduces the speaker system's baffle area and, therefore, acoustic diffraction effects. But aside from the diffraction advantages, the woofer finds itself in a new and beneficial location.



Placing the woofer in a down-firing position at a fixed distance from the system's integrated base achieves acoustic front loading of the woofer cone. Several advantages accrue from this technique. For one, the normal sealed cabinet rear loading of the cone is matched by the front loading. This both provides better control of woofer cone excursion and

lowers the system resonance (without power-wasting *mechanical* mass loading). Other benefits of the woofer location are the improved coupling to the room surfaces and the avoidance of room-boundary effects. The improved coupling provides more bass with less amplifier power, and the absence of boundary reflections smooths out the response in the critical lower midrange.

An important adjunct to PST is Design Acoustics' use of Optimized Decade Cross-overs. This permits the mid-woofer in the PS-30 system to handle the highly important 20-200 Hz range, while all image-producing frequencies are reproduced by small, easy-to-place satellites. As a result, power-handling capacity is increased enormously. The PS-LF woofer can handle 100 W continuous, with 1,000 W peaks, for eight hours. And the PS-5 midrange, a woofer capable of 70 Hz output, is not required to go below 150 Hz. The 1-inch soft-dome tweeter provides smooth, extended high-frequency response and high power-handling capability.

THREE PST SOURCES.

At the present time Design Acoustics has been able to engineer our Point Source Technology into three systems, each at a different price range. The PS-30 three-piece subwoofer/satellite system represents the highest current state of our technology. The three-way PS-10 (1" soft dome tweeter/5" midwoofer/10" woofer), and the two-way PS-8 (1½" dome tweeter/8" woofer) are physically scaled down representatives of the Point Source Technology. But they are nevertheless full expressions of the quality and sonic performance embodied in the Point Source philosophy. We invite you to convince yourself of the practical sonic reality of our PST theories at your nearest Design Acoustics dealer. Or write to us for brochures with specifications and further technical information.

**DA DESIGN™
ACOUSTICS**
An Audio-Technica Company

1225 Commerce Drive
Stow, Ohio 44224

Tandberg: a uniquely Norwegian approach to the design and manufacture of purist components.

Tandberg occupies a special position in the high-fidelity industry—not only because of our 50-year history as a producer of quality audio and electronic products, but also for our unique approach to product design and manufacture. In our design concepts, circuitry, and particularly in our attention to the nuances of sonic performance, Tandberg defers to none of the high-end "esoteric" manufacturers. Yet, as a major European electronics manufacturer, Tandberg is able to marshal technology, resources, and manufacturing skills that far exceed those available to any limited production high-end manufacturer. Although it may seem paradoxical, Tandberg could be considered a large scale producer of purist-level audio equipment.

The genuine virtues of mass-production technology (lower costs and higher reliability) are often unappreciated because of the inadequate performance of the components so produced. The sonic problems, however, are not the result of assembly-line procedures; their source is in the basic design of the products. Engineers employed by major manufacturers are seldom motivated to pay much attention to those subtle technical nuances that ultimately determine a product's fidelity. Their usual role is to build in additional features and more LEDs and, if possible, to lower manufacturing costs by extensive use of ICs. Music reproduction quality is frequently sacrificed for reduced costs.

HIGH TECH PURISTS.

Early in Tandberg's history it became company policy to provide our customers with the best of both worlds: State-of-the-art sonic reproduction with components produced by efficient manufacturing technology. That's why Tandberg's products remain affordable, despite their exceptional performance.

An excellent example of Tandberg's thinking—and our dedicated pursuit of purist goals—is provided by our recent investigation into the effects of capacitors on signal purity. Research has shown that the electrolytic capacitors used by most manufacturers for signal transfer between audio stages typically exhibit

5 percent or more dielectric absorption. This refers to the capacitor's tendency to "hang on" to the signal passing through it and thus superimpose its characteristics on the following signal. The electrolytic's ability to "store" voltage is sometimes used to advantage in FM-station memory presets, but when it occurs in the signal path it creates a subtle sonic blurring and loss of inner detail. Tandberg's solution to the problem was to convert all the capacitors to the more costly polypropylene and polystyrene types. This reduced the dielectric absorption to a mere 0.05 percent, and the problem disappeared.

Ceramic capacitors suffer from an allied problem: They tend to be voltage sensitive, and their rated capacitance changes as the signal voltage swings through its normal range. The high-frequency phase shift that results is the elusive cause of a harsh, metallic sound character. Again, the solution was to replace the ceramic units with highly stable polyester types.

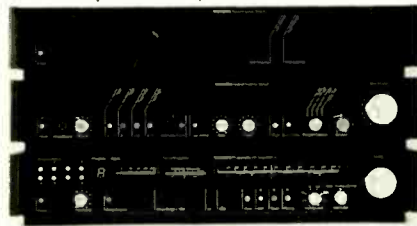
It should be made clear that in both the above examples, we are not referring to gross problems that would be immediately obvious to every listener, however inexperienced. But for Tandberg engineers and their critical listening panels, the distorting effects of the original capacitors—and the clarity that resulted from their replacement—were immediately audible.

Many other examples could be cited of Tandberg's intensive research into the little understood sonic problems of amplifiers, FM tuners, and, of course, tape recorders. Tandberg's engineering department has had a long-standing interest in the factors—positive and negative—that contribute to a component's sound quality. The purist dedication to sonic accuracy reflected in the products designed by that department continue to be appreciated by thousands of critical listeners around the world. Here are some brief examples of the Tandberg philosophy in practice:

THE TPA 3006A POWER AMPLIFIER.

Perhaps the most unique design to be introduced in recent years, the TPA 3006A features zero negative feedback, MOSFET output devices, and an exceed-

ingly high current capability (60 amps)—all of which contribute to its ability to effectively drive any available speaker system. It has evolved through five years of research to be the finest sounding medium-priced amplifier on the market.



THE TIA 3012 INTEGRATED AMPLIFIER.

Based on the same design philosophy, the TIA 3012 Integrated Amplifier mates a flexible high-performance preamplifier and a high current output (30 amps) MOSFET power amplifier. Given its ability to handle any loudspeaker load under any circumstances, we consider the TIA 3012 to be an exceptional value in a realistically priced integrated amplifier.

THE TPT 3001A TUNER.

The TPT 3001A Programmable Tuner incorporates a fresh approach to FM tuner design. Although it employs an electronic tuning section, it avoids the standard quartz synthesized digital format because of its unacceptable noise level. Tandberg's proprietary approach to FM tuner design has established new standards—and specifications and performance far above others on the market.

Probably because the audio industry in the U.S. began in the basement workshops of a group of dedicated early audiophiles, there has been a perception that "smaller is better." Admittedly, there is some truth in that statement, but only because large companies are usually not interested in making the investment in research and development required to produce components of the highest sonic and technical quality. Tandberg, for all the reasons discussed above, decided to make that commitment almost 50 years ago. With Norwegian tenacity we have persisted in our course and, we can say in all modesty, the world of hi-fi has benefited enormously.

Hear the purist sound of Tandberg at your nearest audio specialist dealer.

TANDBERG

TANDBERG of America Inc.
Labiola Court, Armonk, NY 10504
914-273-9150

CIRCLE NO. 2 ON READER SERVICE CARD

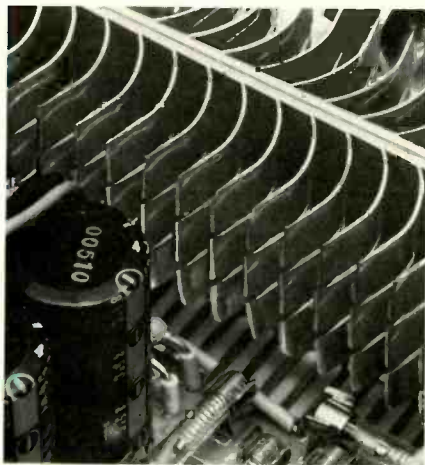
Five reasons why NAD high-fidelity components sound better.

Recent test reports have confirmed something music lovers have known for some time: All components, even ones with identical standard specifications, don't sound the same.

Audiophile magazines and hi-fi enthusiasts have found that a small number of companies make products that really do sound distinctly better than all the rest. NAD is one of these companies. At NAD, we're not overly concerned with standard specifications *unless they have an effect on musical accuracy in real-life listening situations.*



NAD 3150 Industrial Design by reinhold weiss design/Chicago



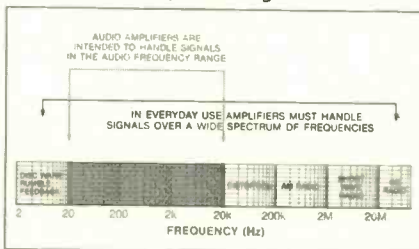
1 TURNTABLES THAT DON'T EXIST

When most companies test the phono section of their amplifiers, they don't bother to plug in a real turntable and cartridge. Instead, they plug in an audio signal generator.

This method of testing has produced some good-looking specifications for some not-so-good-sounding amplifiers. NAD amplifiers and receivers are designed for top performance with *real* turntables and cartridges. Their phono sections are musically more accurate, and they have less background "hiss" than most others.

2 THE HIGH COST OF REPRODUCING NOTHING

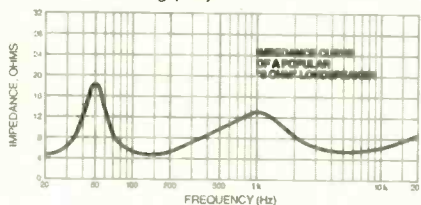
Most amplifiers waste a lot of their power reproducing things you can't or don't want to hear, like record warps, turntable rumble, and acoustic feedback. All NAD amplifiers and receivers use special circuits to filter out such spurious power-wasting signals. So *all* the amplifier's power is available for the task of reproducing music.



Frequency range of non-musical signals

3 LOUSPEAKERS THAT DON'T EXIST

Most loudspeakers have a rated impedance of 8 ohms. So most manufacturers test their amplifiers' power with an 8-ohm resistor. The problem with this approach is that in real life, speaker impedances are not fixed, but change with the frequency of the music being played.



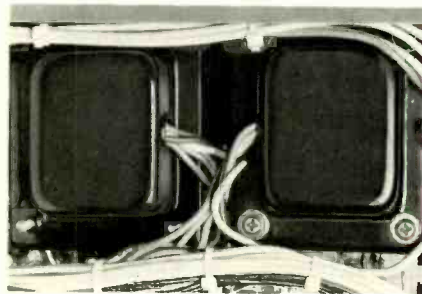
That's why NAD amplifiers and receivers are designed for use with real, varying-impedance speakers. In fact, all NAD amplifier sections can comfortably handle (and will deliver more than their rated power to) speaker impedances as low as 2 ohms. Most other amplifiers are designed to protect themselves by limiting their power as speaker impedances drop to low values.

4 TONE CONTROLS THAT ARE OUT OF CONTROL

Most bass (and treble) controls have strong and undesirable effects on the music's

midrange. So when you turn up the bass, for example, you often blur and muddy the vocalist and important midrange instruments.

NAD tone controls are psychoacoustically designed to provide musically useful changes in bass and treble response, while keeping midrange response accurate and clean.



5 YOU USE SOME OF THE POWER ALL OF THE TIME

And you use all of the power some of the time. But you don't use all of the power all the time.

Most of the time, an amplifier uses only a fraction of its full power to reproduce music. But most recordings include a few very demanding passages that require a lot of power. Sometimes more than the amplifier has to give.

When this happens, most amplifiers add noticeable amounts of harsh clipping distortion to the music. To deal with this problem, many consumers have purchased very powerful (and expensive) amplifiers.

But NAD has two sensible alternative solutions to such "transient" demands for high power. First, all our amplifiers and receivers use heavy-duty output transistors and a power supply that is capable, for brief periods of time, of delivering over twice the amplifier's rated power. This creates a "headroom reserve" which prevents most high-level transients from clipping.

Second, for very high level transients, those that exceed NAD's reserve headroom capacity, NAD uses a special Soft Clipping™ circuit that electronically eliminates the hard edge that distortion gives to music.

When you add up our 5 reasons, you'll see why NAD amplifiers sound better than the sum of their parts. Or better yet, listen for yourself at your nearest NAD dealer.

NAD ELECTRONICS

675 Canton Street
Norwood, MA 02062

CIRCLE NO. 31 ON READER SERVICE CARD

Maxell HGX Gold: The best investment for your VCR.

No matter how good your video tape recorder, the quality of its picture and sound is ultimately determined by your choice of video tape. And since all videocassettes must conform to strict VHS or Beta standards, at a quick glance they all look alike. But don't be fooled by superficial appearances; a premium quality cassette such as Maxell's HGX Gold has a highly technical inside story that explains its superior performance.

BASE BASICS.

Video tape is a high-technology product that brings together several dissimilar materials with radically different functions. The base film which carries the layer of magnetic particles is much more than just a narrow and very long strip of plastic. It and its 5-micrometer-thick magnetic coating are so intimately bonded that any flaws in the base film will come through as irregularities in the smoothness of the magnetic coating. These surface faults are a major cause of picture dropouts. To avoid them, HGX Gold uses a newly developed tensilized polyester film base that is the smoothest, strongest, and most accurate ever manufactured for a video tape. It provides the ideal base for a dropout-free magnetic coating. And its extra strength and dimensional stability insure that it can withstand the mechanical rigors of long-term VCR usage without deterioration of performance.

And to insure a smooth, stable tape flow through the complex twists and turns of a VCR transport, HGX Gold tape also has a special SR (smooth running) back coating designed to prevent possible cohesion either between tape layers or between the tape and transport elements.

PARTICLE PARTICULARS.

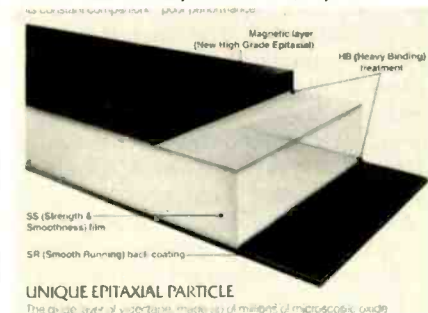
The physical and magnetic properties of the oxide layer carried by the base material are crucial to video performance. This layer consists of millions of magnetic particles distributed as densely and as evenly as possible over the surface of the base material. When exposed to the magnetic field of the VCR's recording head, the oxide particles become magnetized in patterns that represent the video signal. When the recorded tape is played, these magnetic patterns produce electrical impulses in the playback head. When processed by the VCR's electronics, these

electrical impulses replicate the original video and audio signal. The more accurately the magnetic layer can record and reproduce the signal, the better the quality of the picture and sound.

The shape, size, and magnetic properties of the particles are crucial to how well they capture the video signal. Particles that are large and irregularly shaped are unable to achieve the required packing density in the oxide layer and are, therefore, limited in the degree of detail they can reproduce. The idea is to have an oxide layer that covers the base film with as little wasted space as possible. And here's how we did it with HGX Gold.

To begin with, we made these particles, (gamma ferric oxide encapsulated in cobalt ferrite) much smaller in size and extremely uniform in shape. When applied to the base film, there is a significant reduction in the "wasted" space between the particles and, therefore, a substantial increase in tape performance.

The special magnetic and physical properties of our new epitaxial particle mean that, when recording signals hit the videotape, more of them are captured more precisely than ever before. And the more accurately the signals are captured on the video tape, the more accurate the color and detail you see on playback.



AVOIDING RUB OFF.

Many competitive oxide formulations also use special coatings to enhance their performance. But after repeated plays, these surface coatings wear off and find their way into the works of your VCR. HGX Gold particles aren't simply coated, their cobalt ferrite surface is epitaxially "grown" during the same process that produces the gamma ferric oxide core. The result is a precise, uniform layer that is integral to the particle's structure. No need to worry about it rubbing off and gumming up the works inside your VCR.

Another rub-off problem is responsible for the streaks and snowy image that trouble worn video tapes. In conventional tapes the oxide coating is held in place by an adhesive binder kept flexible by the use of plasticizers. Inevitably, the cements in the binder age and let go, probably not too long after the plasticizers have oozed away. Oxide and plasticizer contamination is the reason for video head cleaning—and worse, for video head wear.

You'll never experience binder breakdown or plasticizer ooze with HGX Gold, because the oxide layer and the back coating are joined to the base film by a process called molecular fusion. This bond is the strongest and cleanest available for a video tape. The molecular fusion technique totally outmodes troublesome plasticizers and adhesives.

THE SHELL GAME.

HGX Gold video tapes come in a housing that is built to tolerances 60% tighter than industry standards. All the internal moving parts and guides within the shell are precisely aligned—and built to stay that way. (There would be no point in designing a superior tape without also designing a shell that enables your VCR to fully realize its advantages.)



HGX Gold is available in all popular sizes for both Beta and VHS video recorders. Try some Gold today—you owe it to your eyes, ears, and VCR.



IT'S WORTH IT.

Maxell Corporation of America

60 Oxford Drive, Moonachie, NJ 07074

CIRCLE NO. 4 ON READER SERVICE CARD

It's not a cleaner, lubricant or anti-static agent—it's simply designed to make your records LAST!

The hi-fi world is full of record treatment devices: sprays, cloths, brushes, and vacuum cleaners. And most of them (but not all) will do some good under some circumstances. But, despite the dozens of well-intentioned products available, until three years ago there was nothing on the market that addressed the *real* problem of record longevity.

SNAP, CRACKLE, POP.

If you are like most owners of hi-fi equipment, you expend considerable effort in keeping your records clean. After all, your record collection probably represents at least as great an investment in time and money as your audio components—and it certainly would be harder to replace. But despite your best efforts, pops, ticks, and other noises have intruded into every disc you own. Why does that happen? Ed Catalano was asked that exact question by his daughter about five years ago. Unlike the rest of us, Dr. Catalano had both the training and the technology available to research the question of why discs deteriorate...and the inclination to do something about it!

Ed Catalano's doctorate is in physical chemistry, a field in which he has numerous patents and 35 years of teaching and research experience. Drawing on his experience in macromolecular physics and the sophisticated instrumentation available in his laboratory, Dr. Catalano began a lengthy research program on the basic physics of record wear.

Scores of records were played repeatedly under a variety of precisely controlled conditions and then subjected to analysis under a scanning electron microscope (SEM). The investigations yielded a series of findings, some previously known and expected—and some quite unexpected. For example, Dr. Catalano found

that the basic cause of deterioration is *not* constrained by cleaning and lubrication. And that the degree of damage increases exponentially with the number of plays. He also learned that all records, even freshly manufactured ones, have an enormous amount of groove-wall imperfections no matter how manufactured. These "blemishes" may not always be audible at first play, but have enormous subsequent significance.

SHOCKING NEWS.

There were two new and important findings: That the groove damage that occurs during normal play is *not* limited to the two points at which the stylus rides on the groove walls! And that, to Dr. Catalano's experienced eye, the damage as viewed with the electron microscope resembled the sort of shock-wave fracture that occurs in "disordered" solids. Based on the observed data, Dr. Catalano formulated a radically different theoretical model of the record wear process, which he subsequently validated by another series of experiments.

Dr. Catalano tells the story this way: "Our record wear model, which draws upon both physics and chemistry, is extremely successful in respect to describing what happens in the groove and therefore what to do about it. In technical terms, the major cause of wear damage is 'shock-wave ablation.' To put it simply, a shock wave is produced by the passage of the phono stylus; it consists of rapidly moving pressure waves radiating from the two areas of stylus contact.

When the shock wave energy impinges on a structurally weak groove area, such as a 'normal' groove imperfection—and the energy exceeds the cohesive forces holding the flawed vinyl surface together—vinyl fragments will literally be blown off the groove wall. Damage

occurs on the very first play, and increases as a function of both the number of plays and stylus loading."

THE LAST SOLUTION.

Once Dr. Catalano was satisfied with his analysis of the record wear process, appropriate methods of alleviating it could be developed. Although its physical chemistry may be complex, the LAST treatment can be simply described. LAST chemically enhances the molecular stability and therefore, the cohesiveness of the groove surface so that it is better able to resist the effects of stylus shock waves. Because the 30-second treatment affects the vinyl only to a depth of about ten molecular layers, there are no perceptible changes in the hardness or softness of the disc. And, since the LAST fluid becomes part of the groove wall, there are no residues to be picked up by the stylus. In fact, overuse is harmless.

The LAST treatment has been universally applauded by the super-critical editors of the audio underground publications. And numerous writers have made the point that LAST produces audible benefits far beyond its original purpose as a preservative. This can be accounted for by the fact that the groove surface integrity achieved by LAST also provides an improved interface between the indenting stylus tip and the rapidly moving groove walls. According to the editor of *International Audio Review*, LAST provides an almost 10-dB reduction in high-frequency IM distortion as measured on a TTR-103 test disc. Others have reported even greater improvements in overall fidelity from their LAST-treated discs.

A new record that is LAST treated, kept clean, and not physically abused can be played a minimum of 200 times without discernible wear. A disc treated today and re-treated every 200 plays or 10 years (whichever comes first) should be in pristine condition for your great-grandchildren. It is no wonder that over 100 radio stations and major libraries throughout the country (New York, Chicago, Berkeley, Stanford, and so forth) are LAST-treating their discs.

A full range of LAST record and stylus care products is available at fine audio and record stores. If not at your dealer, order toll-free, 800-223-LAST (in Calif., 800-222-LAST).

For more information, call 415-449-9449 or write to:

The **LAST** Factory

P.O. Box 41, Livermore, CA 94550

CIRCLE NO. 26 ON READER SERVICE CARD

New record, unplayed

New record, untreated,
played 50 times

New record, treated with
LAST, played 200 times



Mission...in the service of Music

Mission Electronics is one of those increasingly rare companies whose technological expertise is totally dedicated to the service of music. It is our intention—our mission, if you will—to raise the science of sound reproduction to the highest possible level. In working toward that end, Mission has in its short history become well established as a manufacturer of truly state-of-the-art products. Based in Huntingdon, England, Mission has achieved a formidable reputation in Europe that is only now reaching the United States.

DESIGN DIVERSITY.

Most audiophile equipment manufacturers have earned their reputations by concentrating their efforts on a particular component. Mission's reputation, however, is based not only on our superb loudspeaker systems, our phono cartridges, tone arms, turntables, and amplifiers are held in equally high esteem by knowledgeable audiophiles throughout the world. It should be understood that it was not merely the urge to have our fingers in a multiplicity of technical pies that drove us to become involved in designing such a wide range of equipment.



It is our position that without an in-depth technical and philosophical understanding of the problems of music reproduction, no single component can be optimally designed...and in any case, components are best designed as part of an overall system. The full explanation of our approach, which involves stage-by-stage bandwidth optimization, impedance matching, elimination of interface distortions, and so forth, is unfortunately more complex than can be covered in the limited space available.

THE 70 MK. II SPEAKER SYSTEM.

An example of our special approach to product design is provided by the new Mk. II version of our smallest loudspeaker, the Mission 70. Our design objective was to produce a very compact system that was capable of handling the frequency range and dynamics of live music without requiring an excessive amount of amplifier power. Satisfaction of that goal automatically assures the ability to reproduce digital master tapes, while remaining linear at all listening levels.

It is not generally appreciated that, for several reasons, it is far more difficult to design an excellent small speaker system than an excellent large one. A small enclosure's limited internal volume and high internal acoustic pressures demand special construction techniques. These are needed to suppress reflections or resonances occurring both in the air mass inside the cabinet and in the cabinet walls themselves.

SPECIFICATIONS MISSION 70 MK. II

Frequency range:	40 Hz-20kHz
Frequency response:	60 Hz-20kHz
Impedance, nominal:	8 ohms
Recommended power:	20-75 w/ch
Sensitivity:	89dB (1W/1m)
Tweeter, dome:	3/4" Polymer
Woofer, cone:	7" Plastiflex
Crossover freq.:	2.2 kHz
Cabinet (h _w x _d):	14x8 1/2x8 1/2"
Finish, grille:	Walnut, black

RESONANCE CONTROL

If not properly controlled, enclosure resonances blur transients and impart a nasal, muddy, or boomy quality to upper-bass notes and male voices. In the Mission 70, internal resonances and standing waves are absorbed by special Mission-developed open-cell acoustic-foam blocks that occupy most of the enclosure's internal volume. Special construction techniques were employed in the 70's cabinet to achieve the desired acoustical characteristics without the need for heavy panels and internal bracing. We used a three-layer construction, thin panels of high-density composition board sandwiching a specially developed visco-elastic material. This arrangement provides an optimum combination of structural rigidity, internal damping, and low mass.

Most manufacturers take their cabinet construction for granted—with the expectation that their customers will also. We

have discussed assembly details simply to illustrate the depth of our concern for every aspect of design that affects the sonic performance of our products. But, of course, the main determinant of a speaker system's performance is the quality of its drivers and crossover.

THE DRIVERS.

The 70 employs a 7-inch woofer with a unique Plastiflex cone crossed over at 2.2 kHz to a 3/4-inch Ferrofluid-damped polymer dome tweeter. The critically designed six-element crossover network operates in conjunction with Mission's inverted driver geometry to provide a startlingly realistic stereo sound stage.

Among the performance parameters detailed in the specification chart at left there is one whose significance is not universally appreciated. A loudspeaker's sensitivity specification indicates its efficiency in converting an amplifier's electrical output into acoustic energy. Every 3 dB increase in speaker sensitivity halves the amplifier power needed for a given acoustic output. The logical answer, therefore, to the wide dynamics of digital program material is *not* more powerful amplifiers—although Mission is prepared to supply them. Instead, we prefer to design loudspeaker systems that can deliver digital peak levels without requiring enormous power inputs.

It's an unfortunate law of physics that as a speaker system is made smaller, either efficiency or low bass is sacrificed. Mission has not been able to repeal that law, but through computer analysis of the relevant parameters we have been able to optimize the electro-acoustic configuration of the system. The 70's 89-dB sensitivity rating is exceptional for its size and frequency response; it can provide more and better sound from your existing amplifier.

At this point, a critical listening session at your Mission dealer is worth far more than anything we could add. Of course, there is much more to the Mission Electronics story, and we would be pleased to make it available to you either by mail...or better yet, at your nearest Mission dealer. We would very much appreciate the opportunity to *demonstrate* the Mission qualities that we've been telling you about. Thank you.



For Further Information
Call 800-828 7153 or
416-673 3777

CIRCLE NO. 50 ON READER SERVICE CARD

The Belles Story: Cost-effective quality through superior design.

Dave Belles, who was personally responsible for the design of the sophisticated audio/video switching system at the Cape Kennedy Space Center, looks at electronic design somewhat differently than most engineers. His viewpoint: Any truly sophisticated design is *inherently* cost effective; it achieves the desired result with a minimum of circuitry and components. In addition, any device with a "tight" design is always more reliable than one with a larger-than-necessary number of parts.

The first audio product offered by the Belles manufacturing facility in Rochester, N.Y. was a very expensive pure Class-A power amplifier that rapidly gained a reputation for its very fine sound quality. However, Belles felt that with sufficient design effort, Class-A sonic performance could be embodied in more affordable products. And the results of Dave Belles' sophisticated cost-effective approach are expressed in the Belles I and II power amplifiers, and the Belles DMC and DMM Class-A preamplifiers.

HAND SELECTED DISCRETE COMPONENTS.

If you examine and listen to any of the Belles products, it should become evident that they have *no* competition at anywhere near their price. Manufacturing costs are concentrated where they count—in parts quality *and* sound quality. But Belles certainly *is* willing to increase his parts count when there are sonic benefits to be derived. For example, most manufacturers use integrated circuits

(ICs) to reduce costs. Belles would have been pleased to go that route also, except that the cost savings exact a price in sonic quality. Belles' use of top-grade discrete components in all critical circuits increases the parts costs by a factor of 20, but it also improves the sonic performance to an astonishing degree. All transistors are tested and matched at the Belles facility, and expensive polypropylene and other "poly" capacitors are used in all critical circuits to ensure state-of-the-art sonic performance.

Similar attention is focused on the mechanical and use-related aspects of the Belles products. For example, all input connectors have special low-loss insulation and are machined nickel cadmium (rather than stamped) for ruggedness and positive contact. All knobs are machined aluminum, and the smooth feel and easy, positive operation of all controls and switches reflects Belles' concern for the human engineering aspects of his products. In their price range, the U.S.-made Belles components are unexcelled in quality and performance—and by any standard, they are superb products.

THE POWER AMPLIFIERS.

The sonic performance of the Belles I and II power amplifiers belies their comparatively modest cost. The Belles amplifiers are designed to be able to deliver full power—and reproduce a square wave—with any known speaker load, however complex its reactance may be. It is this freedom from speaker loading effects that gives the Belles amplifiers the special openness and freedom from harshness and "glare." Additional factors contribut-

ing to the Belles' superior sound quality are the smooth and stable clipping performance (with virtual absence of odd-order harmonics) and the low phase shift, which preserves musical harmonic relationships over the full bandwidth and dynamic range of the amplifiers.

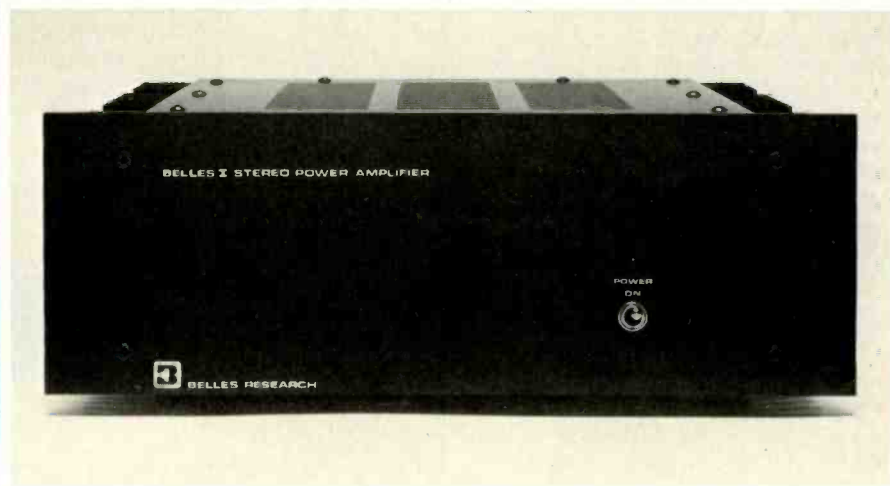
Belles eliminates another significant source of distortion by designing thermally stable power amplifiers that operate safely *without* special protection circuits. Such circuits are notorious for partial and premature activation when faced with certain critical combinations of speaker load and signal. The result is that many amplifiers run out of power long before their rating is achieved.

THE PREAMPLIFIERS.

The Belles DMC and DMM Class-A preamplifiers embody and express the same philosophical design approach as the Belles power amplifiers. Among their features are: Total phase linearity and stability from input to output and at all signal levels. (A square wave can be reproduced through any high-level input, or through the phono inputs with a test record.) Discrete circuitry with premium quality parts (tested and matched at the Belles factory) is used throughout. Selected premium high-gain, low-noise transistors are employed in the RIAA stages to ensure precise performance. The high gain of the DMC's phono section allows low-output moving-coil cartridges to be used straight-in. External-load sockets with gold-plated contacts provide for critical matching of *any* moving-coil cartridge.



Our confidence in the quality of the Belles Research products is expressed in our warranty. In addition to our limited warranty against manufacturing defects for a full three years, all Belles components are also guaranteed to meet or exceed their published specifications for the same period.



**Belles Research
Corporation**

A-1 Country Club Road
P.O. Box 65
East Rochester, New York 14445

CIRCLE NO. 3 ON READER SERVICE CARD

ADS discusses some of the reasons why amplifiers do—or don't—sound very good.

As a loudspeaker system manufacturer, ADS has long been aware that a surprisingly large number of amplifiers fail to deliver their rated performance when connected to low-impedance or reactive loudspeakers rather than test bench load resistors. Our new line of Atelier audio components is designed specifically to cope with this long-standing problem. And in addition to fulfilling the normal criteria of low distortion and good signal-to-noise ratio, a well designed amplifier should have a large dynamic-power reserve and the ability to protect itself without distorting. Our Atelier A2 Integrated Control Amplifier, rated at 100 watts per channel into 4 ohms, is an excellent example of ADS' approach to providing all these factors in a stylish and compact package.

HIGH-POWER RAIL SWITCHING.

The novel power supply design in the A2 is largely responsible for its special performance properties. The European term for a power-supply output is "rail," hence we refer to our signal-controlled two-level power supply as a "rail-switching" design. ADS' implementation of this idea in the A2 consists of a full complementary amplifier, each half of which has its output devices connected in series. One device in each half is fed from the low-voltage rail; the other from the high-voltage rail. A sophisticated monitoring circuit senses the signal level and switches the audio signal path to the appropriate output devices. The control circuitry is carefully designed to switch the high- and low-output devices smoothly on and off without generating transient noises or distortion.

When the A2 delivers 5 watts of signal to a speaker load, it produces only about 20 watts of heat. A conventional amplifier wastes about 50 watts. The rail-switching system's improved efficiency results in lower operating temperatures, less need for ventilation and heat sinking, greater reliability, and the ability to use a much smaller chassis.

The fact that the high-voltage supply is standing by, fully charged and waiting to deliver power as needed, gives the A2 the excellent dynamic headroom capability

demanding by digital material. Although rated at 100 watts per channel into 4 ohms, the A2 has an IHF dynamic headroom of 3 dB, or 200 watts. It is evident that the A2 easily has the muscle to provide as loud and clean a signal as might be desired, whatever one's taste in music.



LOW-IMPEDANCE AND REACTIVE LOADS.

When faced with low-impedance speaker loads, most amplifiers are unable to achieve their rated power. Their power supply and output stages simply cannot deliver the required current. (When the load impedance is halved, the output current doubles for a given signal level.) Since speaker impedance varies with frequency, and a nominal 8-ohm speaker might measure anywhere from less than 4 to over 25 ohms, you can see how some amplifiers might have trouble driving some speakers.

The A2 is one of the very few amplifiers fully rated for operation with 2-ohm loads. Its toroidal power transformer uses heavy gauge copper windings and a grain-oriented silicon steel core for low losses and high current output. The output devices themselves are high current bipolar units. The high current capability in both the power supply and the amplifier's output circuits is responsible for the A2's ability to drive two pairs of 4-ohm speakers at high power, cleanly and without strain. And the ability to drive low impedances also makes the A2 ideal for driving reactive speaker loads.

PROTECTIVE MONITORING.

As part of its protective system, the A2 has front-panel LEDs activated by input/output comparator circuits. These monitor signal quality and unequivocally warn the user of any non-linearity in the amplifier, whatever its cause. (The LEDs light when distortion on peaks exceeds about 1 percent.) The LEDs also immediately signal any problems caused by shorts,

excessively low impedance, or other load faults. The combination of an early-warning alert to potential trouble and a protection system which eliminates unnecessary triggering provides complete amplifier and speaker protection free of noise and voltage spikes.

QUALITY AND QUANTITY OF DISTORTION.

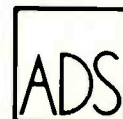
Distortion has become a complicated issue since the discovery—or invention—of a variety of dynamic distortions. These go by such names as transient intermodulation distortion, slew-induced distortion, and so forth. Everyone agrees that it is important to have low distortion and an adequately fast slew rate (the rate at which an amplifier can change its output voltage), but there is no agreement as to how low is low enough and how fast is fast enough.

A 100-watt 20-kHz sine wave signal has a maximum slew rate of 3.6 volts per microsecond. In music, the high frequencies are always at lower levels than the mid- and low-frequency components, so that in practice, signal slew rates seldom reach even 1 volt per microsecond. Considering the realities of music reproduction, it is evident that any amplifier that can reproduce a 20-kHz sine wave at rated output with less than 0.2 percent THD has an adequate slew rate. The A2 easily meets that criterion. In fact, any well-designed amplifier with low "standard" distortions (IM, THD) from 20 to 20,000 Hz is likely to have low dynamic distortions.

FINAL THOUGHTS.

Although we have limited the description of the A2 to its inner technical story, be assured that it has a full complement of features and functions. These include a built-in moving coil preamplifier, an enormously useful dual input selector that separately routes the signal to the tape and the amplifier outputs, and a host of other carefully designed controls. Considering its engineering innovations, care in construction, and elegant appearance, the ADS Atelier A2 is clearly unexcelled in its class.

For complete technical details and specifications on the A2 control amplifier and other fine components in the Atelier Series, write to:



Audio apart.

Analog & Digital Systems, Inc.,
One Progress Way, Wilmington, MA 01887

The Room/Loudspeaker: One System

Allison loudspeakers look and sound different from all others.

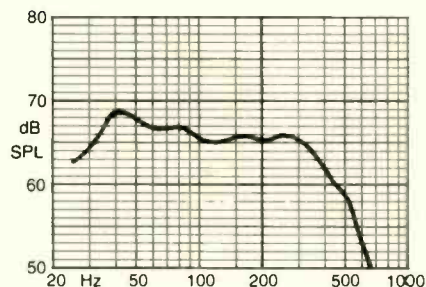
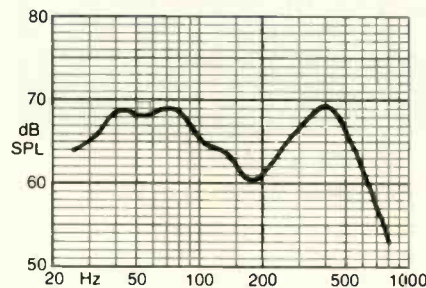
All of our systems have smooth, very-wide-range drivers (which we design and build ourselves). Our speakers have extremely low distortion and high output capability, handsome and sturdy cabinets, advanced crossover designs, and are produced using rigid quality-assurance procedures. All of these are necessary for any top-class loudspeaker, but they are not sufficient to account for the international recognition that Allison has achieved for accurate, life-like sound reproduction. Something extra is needed for that, and Allison systems do have unique design advantages that bring us closer than others to the goal of realism. Among these advantages is our patented Room-Matched[®] enclosure design.

Sound reflections from room surfaces increase a loudspeaker's low-frequency output, but decrease output in the middle-bass range. Consider a typical box loudspeaker system positioned in a room so that its woofer cone is about two feet from each of the three nearest room surfaces—say, the floor and two intersecting walls. When the speaker is radiating a very low frequency the cone moves relatively slowly. If the radiated frequency is 40 Hz, for example, it takes 1/40 second (25 milliseconds) for the cone to execute one complete forward-and-backward cycle. Each half of the cycle takes 12½ milliseconds.

As the cone begins a forward movement it generates the start of a compression wave. This impulse travels at the speed of sound (1,130 feet per second) to each of the room boundaries 2 feet away and is reflected back toward the woofer cone, arriving there some 3½ milliseconds after it left, while the woofer is still generating the compression half of the sound cycle. The reflected waves increase the instantaneous pressure seen by the woofer and enable it to radiate more power than it could in free space—a maximum of 9 dB more power at the extremely low frequencies, where the reflected pressure wave is virtually in perfect phase with the woofer's motion.

But when the woofer radiates higher frequencies, the cone must reverse its motion more quickly. At 140 Hz, for example, the cone reverses direction after

3½ milliseconds, attempting to create a rarefaction—just as the three compression wave reflections begin to arrive back from the boundaries two feet away. In this case the reflected pressure is completely out of phase with the cone motion, decreasing its radiation efficiency some 11 dB below the anechoic output. That is the worst case: a 20 dB variation in power output from +9 to -11 dB when the woofer is equidistant from the three nearest room surfaces. And this 20 dB variation is produced by a loudspeaker system which measures flat in an anechoic chamber!



Averages of two sets of 28 reverberant-field frequency response curves taken at actual listener positions in five real rooms. The top curve is for an excellent conventional box system, with only the woofer operating, placed at the original speaker locations in these rooms. The bottom curve is for the woofer section of an Allison One system placed at the same locations. Data reproduced from "The Sound Field in Home Listening Rooms II," *Journal of the Audio Engineering Society*, Vol. 24, No. 1, Jan/Feb. 1976.

Usually the boundaries are not equally distant from the woofer and the effect is not as intense. Typically, the power delivered by the woofer to a listening room varies over a range of 6 to 12 dB from a measured flat response. Measurements in anechoic chambers provide no indication of these effects.

An uncontrollable variation in frequency response of this magnitude would be considered intolerable if it originated in a phono cartridge or an amplifier. But it is certainly just as audible when

it originates in a loudspeaker system.

How can this be dealt with? The most elegant solution is to mount the woofer of a system as close as possible to adjacent room surfaces, so that the reflections arrive back at the woofer cone very quickly (for a spacing of six inches to the woofer center, about one millisecond). Then set the crossover no higher than 450 Hz or so; at that frequency, each half-cycle of woofer cone motion takes 1¼ milliseconds. The reflected pressure then is essentially in phase with the woofer's motion, and increases its power output, over its entire operating range. Flat power output from the system is thereby made possible (see chart).

This requires a three-way loudspeaker system design with separate mid-range and tweeter units, because it is not practical to operate a high-quality tweeter down to a 450-Hz crossover point. Consequently, in a less expensive two-way system with the woofer operating up to 1 or 2 kHz, the room-surface reflections will be out of phase at some frequencies within the woofer range.

Although the problem cannot be avoided in a two-way system, its severity can be minimized with our Room-Matching technique. The system is designed so that the frequencies of the out-of-phase reflections are as far apart as possible; this prevents the adverse effects from being cumulative. And that is equivalent to saying that the distances from the woofer to these surfaces should be as different as possible.

In Allison two-way models this placement is facilitated by location of the woofer in the top panel of a cabinet designed to be used against a rear wall, or—in models designed to be placed on the floor away from any wall—at the very bottom of the front panel. The distance to one room boundary is thus held to the absolute minimum, which maximizes the possible ratios of distances. The smoothness of bass output in practical use of these systems is measurably and audibly better than it is for any conventional bookshelf design. Only the three-way Allison systems are superior in this respect.

Reprints of technical papers and articles on the Room/Loudspeaker system are available free on request. Write or call toll-free (800) 225-4791; in Massachusetts, (617) 237-2670.

ALLISON ACOUSTICS INC. 7 Tech Circle, Natick, Massachusetts 01760

Concord— The serious car stereo company.

Today, for the first time in the history of hi-fi, car stereo equipment is out-selling home audio components. For the consumer, that fact has had both negative and positive consequences. On the negative side, new companies have flocked to car stereo like flies to honey, introducing whatever "bells-and-whistles" products they thought might get them a piece of the action. On the positive side, the growing consumer interest has encouraged a 25-year-old audio company such as Concord to make substantial new investments in car stereo research and plant facilities.

As a matter of fact, Concord is the only U.S.-owned car stereo company with its own wholly-owned overseas engineering and manufacturing facilities. (Most U.S. companies put their brand name on models bought from independent overseas manufacturers.) Our customers are assured that our in-house engineering and quality control are consistently at state-of-the-art levels, rather than at the mercy of a variety of unknown overseas suppliers.



HPL-532

SUBSTANCE VS. FLASH.

The novice car stereo consumer, lacking the sophistication of the audiophile, usually finds it difficult to differentiate between two classes of products: those with true performance quality and those seeking a sales advantage through exaggerated specs and flashy features. In the more than two decades that Concord has been in the audio business, it has always been our policy to play it straight with the consumer. And among those who recognize quality, that policy has paid off. When *Stereo Review* did comparative road and laboratory tests on ten brands of car stereo receivers (Jan. 1983), Concord came out a clear first in a majority of the test categories and a close second in the rest. And when the manufacturers of high-end accessory power amplifiers and speakers at the recent Consumer Elec-

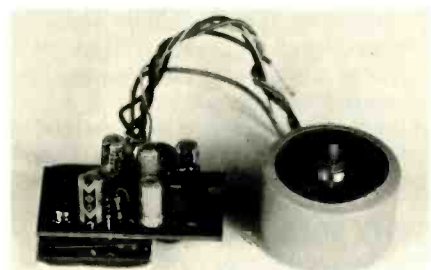
tronics Show needed the best sounding and most reliable car stereo receivers to drive their equipment, no less than fifteen of them came to Concord.

THE TECHNOLOGICAL PAYOFF.

Concord's enviable reputation in car stereo has come about through critical attention to technology. For example, the quartz synthesized tuner in our state of the art HPL-532 has a unique digital four-gang tuning section. Measurably, this provides an astonishing 1 microvolt sensitivity, practically, the HPL-532 picks up more stations—and delivers them cleaner and with less background noise.

TAPE PERFORMANCE.

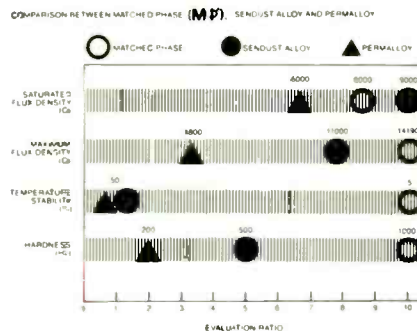
The heart of the tape transport in the HPL-500 series is an electronically controlled DC servo drive system that holds motor speed to $\pm 0.5\%$ accuracy. (Most motors typically do no better than $+3, -2\%$.) This means that wow and flutter and other tape speed irregularities will be minimized, despite variations in battery voltage, and tension and friction changes within the cassette shell. In addition, the motor's use of precision bearings and beryllium copper brushes extends its estimated operating life to double that of conventional units. In short, our special motors work better and longer.



CONCORD®
DC SERVO MOTOR

The other vital element in any car stereo tape mechanism is, of course, its tape head. Until fairly recently, sendust alloy tape heads were the very best available. But Concord's Matched Phase Amorphous Core head is the measurable equal or superior to sen alloy in every significant parameter. For example, compared to sen alloy, this head has 29 percent better resistance to signal saturation, and 17 percent greater resistance to wear. Even our least expensive units pro-

vide the excellent performance of sen alloy heads; and, of course, our top models use our Amorphous Core heads.



Our transport mechanism is also quite special. After extensive tests, Concord decided that the almost universally used side-loading transport mechanism (which takes the cassette narrow end first) had inherent design flaws. Concord's transport mechanism—which accepts cassettes tape-side-in—minimizes problems of tape skew and azimuth misalignment. Our head and tape guides are fixed, rather than part of an imprecise moving assembly. Practically, this means that with Concord's front-loading mechanism, you hear the tape's full recorded frequency response every play.

FURTHER AMPLIFICATION.

Concord has certainly not neglected the amplifying section that delivers the fidelity of the tape player and tuner to your speakers. Unlike many car stereo manufacturers, Concord employs rating standards similar to those used for home audio equipment. Our HPL-500 series models are rated 12 watts per channel from 30 to 20,000 Hz at 0.8% total harmonic distortion into 4 ohms. If we use the looser terminology preferred by some manufacturers, the same equipment has a 50-watt rating. But whatever ratings are used, Concord's amplifiers have a clarity, frequency range, and power reserve that allow them to sound clearly better than others of far greater rated power.

As you may imagine, we have only been able to touch on the high points of what makes Concord preeminent among car-stereo manufacturers. If you would like more information on Concord's HPL-500 series of car stereo units (plus data on our speakers and power amplifiers), please write to us at:

CONCORD®

6025 Yolanda Ave.
Tarzana, CA 91356-0010

CIRCLE NO. 11 ON READER SERVICE CARD

The TRIAD 70. The elegant marriage of deep bass and superb imaging.



Most loudspeakers present demanding music lovers with a frustrating choice. For the convenience and imaging advantages of small speakers, they must give up deep bass. For deep bass, they must accept the imprecise stereo imaging typical of large speakers.

The three-piece Triad 70 speaker system solves this dilemma in a way that's highly innovative, sonically convincing, and visually pleasing.

CONVINCING DEEP BASS THAT CONVENTIONAL SMALL SPEAKERS CAN'T DELIVER.

A basic fact of speaker design is the relationship of enclosure size and resonance. The smaller the enclosure, the higher the resonance—which determines the lower limit of bass response. There's no way around this. That is, no conventional way.

The Triad 70 gets around it with a revolutionary amplified woofer. The circuitry of this specially-designed built-in 70 watt amplifier is proprietary. It has U.S. and international patents pending.

But we can reveal that this special powered woofer is able to operate well below its resonant frequency, and delivers bass response down to 24 Hz, flat within ± 3 dB. That's two full octaves below the limits of conventional small speakers. So with the Triad 70 you have deep bass plus superb imaging.

SUPERB STEREO IMAGING THAT LARGE SPEAKERS LACK.

Large speakers often suffer from baffle diffraction effects—where sound radiates

from different areas of the enclosure. These multiple sources confuse the ear and brain, blurring and obscuring the stereo image. Speaker designers know this, just as they know that the ideal stereo sound source is a point from which all audible frequencies are uniformly dispersed. The sonic illusion of a musical soundstage can then be perfect. Such a perfect speaker doesn't exist, of course, but the diminutive Triad satellites come convincingly close.

Proper phase and time relationships are also critical for optimum imaging. The Triad satellite's tweeter is set back from the midrange driver the exact distance for proper time-offset correction. (See photo above.) The result: all frequencies arrive at your ear in the correct phase relationships, and with their harmonics and overtones in the correct sequence, thereby preserving the clarity and detail of the original performance.

WHY SMALL, LIGHT DRIVERS IMPROVE TRANSIENT RESPONSE.

Music, even a single instrument or voice, is incredibly complex and constantly changing, placing enormous demands on each component in the audio chain. The sudden changes in the music—transients—are more easily followed by small, light drivers than by large, heavy ones. It's basic physics; the smaller the mass, the less work required to move it. And it's why the drivers in the Triad system are the smallest available that can reproduce the full audible spectrum at satisfying levels in your home.

FLEXIBLE PLACEMENT, SIMPLE CONNECTIONS.

The Triad 70's small size and attractive design allow great flexibility in placement. Many users will take advantage of the optional stands, and place the speakers out from the walls for optimum imaging. Those preferring unobtrusive speakers can use their Triads on even the smallest bookshelves.

Those unfamiliar with three-piece speaker systems will be relieved to know that connecting the Triad is simplicity itself. The woofer is connected to the speaker terminals of the amplifier, just as with any other speaker system. Then the satellites are connected to the woofer, and the woofer is plugged into the wall. That's all there is to it.

THE ALL IMPORTANT TEST: HOW THE MUSIC SOUNDS.

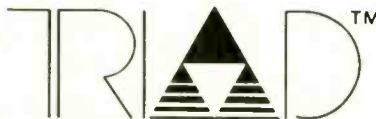
Clearly, the most important reason for selecting a speaker system is its ability to satisfy your musical demands. Please bring your favorite recording to your Triad dealer. We suggest you close your eyes when auditioning the Triad. You'll hear the individual performers spread out in front of you, instead of sensing the speakers as the sound source.

As for the music, you'll be astonished with its realism. If it includes a double bass, you'll almost feel the strings vibrate. You'll hear and feel a genuine low C from the pipe organ. The round, smooth warmth of the cello blended seamlessly with rich human voices. The well-defined shimmer and clarity of a brushed cymbal. All transparent and natural. Enjoy it.

ELEGANT AND AFFORDABLE.

The Triad 70 speaker system is impeccably finished in rich oiled walnut. Other woods are available on special order. The suggested retail price is \$575. A set of three matching walnut stands is \$250; black metal stands are available for \$89. If you wish to augment the bass response of your present speaker system, the Triad 70 woofer is available alone for \$350.

For further information, including the name of the nearest Triad dealer, please write or call us. Our toll-free number is 800-525-4018. In Colorado, Alaska, Hawaii, and outside the U.S. call 303-925-3700. Telex 296408 ADG UR.



Acoustic Design Group
P.O. Box G-3, Aspen, CO 81612 USA

Ceramics Technology and Audio Design...Kyocera reveals some of the secrets behind their success in the hi-fi marketplace.

Kyocera is a relatively new name to American audiophiles, but the products appearing under that brand are produced by one of the largest and most respected manufacturers in Japan. The U.S. brand name Kyocera is actually a contraction of the original Japanese company name: Kyoto Ceramics.

Today, ceramic elements play a key role in scores of solid-state devices and electronic components. Kyocera's total command of ceramics technology enables them to create materials for applications far beyond what were once thought possible.

As a case in point: the special qualities of ceramics are just beginning to be explored for high-fidelity applications. Not only can ceramic materials advantageously replace the structural and cosmetic plastics used in most audio components, but the special physical properties of ceramics can be of enormous benefit for purely electro-acoustic reasons.

ELIMINATING BAD VIBES.

It is generally acknowledged that unwanted vibrations are a major obstacle to achieving quality sound reproduction. Spurious vibrations and resonances can cause frequency response irregularities, loss of musical detail, and even a loud howling when tone or volume controls are turned up too far.

The dips and peaks in frequency response occur because parts of the turntable assembly tend to resonate at audio frequencies. These mechanical vibrations, depending on their phase, can either reinforce or cancel the audio frequencies at which they occur. The loss of musical detail happens for the same reasons except that *sustained* undamped resonances are responsible. Howling (technically known as acoustic feedback) happens because the turntable base is being vibrated directly (or indirectly via the surface on which it rests) by the sound from the speakers. The vibration reaches the cartridge, is fed through to the speakers, returns to the cartridge again and builds to a howl as it repeatedly makes the return trip.

THE CERAMIC STORY.

To resist or damp vibration, a substance

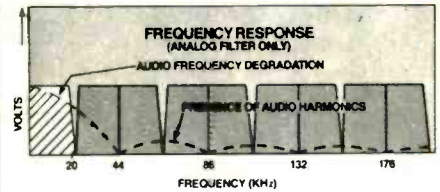
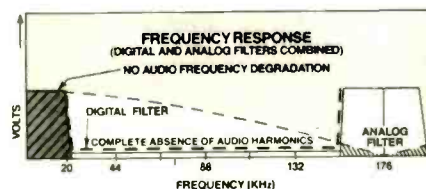
must be as *inert* as possible. Ideally, it should emit no more sound when struck than a sponge. But although foam rubber might be fine for Damping, its structural properties are less than ideal. What is needed is a dense, rigid, and inert material that can easily be moulded and formed into the desired shapes. The answer, courtesy of Kyocera, is ceramic.

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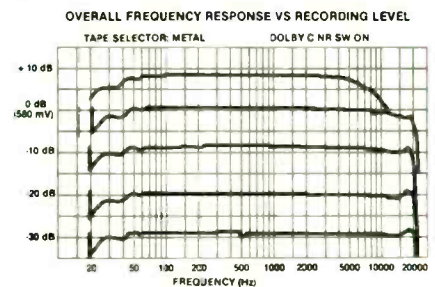
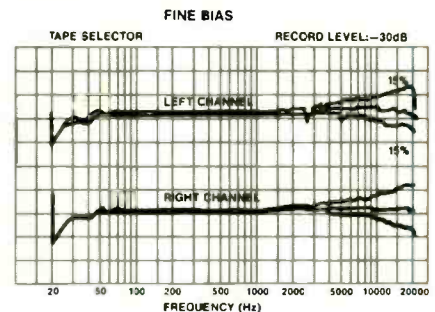
Lest it appear that Kyocera is a one-trick pony limited to ceramic technology, it's worth pointing out some of the other special design approaches found in Kyocera components. For example, they discovered the special sonic qualities of MOSFETs long before most manufacturers. The amplifier stages of their receivers use MOSFETs for their outstanding headroom, transient-handling ability, and warm tube-like sound quality. And the power transformers on their higher power receivers are expensive toroidal types, not only because of their very low radiated-hum field, but because the toroid's low internal impedance easily handles the sudden current demands of high-amplitude digital program material.

And speaking of digital, Kyocera's highly acclaimed DA-01 Compact Disc player takes the innovative and significant step of using a combination of digital and analog output filters—but that may be just one of the reasons why audio critics have said it sounds so exceptionally good!



Conventional FM tuners use digital display-drive systems that radiate radio-frequency noise into adjacent circuits. Most designers try to minimize the problem with shielding; Kyocera totally eliminates it with an innovative noise-free "non-switching" display system that is likely to become an industry standard.

As further evidence of Kyocera's almost fanatical dedication to achieving state-of-the-art performance, their cassette decks have remarkably low wow and flutter figures of 0.02% wrms, while most equivalently priced decks wobble along with an audible 0.05% or so.



Kyocera's commitment to the audio arts is expressed in their extensive research facilities and the dedication of their design engineers. As Kyocera President Kasey Hasegawa put it: "There's no question that our people have an absolute dedication to excellence—they want to achieve the very best in audio. I see it as my job to continue to provide them with the tools and inspiration to make that possible."

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RECORD MAKERS

BY CHRISTIE BARTER
AND STEVE SIMELS



McCartney: in the trenches

ALL QUIET ON THE WESTERN FRONT: The bedraggled-looking fellow shown here shivering in a trench is, of course, ex-Beatle Paul McCartney, and no, he's not doing time for his recent pot bust in Barbados. Rather, this is a scene from his newest video, the (obviously) big-budget "Pipes of Peace." Directed by Keith MacMillan, the video is based on an actual World War I incident—a Christmas ceasefire during which soldiers on both sides of the line put their guns down for a few moments and exchanged greetings (McCartney gets to play both a Jerry and a Limey, and he even shakes hands with himself). The Columbia LP of "Pipes," meanwhile, peaked on *Billboard's* chart here in December (at No. 15) but could rebound with the release of the title tune as a single. The *Pipes* single was Paul's first solo single to hit No. 1 in the United Kingdom. □

TWENTY years after the Beatles first performed in the United States, the surviving members of the group are still pursued by fans, and

everything they do is news. Last fall during a radio broadcast in which he answered listeners' telephoned questions, Ringo Starr was asked when he was going to make a new album. "I have an album," he said, adding somewhat morosely, "It's available in Canada, Germany, and Tibet."

Produced by Joe Walsh, lately of the Eagles, and with guest appearances by Eric Clapton, John Entwistle, and other lights, "Old Wave" is one of Ringo's best and most cohesive albums since his work with producer Richard Perry in the Seventies. But it is not available in the United States or England except as an import.

How can this be? Three years ago Ringo's representative contacted at least one major label seeking to place him on the regular artist roster, but he was politely refused. Ringo later accepted an offer from the medium-sized Boardwalk label run by Neil Bogart in Los Angeles, and a two-album contract was signed. The first album was "Stop and Smell the Roses," a delightful and slightly wacky mish-mash. "Old Wave" was the

scheduled follow-up album.

Although Boardwalk (now out of business) never released "Old Wave" in the United States, the company did license it to RCA Canada and Bellaphon Records in Germany. A musicians' holiday for Ringo and Walsh, it includes some new material by the two of them and some reworked oldies from the Sixties. With luck, you can find it in shops specializing in imports. The price ranges from \$9.98 to \$15.98 for a pressing from RCA Japan. —Joel Vance

lights of her celebrated one-woman show are contained in "The Anna Russell Album," a two-record set that remains one of the hardest perennials in the CBS Masterworks catalog. □

THE Texaco-Metropolitan Opera Radio Network will broadcast Zandonai's *Francesca da Rimini* for the first time on April 7. The title role will be sung by soprano Renata Scotto, who is performing it this year for the first time. Scotto had



Ringo: available in Canada, Germany, and Tibet

AUSTRALIAN soprano Anna Russell, who carved a special niche for herself in the annals of recorded sound by condensing the tale of Wagner's *Ring* cycle to one side of a single LP, is currently making a farewell tour of the States culminating at Carnegie Hall on April 15. Her précis of the *Ring*, which has convulsed audiences and record buyers for years, is nevertheless an accurate and, in a way, helpful guide to what's going on in that sprawling operatic saga. This and other high-

great success at Lyric Opera of Chicago this season with another career first, Massenet's *Manon* in French. Her recording of Respighi's *Il Tramonto* with the Tokyo String Quartet on Vox has opened new doors for her, and she and the Tokyo will perform that work at Lincoln Center on April 14.

When we asked Scotto why she takes on so many new things, she said, "As an actress and as a singer I feel a responsibility to give the audience something new so that they can know every

part of my voice, my heart, and my brain.

"I worry about boring the audience, and I don't want to become bored myself, so I can't just stick with *Butterfly*. There's always the possibility that a new role will be better for me. Of course, there's also the risk that it won't turn out so well, but if you have a career on stage you have to accept artistic challenges and take risks. A fan sent me a poster that puts it in an amusing way, 'Being a prima donna is not a pretty job, but someone has to do it.'"



Scotto: taking risks

New recordings by Scotto are a recital with pianist Ivan Davis on Etceera and a Verdi album recorded in Budapest for Hungaroton. New roles for the prima donna next season are Charlotte in Massenet's *Werther* in San Francisco and Vitellia in Mozart's *Clemenza di Tito* at the Met. —W.L.

YOUNG, gifted, and Caucasian: Here's a scene from the rock video to end all rock videos, *Billie Jean* as performed by . . . **Steve Martin**? That's right, that's Martin in a devastating Michael Jackson parody unveiled on the premiere installment of NBC's new live comedy venture *The New*

Show. Since the show was one of the lowest-rated so far this year, you may have missed Martin's uncanny impersonation; if you did, be assured that not a trick was missed. Martin had all of Jackson's moves down (not to mention a few of his own), the *Billie Jean* set was re-created to the last brick, and the clip even ended with one of those MTV credit tags (in this instance: Steve Martin/*Billie Jean*/"Hey, Where's My Limo?"/Poly Sutra Records). Priceless stuff. Come to think of it, *Billie Jean* would make a

Chuck Pulini/Star File



RCA Records



Left, S. Martin as M. Jackson; right, the young King

1955-1956 on the *Louisiana Hayride* radio show.

This is Elvis in peak form—before superstardom, before the Army, before the drugs, even before he had hired a drummer (actually, D. C. Fontanna does drum on the 1956 version of *Maybelline*, but you get the idea). Also included on the EP,

season (*La Cage aux folles*) even made it the day before! But five years later?

Such was the case with *Sugar Babies*, starring Ann Miller and Mickey Rooney, which started off in San Francisco in 1979 and opened in New York later that year. The original-cast album was released just this year by a new company, Broadway Entertainment, finally closing the gap.

An exhilarating mix of the old and the new, and an affectionate backward look at vaudeville in its heyday, *Sugar Babies* went out on tour with its two stars in the fall of 1982 and has since been all over the map, from Toronto to Miami and from Boston back to San Francisco. It is currently playing the Pantages Theatre in Los Angeles.

The recording's a winner, and it's also one of the longest-playing show albums ever: the LP offers something over sixty-five minutes of music, and the cassette adds another ten minutes or so of additional material. □



Martha Swope

Miller and Rooney

which lists for \$6.98, are sizzling renditions of *Hound Dog*, *That's Alright Mama*, *Baby Let's Play House*, and a cover of Laverne Baker's *Tweedle Dee*. RCA will be releasing the package in the rest of the world. □

MOST Broadway show albums are out there in the stores within a few weeks of opening night. One this

pretty good Video 45 along with a Martin video of his *King Tut* single. Anybody listening at Sony? □

LONG live the King: Despite the worst efforts of scandalmongers and revisionists like Albert Goldman, Elvis Presley's legend remains more or less intact, but every now and then it's nice to be reminded why the Hillbilly Cat was such a major musical figure. Now, thanks to the folks at Jem Records, there's a new reminder, the first above-ground release of some vintage Presley material. "Elvis—The First Live Recordings" is exactly that, newly transferred mono tapes originally made in

with Seiji Ozawa and the BSO for performances of Tchaikovsky's First Piano Concerto. His first concerto recording has just been released too: the Chopin Second, with the Chicago Symphony under Claudio Abbado, for Deutsche Grammophon. □

Billy Joel has paid tribute to his native Long Island (New York) in more ways than one. Besides giving a dynamic performance at the Nassau Coliseum in December 1982, he also recorded the concert for CBS/Fox Video. The result, *Billy Joel: Live from Long Island*, made its debut last year on HBO in an edited version. In January, the full eighty-minute video became simultaneously available in VHS, CED, and LaserDisc formats, and it is CBS/Fox's first video in Beta Hi-Fi. The list price for the CED is \$19.95; the VHS and Beta Hi-Fi tapes and the LaserDisc are \$29.95 each. □

ALTHOUGH the Olympic Marathon won't be run until this summer, TV viewers can go into training with the operatic equivalent on March 28 when PBS devotes some five hours of prime time to a telecast of Berlioz's *The Trojans* in its Live from the Met series. Tatiana Troyanos sings the role of

Reinhard Wolf/Deutsche Grammophon



CBS/Fox Video



Left, Yugoslavia's Pogorelich; right, Long Island's Joel

Dido, Jessye Norman Cassandra, and Placido Domingo Aeneas. James Levine conducts.

On April 9 PBS follows with Tchaikovsky's *The Queen of Spades* in Gian Carlo Menotti's new production for the Opera Company of Philadelphia. Russian conductor Woldemar Nelson leads this performance sung in the original Russian (with English subtitles) by tenor Vladimir Popov as Herman, Bulgarian soprano Stefka Evstatieva as Lisa, and French soprano Régine Crespin as the Countess. The Tchaikovsky opera is being presented in the network's Great Performances series. For both operas,

check local PBS listings for times and alternate dates. □

WE know he needs a job, but really... Believe it or not, the befuddled-looking short gentleman pictured here is none other than Roger Daltrey, former lead singer with the now defunct Who. What's he doing in that ridiculous costume? Shakespeare, of all things. Roger plays the dual role of the servants in a new version of *The Comedy of Errors*, part of the PBS series *The Shakespeare Plays*, in company with such heavyweights as Dame Wendy Hiller, Cyril Cusack, and (on the right) Michael Kitchen.

Daltrey, a Shakespeare buff of recent vintage, would like to do the part on stage.

"During some of those long monologues you want to scream 'Get off and get on with it,'" he says. "I'm sure



Shakespeare wrote some of it to get people doing that." Unlike, we suppose, a Who concert. □

Left, Domingo and Troyanos in *The Trojans*; right, Crespin in *The Queen of Spades*



James Heffernan/Metropolitan Opera

Truddy Eric Cohn/Opera Co. of Philadelphia

LITERATURE Makes Strange Bedfellows: A book by Michael Jackson, combining autobiography and dance tips, is scheduled from Doubleday in 1985. The editor? None other than Jacqueline Kennedy Onassis. And the autobiography of the Animals' lead singer, Eric Burdon, scheduled next year from British publishers Faber and Faber, will be edited by Pete Townshend, formerly of the Who. □



American Maestro

LEONARD SLATKIN

AN INTERVIEW BY
WILLIAM LIVINGSTONE

SYMPHONY orchestra conductors rank with pianists and singers as the most glamorous musicians, and for most American audiences the glamour is heightened considerably if the artists are from foreign countries. As a result of this attitude, so many American orchestras are led by music directors from abroad that there is a lot of hand-wringing about the plight of the American conductor.

This genuine concern has become

less intense in recent years with the emergence of a group of very talented and very successful young American maestros. They include James Levine, Gerard Schwarz, Michael Tilson Thomas, David Zinman, and Leonard Slatkin. When Slatkin was in New York for his most recent stint as guest conductor of the Philharmonic, I inquired about his plight. "I can't complain," he said.

Small wonder! Only thirty-nine, Slatkin is the music director of one of

the nation's finest orchestras, the St. Louis Symphony. He is also principal guest conductor of the Chicago Symphony (one of the Big Five) and director of the Minnesota Orchestra's summer festival in Minneapolis.

His thirty-odd recordings, mostly with the St. Louis Symphony, have appeared on such labels as Vox, Nonesuch, New World, and Telarc. He has just made his EMI/Angel debut conducting the Munich Radio Orchestra in an album of Mozart opera arias sung by soprano Lucia Popp, and his recordings of Prokofiev's Fifth Symphony and excerpts from the ballet *Cinderella* await release on RCA.

In 1980, Slatkin became the first person to conduct all of the Big Five American orchestras (Boston, New York, Philadelphia, Chicago, and Cleveland) in one year. Now he's ticking off European ensembles.

"I accomplished the thing that most people feel is impossible," Slatkin said, "by getting an American career without making one in Europe first. Having done that somewhat successfully, I can begin to concentrate on some European things.

"I've done all the London orchestras—that's been nice—and I've conducted the Concertgebouw. Next year I'll do the Berlin Philharmonic and the Vienna Philharmonic. I want to say to the Europeans, 'See, it can be done. We can produce an American talent, and maybe it's not so bad.'"

Leonard Slatkin was born in Los Angeles, September 1, 1944. His parents were the conductor and violinist Felix Slatkin and the cellist Eleanor Aller Slatkin, who were the founders of the Hollywood String Quartet. Consequently, he grew up surrounded by music. He began studying violin and piano while quite young and added composition and the viola in his midteens.

While playing viola in a California youth orchestra, he got his first taste of conducting. "The conductor was called away to the phone during a rehearsal, and he asked me if I wanted to conduct and handed me the score. It was the California Junior Symphony, which played in the Heifetz film *They Shall Have Music*."

At the Juilliard School of Music in New York, Slatkin studied conducting with Jean Morel, and he also trained with Walter Susskind in Aspen, Colorado. In 1968, when Susskind went to St. Louis as music director of the symphony, he invited Slatkin to go along as his assistant.

"Susskind was very good to me," Slatkin says. "At times he would ask

me to start conducting a piece so that he could go out into the hall and listen to the opening section. Forty-five minutes later, after the last chord of the piece, he would come up, and I'd say, 'How was the opening section?' That's the kind of guy he was. He didn't worry about himself. He wanted me to have the experience of doing things that presented no problems to him. When the orchestra began recording for Vox, he let me do the first ones—the Gershwin set—before his own recordings were made. That's incredible. I owe him an immeasurable debt for what he did for me both as a musician and as a human being. He was a great man."

Susskind's advice to Slatkin was, "Go to every rehearsal and learn every piece, so that when the opportunity comes you will be ready for it, because in this business the opportunities don't come that often." After working with Susskind in St. Louis as assistant conductor, then associate conductor, then principal guest conductor, in 1977 Slatkin had the opportunity to become music director of the New Orleans Philharmonic.

"I took it because I had enjoyed my engagements in New Orleans as guest conductor, it was time to get out of St. Louis, and I wanted to find out if I could be a music director. Running an orchestra is very different from just getting up there and conducting. As a guest conductor you generally come into a city with the three or four programs you know real well. But when you're music director, in addition to the administrative responsibilities and the fund-raising ones and all that, you have to produce fourteen or fifteen weeks a year, and the public expects you to know every style inside out. It's actually unreasonable."

Unreasonable or not, in New Orleans Slatkin convinced himself that he could run an orchestra. Though the demands may be unreasonable, he must not have found them un congenial because when he was offered the opportunity to return to the St. Louis Symphony as music director in 1979, he accepted.

Founded in 1880, the St. Louis Symphony is the second oldest orchestra in the United States. It plays in Powell Hall, a very beautiful renovated movie theater with excellent acoustics. Slatkin is the orchestra's first American-born music director. It is the opinion of long-time observers of the orchestra that it has improved along with Slatkin as he has matured artistically.

Slatkin's string-player heritage comes out when he talks about work-

ing with the musicians. "My emphasis with any orchestra is to try to get the strings to sound first. I'm less concerned with the brass, winds, and percussion because they are taught from the beginning to be orchestra players, and they study with that in mind. The string players don't. You have to treat them as individuals, perhaps as frustrated soloists or frus-

"RUNNING AN ORCHESTRA IS VERY DIFFERENT FROM JUST GETTING UP THERE AND CONDUCTING"

trated quartet players. I encourage them not to hold back but to feel that with me they can play out, sing their hearts out.

"If anything, I'm sometimes accused of overdoing it with sound. My orchestra leans more toward the kind of sound associated with the Philadelphia or Boston as opposed to the Chicago or Cleveland. There's nothing wrong with those other sounds—I enjoy them very much—but I think we have a much more romantically inclined string section."

Peter G. Davis wrote in *New York* magazine, "Having spent the better part of a week with the St. Louis Symphony . . . I am tempted to proclaim this orchestra the best in the land." Rating the orchestra as one of the top two in the nation, *Time* magazine's critic, Michael Walsh, wrote, "St. Louis has come into its own as a tightly disciplined ensemble under the impressively gifted American conductor Leonard Slatkin."

When I visited St. Louis recently, I observed that morale is very high backstage at Powell Hall. The administrative staff operates at a gung-ho high-energy level that would be appropriate for a victorious college athletic team. Slatkin is quick to share credit for the orchestra's success with the musicians and staff.

"I love my orchestra very much," he said in his New York hotel room. "We've known each other for a long time—fifteen years—and we work very well together. Our remarkable staff has been one of the keys to the orchestra's success. They work too hard, nineteen or twenty hours a day, and help each other out. So I too go to staff meetings and do a lot of things not generally included in the music director's job. That's been a necessary

part of our conscious effort to pull ourselves up and get attention from the national musical community.

"It's nice to come to New York once a year and bring my orchestra. I think we play well when we come here, so touring is good artistically though bad financially. Still, touring is an area our board wants to exploit to make the orchestra nationally—and soon internationally—more visible. We've become a kind of municipal rallying point. St. Louis has had many bad raps for the kind of city it is—very conservative and with huge economic problems. When we go on tour, the whole city can point to us with pride and say, 'Look, we do have something besides Budweiser.'"

Much has been made of Slatkin's Americanism because he is such a conspicuous achiever in a field where few native sons have succeeded. He conducted the newly discovered Mozart symphony at the White House, and he was the conductor for the recent PBS Live from Lincoln Center television special "Marilyn Horne's Great American Songbook." But it would be a great mistake to think him in any way chauvinistic when it comes to repertoire. If he can be said to have a specialty, it is not the work of an American composer, but Sergei Rachmaninoff.

"I've recorded everything he wrote for orchestra," Slatkin said, "and I used to play it everywhere I went, but now I'm trotting it out only occasionally. I hadn't played Rachmaninoff's Third Symphony for about three years, but coming back to it for my current performances with the New York Philharmonic, I find that I've changed. My approach is different now—a little more expansive with a little freer use of rubato.

"I've always been drawn to Rachmaninoff. That bit of Russian *Angst* that runs through his music strikes a responsive chord in me. And there is a family connection with Rachmaninoff. My great-grand-uncle Modest Altschuler, who founded the Russian Symphony in New York, was responsible for the first American performances of a lot of music by Rachmaninoff and other Russian composers."

In planning the programs for the fourteen weeks per season when he conducts the St. Louis Symphony himself, Slatkin includes some things

he knows he does well, some things he is conducting for the first time, and some experimental things just to see how they will turn out for him. "I also include some things simply because as music director I'm expected to do them. Three years ago I conducted my first Bruckner. I had never touched one note of it. I didn't think I'd do it very well, but surprisingly it wasn't so bad."

■
"I HAVE NO LONG-RANGE PLAN EXCEPT ONE. THAT IS TO DO A REALLY GOOD FIFTH SYMPHONY OF BEETHOVEN ONCE."
■

About present-day audiences' unreasonable expectations of music directors, Slatkin says, "In the old days, when seasons were much shorter and conductors more tyrannical, the great conductors like Toscanini, Bruno Walter, and Furtwängler had repertoires nowhere near as broad as those of conductors today. Unless I'm mistaken, Toscanini never did a Mahler symphony. They had huge gaps in repertoire that we are expected to do automatically.

"It has really become quite difficult, what we have to do. It's not just that more pieces have been written as the twentieth century progressed, but we're now expected to go back before Haydn too. All of a sudden in the last few years we have had to make conscious decisions about what we're supposed to do with the *Messiah!* I can't get up there and do it in the so-called authentic manner. I just can't do that. It requires a totally different training. Then there's the problem of the new music which has become so . . . so . . . *varietous*. We don't have time to assimilate it all."

With engaging candor Slatkin admits that when it comes to contemporary music, he plays what he enjoys. "Like everybody else, I used to do pieces for their novelty, just because they were new. Now I do the ones I really want to, pieces I love by composers who strike that responsive

chord in me. I am not a fan of serially oriented music. It's not for me.

"We have an on-going commissioning project for the St. Louis Symphony that brings us two or three new pieces a year. I try to pick composers who strike the responsive chord but also have a lot of variety. David del Tredici was one, of course. Our composer-in-residence, Joseph Schwantner, is another, and William Schuman still another."

Slatkin has recorded a good deal of contemporary music, including Del Tredici's *In Memory of a Summer Day* (Nonesuch 79043), a St. Louis Symphony commission that won the 1980 Pulitzer Prize. The decision of which new works to record rests with the record companies. "We submit the pieces we're doing in the course of a season," he says, "and they tell us what they're interested in."

Asked to name some of his favorites among his own records, Slatkin said, "A record I really love is an album of string music (Telarc DG 10059) that exists by accident. When we were recording the Mahler First or Dvořák's *New World*, whatever it was went so well that there was extra time, and we did some short pieces.

"After we did Barber's *Adagio for Strings*, we still had another hour or so. We did the Fauré *Pavane*, the Satie, *Danny Boy*, and all of a sudden we had more than half a record. Later we put on Vaughan Williams's *Tallis Fantasy*. It took a couple of years to get that disc out, but it was all recorded when we had the luxury of playing without deadline pressure. This resulted in very relaxed, spacious performances of those pieces. I like that recording a lot."

The three-record Gershwin set Slatkin and the St. Louis Symphony recorded for Vox in 1974 is still very special for him. He also especially likes a new contemporary album he and his orchestra made containing Michael Colgrass's *Déjà Vu* and Jacob Druckman's *Aureole* (New World 318). "That record is a sacrilege for some people because there is a five-year difference between the sides, and one was recorded digitally and the other is analog. Although we had changed, the engineers were the same, and if you listen just to the sound, you don't hear much difference."

Slatkin commented favorably on the digital sound of his Debussy album containing *La Mer*, *Danses sacrée et profane*, and *Prélude à l'après-midi d'un faune* (Telarc DG 10071). "I admire digital for certain things, but I'm not certain the secret of Telarc's success is the digital process itself. I think it has more to do with the microphones and their particular way of setting up. It's like the old days of recording. There are just three microphones. That's it."

Recording Mahler's Second Symphony (Telarc CD-80081/2) was a special challenge for Slatkin, and he is very pleased with the result. "On stage we knew that putting a piece like this on disc was really playing with the big boys. For all of us. There was an incredible sense of pressure because that's one of those pieces you simply cannot record in one shot."

The sessions started on a Friday morning when the first movement was recorded and the second and third were read through. The chorus was called for the evening and the idea was to record the ending, but the producer asked Slatkin if he would consider starting with the *Urlicht* section and playing through to the end, nearly forty minutes of music.

"I said it's been a long day, but we'll give it a try. I remember starting it. I remember beginning the *Urlicht*, and I guess I remember finishing, but something happened that none of us can quite explain. As we were playing, something took over, something completely spiritual.

"I remember giving the cut-off at the end. There was a big silence. When I opened my eyes, I looked around and people were in tears on stage. Something had happened. Everybody just got transported. We agreed not to listen to the tapes until the next session on Sunday, and everybody was dreading the worst. But two days later as we listened we realized that it was on the tape. There is something quite special on that recording, at least for those who participated in it. It's *very* special for me."

Slatkin has not conducted a lot of opera, but he is beginning to do more. He said the old dictum that conductors had to begin in the opera house and then move to the concert hall no longer holds, and he mentioned Leonard Bernstein, Bernard Haitink,



Slatkin with soprano Marilyn Horne

and Neville Marriner as examples of those who had worked it the other way around.

But after St. Louis, what would Slatkin like to do? Would he like a bigger orchestra in a different city? I mentioned to him that several West Coast orchestras are looking for music directors, most notably the Los Angeles Philharmonic. When I asked if he would like that job in his old home town, he said he didn't know.

"They say you can't go home again. I have no idea. I've enjoyed working with that orchestra, but I really don't know. I think the West Coast orchestras are in transitional states and the next appointments are crucial. I hope they are made responsibly, not on the basis of glamour but musicianship. And it doesn't matter whether it's an American or a European as long as it's the *right* person.

"I haven't been approached about these openings and haven't given much thought to them. Why should I? I'm very happy where I am, and I have to be where I'm happiest musically. Certainly now that's in St. Louis. I love my orchestra, and I can produce with them the kind of music-making I want, so I can't see myself moving.

"Inevitably, I suppose at some point a move will become necessary, but I don't know how the music world will have changed by then or how I will have changed. All I can do now is get up wherever I am at the moment and work. I have no long-range plan except one. That is to do a *really* good Fifth Symphony of Beethoven once. That's my big career goal, to be able to walk out and actually say, 'Yes, now I've really got this piece.' "

Best of the Month

Our critics choose the outstanding current releases

THE PRETENDERS' TRAGIC, POWERFUL "LEARNING TO CRAWL"

GIVEN the events in Chrissie Hynde's life over the last eighteen months—her decision to expel former lover Peter Dinklage from the Pretenders because of his heroin addiction, the drug-related death two days later of guitarist James Honeyman-Scott, Farndon's death eight months after that, and the birth of Hynde's first child—it's surprising that the newly reconstructed Pretenders sound so little changed. On first listen, in fact, "Learning to Crawl" sounds of a piece with "Pretenders"

and "Pretenders II." Yet there are differences.

While the Pretenders still feature the edgy collision of thrashing guitar, drums, and bass with a cool, self-assured woman, they have moved a little closer to the middle of the road, as it were. "Learning to Crawl" can claim two legitimately romantic ballads, *Show Me* and *2000 Miles*, that would have been unthinkable three years ago and several more songs that pull their instrumental punches up short of total devastation. Some of

The Pretenders: a reassuring return



Sir Georg Solti:
passionate intensity
 in *Romeo and Juliet*

the change is contributed by the new lead guitarist, Robbie McIntosh, whose playing is more versatile than that of Honeyman-Scott if still not particularly clean. (Ironically, Honeyman-Scott had suggested that McIntosh join the band as an extra rhythm guitar only days before he died.)

But, as you would expect, any significant transformation in the Pretenders' sound would have to originate with Chrissie Hynde. Despite the band's pose on the album jacket, which suggests nothing so much as the cold defiance of the early Rolling Stones, in the music Hynde has traded in that posturing for a kind of resigned sobriety. (She hasn't given up without a fight, however, as the hammering chords of *Middle of the Road* attest.)

Hynde's songwriting is, to my ears, more powerful and convincing than ever. In *Time the Avenger*, time runs out on a middle-aged businessman and his illicit affair ("One more vodka and lime to help paralyze that tick tick tick"). Hynde packs this story of infidelity with drama and dark detail. In *Thumbelina*, a woman comforts her child as they drive across the desert to a windshield-wiper-slapping rockabilly beat. It isn't until the final verse that you discover she's running away from her husband, as she sings to the child, "It must seem strange when love was here then gone/And the Oklahoma sunrise becomes the Amarillo dawn." Hynde even exhibits a wry sense of fun on *Watching the Clothes*, in which a waitress spends another Saturday night at the laundromat.

Although "Learning to Crawl" seems almost mercilessly fixed on the tragic—aging, infidelity, loneliness, desertion, pain, decay—it's not the ordeal you'd expect. Hynde manages to sidestep self-pity and seize upon a steely, passionate perceptiveness. It's significant that she brings both sides of the album to a close with songs that reaffirm the power of love. When



she sings, on *Show Me*, "You with your innocence and grace restore some pride and dignity to a world in decline," you sense that she's found something to take the place of her vanished youth. The result is an album as jarring as the fate of the Pretenders themselves but as reassuring as their return. —Mark Peel

THE PRETENDERS: *Learning to Crawl*. Chrissie Hynde (vocals, guitar); Martin Chambers (drums, vocals); Robbie McIntosh (guitar, vocals); Malcolm Foster (bass, vocals); instrumental accompaniment. *Middle of the Road*; *Back on the Chain Gang*; *Time the Avenger*; *Watching the Clothes*; *Show Me*; *Thumbelina*; *My City Was Gone*; *Thin Line Between Love and Hate*; *I Hurt You*; *2000 Miles*. SIRE 23980-1 \$8.98, © 23980-4 \$8.98.

SOLTI'S PROKOFIEV:
BRILLIANT PLAYING,
SUPERB SONICS

SIR GEORG SOLTI'S new Prokofiev record with the Chicago Symphony Orchestra on London rates special attention for topflight musical execution and superb sonics despite its disturbingly incongruous coupling. The brightly insouciant *Classi-*

cal Symphony doesn't really go with the tragic lyricism and drama of the music for *Romeo and Juliet*. I must say, however, that Solti's performance of the symphony has a level of brilliance and finesse that I can only compare with Koussevitzky's performances with the Boston Symphony in the Thirties. The slow movement is played with elegance, and the finale goes like the wind.

Solti's excerpts from *Romeo and Juliet* are not the concert suites that Prokofiev prepared while he was waiting for the Soviet ballet establishment to come to terms with his work. From Act I we have the introduction with Romeo's entrance, the stirring of street life, and the Morning Dance, followed by the portrayal of the young Juliet, the Dance of the Knights from the Ball Scene, and Juliet's Variation. From the conclusion of the act there is the Balcony Scene, Romeo's Variation, and the Love Dance. From Act II there is the duel between Tybalt and Mercutio culminating in Mercutio's death, Romeo's decision to avenge Mercutio and his duel with Tybalt, and the terrifying music for the death of Tybalt. Finally, from Act III we have the introduction and the scene with Romeo in Juliet's bedroom, and from Act IV the concluding death of Juliet. Quite frankly, I would have preferred to

have the whole of Act IV rather than the *Classical* Symphony.

In any case, Solti and the Chicago Symphony play the music to the hilt, achieving a passionate intensity that I have rarely heard equaled. There is a splendid menace in the Dance of the Knights, a dazzling brilliance in the duel between Tybalt and Mercutio, and an almost mindless savagery in Tybalt's death music—the famous separate concluding chords emerge from the speakers as relentless hammer blows. The lyrical elements in the score are not slighted, however; the love music at the end of the first act assumes an almost Tristanesque intensity.

I would not, of course, be without André Previn's eloquent recording of the complete ballet on Angel, but, as excerpts albums go, this one is a superior production. The digitally mastered recording in Chicago's Orchestra Hall achieves tremendous power and splendor. —David Hall

PROKOFIEV: *Romeo and Juliet, Op. 64 (excerpts); Symphony No. 1, in D Major, Op. 25 ("Classical")*. Chicago Symphony Orchestra, Sir Georg Solti cond. LONDON ❶ LDR 71087 \$11.98, ❷ LDR5 71087 \$11.98; ❸ 410 200-2, no list price.

DEBBIE CAMPBELL DOES TULSA PROUD WITH "TWO HEARTS"

DEBBIE CAMPBELL'S debut album for the Tulsa-based Churchill label serves not only as a showcase for Campbell's impressive talents as a singer-songwriter but also as a sampling of the evolving "Tulsa Sound." Home at one time or another to such musicians as Leon Russell, Roy Clark, J. J. Cale, Gus Hardin, and Hank Thompson, Tulsa has in recent years earned a reputation as a breeding ground for a stylish integration of country, blues, and rock, the kind to be found on Campbell's "Two Hearts," which was produced in Tulsa using mostly Tulsa musicians.

Born in Ft. Worth, Texas, Campbell grew up listening to Aretha Franklin and Ray Charles before joining an all-girl touring band (play-

ing trumpet and guitar) at fourteen. Later she signed on as lead singer with a hard-rock group, and these diverse influences all took root in the development of her personal style. "Two Hearts" is a fresh-sounding album that Campbell describes as reminiscent of Fifties rock-and-roll, but which she delivers with a healthy dose of country and a belly full of blues.

Sweet Inspiration, one of the nine Campbell originals here, is a slow, warm-blooded ballad that seems worthy of Aretha herself, and *Finally Found a Way* slithers to a smoky Carla Thomas r-&-b beat. *Old Friends*, on the other hand, is pure country-rock, and *Your Mama's Gone* sounds like something Brenda Lee might have done in her *Sweet Nothin's* days.

Some of Campbell's tunes take unexpected hairpin turns in the melody or instrumental breaks, but in the end

they're only short cuts to the soul, paved with Leon Russell-like piano poundings, funky horn fills, and searing electric-guitar riffs. Campbell needs a little help in capturing the dynamics of her voice—hardly a large one—on record, but her album is just hip enough, loose enough, and good enough to promise even better things later on. In the meantime, this one will do quite nicely, thank you. Tulsa should be proud. —Alanna Nash

DEBBIE CAMPBELL: *Two Hearts*. Debbie Campbell (vocals); Walt Richmond (keyboards); Steve Hickerson, Rockin' Jim Byfield (guitar); Gary Gilmore, Gary Cundiff (bass); Chuck DeWalt (drums); other musicians. *Big Tears; Blue-Eyed, Blonde-Haired Girl; Real Bad News; Two Hearts; In Spite of Me; Sweet Inspiration; Finally Found a Way; Old Friends; Your Mama's Gone; Send Him Home to Mama; Ooh Yes, I'm Falling in Love*. CHURCHILL CR 22002 \$6.98.



*Debbie Campbell:
short cuts to
the soul*

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The Parachute Club: dance rock with a social conscience

**THE PARACHUTE CLUB:
FRESH, UNAFFECTED
DANCE MUSIC**

SOMEWHERE in the middle of the Seventies, after a decade of rebellion, rock music suddenly stopped trying to score political points and decided it was time to score on the dance floor. This was probably a healthy thing. At best, the Woodstock Generation trivialized the issues they claimed to confront; certainly the energy expended on muddled sloganeering was better spent nailing down a good beat. By 1982 Sting could claim, "There are no political solutions," and no one argued the point.

But just a little later, some newly political bands emerged—bands like U2, the Clash, and Australia's Midnight Oil—to challenge pop music's complacency and restore respectability to the idea of social conscience. Now, from Toronto, comes the Parachute Club, perhaps the first rock band of the Eighties to fuse an articulate social awareness, almost old-

fashioned in its sincerity, with dance music as contemporary as Boy George.

What makes the Parachute Club's politics different is its feminine—I don't want to say "feminist"—point of view. Four of the seven players are women, and, while everyone contributes to the songwriting, the music is largely shaped by the vision of Lorraine Segato, the Parachute Club's tough-minded but effusive lead singer and guitarist. The songs on the group's debut album range over themes from the personal—betrayal, isolation, desire, self-knowledge—to larger social counterparts—abuse of power, repression, hunger. If that sounds like heavy going, it isn't. The songs offer images and metaphors equal to their message; they have lyrics, not polemics. And a thread of hopefulness and celebration runs through the entire album: no problem seems unsolvable to the Parachute Club. The best example is *Rise Up*, the most truly joyful song I've heard on records in some time.

That optimism is underscored by the music, which is almost entirely rhythm-based, a wash of African and

Latin rhythms played with a cool, unhurried energy. Melody is de-emphasized; what there is is carried by Segato's vocals. Segato masks her rather plain tone with aggressive phrasing, something between the woozy articulation of Ricki Lee Jones and the fierce conviction of Joan Armatrading. She fronts three percussionists, bass and synthesizer, and two rhythm guitars, with lots of sinewy, staccato chords that give percussive force to the clean arrangements. Not an ounce of fat anywhere.

What really distinguishes "The Parachute Club" is the music's fresh, unaffected quality. The group's first album carries none of the customary rock-music baggage—no attitude, no image, no pretense. No MTV video either. Just good, honest music with a beat. Dance or listen. It's up to you.

—Mark Peel

THE PARACHUTE CLUB. The Parachute Club (vocals and instrumentals); vocal and instrumental accompaniment. *Rise Up*; *Slip Away*; *Alienation*; *Are You Hungry*; *Free Up Yourself*; *Boy's Club*; *Hot in Pursuit*; *She Tell You*; *Tobago Style*. CURRENT/RCA WAVE 2 \$8.98, © WIND 2 \$8.98.



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Best of the Month

Recent selections
you might have missed

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- **Beethoven: Piano Sonatas Nos. 12 and 13.** CBS M 37831. "... one of the very finest things Glenn Gould left us ..." (March)
- **Chausson: Concert in D Major for Violin, Piano, and String Quartet.** CBS IM 37814. "... a rediscovery of a little-known masterwork." (February)
- **Debussy: La Mer; Nocturnes.** CBS IM 37832. "Excellent performances, superb digital sound." (January)
- **Rachmaninoff: Symphony No. 3; "Youth" Symphony.** LONDON LDR 71031. "... sensuous and richly nuanced ..." (December)
- **R. Strauss: Death and Transfiguration; Till Eulenspiegel; Don Juan.** PHILIPS 6514 228. "... a wholly memorable aural and emotional experience." (February)
- **R. Strauss: Four Last Songs; Six Songs with Orchestra.** PHILIPS 6514 322. "Voluptuous tone, mature artistry from Jessye Norman." (March)

POPULAR

- **Emmylou Harris: White Shoes.** WARNER BROS. 23961-1. "... an inordinately strong release ... real rock energy." (March)
- **Joe Jackson: Mike's Murder.** A&M SP-4931. "... captures the thrill, danger, and loneliness of being young in New York in the Eighties." (January)
- **David Murray Octet: Murray's Steps.** BLACK SAINT BSR 0065. "Accessible modern jazz." (February)
- **Ricky Skaggs: Don't Cheat in Our Hometown.** EPIC FE 38954. "... a landmark album ..." (February)
- **Sissy Spacek: Hangin' Up My Heart.** ATLANTIC AMERICA 90100-1. "... cuter than a speckled pup in a little red wagon." (January)
- **Was (Not Was): Born to Laugh at Tornadoes.** GEFEN/ZE GHS 4016. "A different kind of rock/r-&b album." (February)
- **Dionne Warwick: How Many Times Can We Say Goodbye.** ARISTA AL8 8104. "... elegant, powerful, profoundly moving ..." (March)
- **Neil Young: Everybody's Rockin'.** GEFEN GHS 4013. "... a brilliant goof ... spontaneous sounding and funny." (December)



Soprano Barbara Hendricks: committed, affectionate, joyous

IRRESISTIBLE OPERA RECITAL ALBUM FROM BARBARA HENDRICKS

WHAT a lovely program! Barbara Hendricks's first operatic recital record contains just about all the most attractive soprano arias from French opera, both the well beloved and the lesser known, without any that might be regarded as overexposed. It would be hard to imagine a more enticing assortment—and perhaps harder still to imagine any of them being more appealingly sung. The unlabored characterization of each of these little scenes shows Hendricks once again to be a true singing actress rather than just another pretty voice. But what a pretty voice!

A comparison that popped into my mind as I listened to this album was with Elisabeth Schwarzkopf's wonderful record of Viennese operetta arias on Angel. Schwarzkopf's style is utterly different from Hendricks's, of course, but both singers give very much the same impression of com-

mitment, affection, and joyous sharing of the music.

The orchestral accompaniments here, by the fine Monte-Carlo Philharmonic conducted by Jeffrey Tate, are fully worthy of Hendricks's stunning vocalism, and the Philips recording itself is sumptuous in the most natural way, providing clear, vivid presence rather than any dubious "enhancement." This release is, in a word, irresistible—and no doubt a collector's item for the future. Full texts and translations are provided.

—Richard Freed

BARBARA HENDRICKS: Arias from French Operas. Charpentier: *Louise: Depuis le jour.* Gounod: *Roméo et Juliette: Ah! Je veux vivre; Dieu, quel frisson.* Bizet: *Les Pêcheurs de perles: Comme autrefois dans la nuit sombre.* Berlioz: *Benvenuto Cellini: Entre l'amour et le devoir.* Massenet: *Manon: Adieu, notre petite table; Je marche sur tous les chemins; Obéissons quand leur voix appelle.* Thaïs: *Dis-moi que je suis belle.* Offenbach: *Les Contes d'Hoffman: Elle a fui, la tourterelle.* Barbara Hendricks (soprano); Monte-Carlo Philharmonic Orchestra, Jeffrey Tate cond. PHILIPS 410 446-1 \$11.98, ©410 446-4 \$11.98.

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Popular Music

DISCS AND TAPES
REVIEWED BY
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IRENE CARA: *What a Feelin'*. Irene Cara (vocals); vocal and instrumental accompaniment. *Why Me?*; *Breakdance*; *The Dream (Hold On to Your Dream)*; *You Took My Life Away*; *Keep On*; *Romance '83*; and four others. GEFEN GHS 4021 \$8.98, © MSG 4021 \$8.98.

Performance: **Flashdance** revisited
Recording: **Satisfactory**

If you liked the soundtrack of *Flashdance*, you'll probably get a kick out of Irene Cara's new album, for it not only features the movie's title song, but was produced by Giorgio Moroder, who was in charge of the music for the movie. Moroder also wrote most of these songs, and they are cast in the same brittle, electronic vein as that soundtrack. Yet something seems to be missing. One factor that gave vitality to *Flashdance* was the variety of performances by different artists and groups. While Cara has a certain ingenuous appeal in her light-voiced, girlish style, she fails to evoke any sense of emotional depth. We are caught in a time-warp of eternal adolescence. Moroder's songs are sometimes very cute, but they are inconsequential. The best thing about this album is the cover photo of Cara, who is much lovelier than anything she sings here. *P.G.*

DEBBIE CAMPBELL: *Two Hearts* (see *Best of the Month*, page 78)

Explanation of symbols:

- Ⓛ = digital-master analog LP
- Ⓢ = stereo cassette
- Ⓢ = digital Compact Disc
- Ⓢ = eight-track stereo cartridge
- Ⓛ = direct-to-disc recording
- Ⓢ = monophonic recording

THE DICKIES: *Stukas over Disneyland*. The Dickies (vocals and instrumentals). *Rosemary*; *She's a Hunchback*; *Wagon Train*; *If Stuart Could Talk*; and four others. DICKIES/PVC 6903 \$7.98, © PVCC 6903 \$7.98.

Performance: **Manic delight**
Recording: **Good**

Okay, I admit it. I would have listened to any album titled "Stukas over Disneyland." Know what? It was fun. If gibberish there must be, then let the Dickies dispense it. I'm also impressed with the speed and precision of their playing. They

DURAN DURAN: *Seven and the Ragged Tiger*. Duran Duran (vocals and instrumentals). *Union of the Snake*; *The Reflex*; *Shadows on Your Side*; *Of Crime and Passion*; and five others. CAPITOL ST-12310 \$8.98, © 4XT-12310 \$8.98; © 46015-2, no list price.

Performance: **Ordinary**
Recording: **Good**

Duran Duran is not as good on records as it is on video. The musical style lies somewhere between the Beatles and David Bowie and depends more on a good beat than anything else. The nine songs



Duran Duran: better seen than heard

are nonsensical, but they play real, non-nonsense rock-and-roll.

The Dickies began in southern California in 1978 with outrageous stage shows, were signed to a British label, and toured with the Jam. After two albums, both released here by A&M, things fell apart. Drummer Chuck Wagon died, managers changed, and the band line-up turned over completely except for charter members Leonard Phillips and Stan Lee.

The Dickies are now on tour in the USA again, so be warned. This mini album is made up of four 1983 demos and four 1981 cuts with the original personnel. The style hasn't changed, and the furious pace of their playing remains as dizzying as ever. *J.V.*

on "Seven and the Ragged Tiger" have a very boring sameness about them. Not only does one track sound like the next, but the whole album sounds like something you've heard before. *C.A.*

EARTH, WIND & FIRE: *Electric Universe*. Earth, Wind & Fire (vocals and instrumentals); vocal and instrumental accompaniment. *Magnetic*; *Touch*; *Moonwalk*; *Could It Be Right*; *Sweet Sassy Lady*; and three others. COLUMBIA QC 38980, © QCT 38980, no list price.

Performance: **Not among their best**
Recording: **Very good**

Although "Electric Universe" does not scintillate with Earth, Wind & Fire's



Polydor Records

John/Yoko: Heart Play

"MILK AND HONEY" is a companion to "Double Fantasy," the album that raised the marriage of the late John Lennon and Yoko Ono from mere celebrity status to myth. Like "Fantasy," "Milk" alternates compositions written by husband and wife in a lovers' dialogue the two called a "heart play." Ono has said she hopes other lovers will find these songs a source of strength and guidance. That many people actually *do* is strange since, in fact, the songs paint a rather dreary picture. Moreover, they add to the evidence that suggests Lennon's relationship with Ono precipitated a slide into childish dependency and domesticity that coincided with a marked decline in the quality of his artistic output.

The inescapable fact is that "Milk and Honey," like most of what Lennon produced after the Beatles, is thoroughly mediocre. What little life and energy there are here come from Ono. Lennon's own enthusiasm seems feigned: he sings like someone who's spent too much of his life in his bathrobe. How pale and unconvincing the restless husband in *I'm Stepping Out* seems compared with the expressionistic force of the husband's ennui in *Good Morning* from "Sgt. Pepper." *I'm Stepping Out* is about a man who's got to get away from his wife and kids for a while, and bailing out is a recurrent theme on side one (as in *I Don't Wanna Face It* and *Nobody Told Me*). The picture of Lennon that emerges is that of a male agoraphobic—a cowed husband sitting around in his pajamas, chin propped sadly in his palm, stirring his coffee and sighing into the late afternoon. If this is marriage, I'll take a double hit of Lucy in the Sky with Diamonds.

Yoko Ono's contributions are far more interesting, probably because you accept that she is an extremely limited composer and performer, and therefore you don't expect so much. Her tiny voice is capable

of surprising sexuality, and her lyrics are occasionally delightful in their crazy logic. *Sleepless Night*, for example, the lament of an insomniac, is a brilliant succession of delirious images that seem to come straight from the strange land between waking and dreaming. Unfortunately, most of what Ono writes sounds as if she's making it up as she goes along, which is why you can't remember one of her melodies no matter how many times you listen to it.

If Lennon's songs on side one are escapist, those on side two are just banal. The first thing that comes to mind when you hear (*Forgive Me*) *My Little Flower Princess* is, of course, Lennon crawling back to Ono on his hands and knees after his celebrated period of dissipation with Harry Nilsson. And what should have been the centerpiece of "Milk and Honey," an exchange of love songs between John and Yoko (*Let Me Count the Ways* and *Grow Old with Me*), is completely upstaged by the printing of the original Barrett and Browning poems side by side with the Lennon/Ono versions. How much more powerful are Elizabeth Barrett Browning's words, "And if God choose, I shall but love thee better after death."

Far more eloquent as a testament to Lennon and Ono's love is "Heart Play," an excerpt from tapes they made during an interview for *Playboy* in 1980. Edited from twenty-two hours of recorded conversation, this forty-two-minute documentary finds the pair making a great deal more sense than their music does. The simple sound of their voices is part of the attraction, I admit. And there is a little too much effort made to give the proceedings a prophetic irony, with John underscoring his excitement about reaching forty and working with his wife and being a father—even, at one point, talking about the fate of pacifists like Kennedy and King, "dying in public." But the conversation does help explain why Lennon's music became so disappointing. He'd stopped living for his fans and stopped writing for them. Now he wrote for himself, having settled down with Ono to bake bread and raise the baby. It is quite touching, and certainly rational. But it's not the stuff of great music or great art, no matter what illusions Lennon entertained that it might be.

—Mark Peel

JOHN LENNON AND YOKO ONO: *Milk and Honey*. John Lennon (vocals, guitar); Yoko Ono (vocals); instrumental accompaniment. *I'm Stepping Out*; *Sleepless Night*; *I Don't Wanna Face It*; *Nobody Told Me*; *O' Sanity*; *Borrowed Time*; *Your Hands*; (*Forgive Me*) *My Little Flower Princess*; *Let Me Count the Ways*; *Grow Old with Me*; *You're the One*. POLYDOR 817 160-1 \$8.98, © 817 160-4 \$8.98; © 817 160-2, no list price.

JOHN LENNON AND YOKO ONO: *Heart Play: Unfinished Dialogue*. POLYDOR 817 238-1 \$5.98, © 817 238-4 \$5.98.

usual brilliance, it's skillfully crafted and worth a listen. Perhaps leader Maurice White's inspiration is ebbing after a dozen years of producing generally superior and innovative material; somehow even the best of the eight songs here are less memorable, original, or simply pretty than they might have been. Irritatingly, on several tracks the group seems to be trying to sound like other, less-talented, high-energy groups. This is most apparent on the so-called "electric" numbers, the worst of them being the opener, *Magnetic*, a noisy sliver of nothingness that should have been left on the editing-room floor. *Electric Nation* and *Spirit of a New World* aren't much better. The remaining five selections are pleasantly listenable, with *Could It Be Right* and *We're Living in Our Own Time* being most sweetly sentimental. The latter features the stunning high falsetto of lead singer Philip Bailey and is almost—but not quite—good enough to make the album's shortcomings forgivable. P.G.

ECHO AND THE BUNNYMEN. Echo and the Bunnymen (vocals and instrumentals). *Never Stop*; *Rescue*; *The Cutter*; *Back of Love*; *Do It Clean*. SIRE EP 23987-1 \$5.99, © 23987-4 \$5.99.

Performance: **Psychedelic chic**
Recording: **Excellent**

Ah yes, more lysergic-acid nostalgia for hep teenagers who think that *Riot on Sunset Strip* (starring Aldo Ray and the immortal Mimsy Farmer) is the greatest film of all time. In fact, if you're the sort of intense young person who likes to deck your walls with antique Day-glo posters, turn on the black light you got at the Salvation Army, and burn some incense, then Echo and the Bunnymen (who, like you, were probably in diapers in 1967) really want to come into your life. These guys may be ironists, but boy, they don't miss a trick: synthesizers doing imitations of the strings from *I Am the Walrus*, twelve-string riffs copped from early Who singles, fake sitars, a lead singer who sounds like an iambic-pentameter-obsessed Jim Morrison . . . Only the truly superlative modern production clues you that you're not listening to your big brother's scratchy old Iron Butterfly records.

To be fair, the Bunnymen occasionally seem to mean what they're singing, and in small doses there's a certain winning youthful integrity to the music here. For my part, however, LSD never gave me much more than a headache, and I could cheerfully live without the Bunnymen's re-creation of the soundtrack to that headache. S.S.

LEON EVERETTE: *Doin' What I Feel*. Leon Everette (vocals); instrumental accompaniment. *The Lady*; *She's Right*; *I Wanna Know Your Name*; *In a Letter of Goodbye*; *This Man and Woman Thing*; and two others. RCA MHL1-8513 \$5.98, © MHK1-8513 \$5.98.

Performance: **Smorgasbord**
Recording: **Good**

For some unfathomable reason, Leon Everette, who has one of the freshest voices

in country music, has wasted this entire mini-LP trying to sound like everybody else in Nashville, living or dead. *Anita, You're Dreaming* is a Marty Robbins-style ballad delivered in an ersatz Robbins way, and *In a Letter of Good-bye* sounds like something Conway Twitty might do. Then there's the Elvis Presley song and . . . well, you get the point. Too bad.

Everette generally has fine instincts when it comes to choosing songs, and he pays close attention to the little things that make a record special: the surprise Cajun fiddle here, the bug-eyed harmonica solo there. Unfortunately, this is just another of those "drinkin' them beers, cryin' them tears" LP's. Lord knows we have enough of those. *A.N.*

RECORDING OF SPECIAL MERIT

THE EVERLY BROTHERS: *Reunion Concert*. Don and Phil Everly (vocals, guitar); instrumental accompaniment. *The Price of Love; Walk Right Back; Claudette; Crying in the Rain; When Will I Be Loved; Bird Dog; Bye Bye Love; Wake Up Little Susie; Cathy's Clown; Let It Be Me;* and fourteen others. **PASSPORT PB 11001** two discs \$11.98, © PBC 11001 two cassettes \$11.98.

Performance: **Excellent**
Recording: **Excellent**

Don and Phil Everly had a string of hits between 1957 and 1962 with an in-tan-

dem singing style that influenced Lennon and McCartney, among many others. But pressures, repetition, and career problems took their toll, and in 1974 the Everly Brothers broke up acrimoniously, vowing never to perform together again.

Last summer the Everlys were reconciled long enough for two reunion concerts at the Royal Albert Hall in London, backed by a sparkling band featuring that considerable guitarist Albert Lee. The brothers were worried about the concerts, but they need not have been. The depth of audience feeling surprised them, and they responded with a fine performance on September 23, 1983, when this double-disc set was recorded.

As Tim Rice (lyricist for *Evita*) mentions in his liner note, it is hard to find someone who actively dislikes the Everlys. His point is well taken. Although I was never a rabid fan, listening to the album reminded me of how much I like them. Their vocal harmonies and attack are as crisp as ever, and their genial professionalism is infectious. They are also major figures as composers, having written half of the two dozen tunes always associated with them. This is one of the few live albums I've heard that can accurately convey a memorable event. The feeling really comes through. *J.V.*

RECORDING OF SPECIAL MERIT

JOHN HIATT: *Riding with the King*. John Hiatt (guitar, vocals); vocal and in-

strumental accompaniment. *I Don't Even Try; Death by Misadventure; Girl on a String; Lovers Will; She Loves the Jerk;* and seven others. **GEFFEN GHS 4017** \$8.98, © M5G 4017 \$8.98.

Performance: **Effective**
Recording: **Dry**

I'm sorry to admit that, except for his work with Ry Cooder, I haven't paid much attention to John Hiatt in the past. If this album is any indication, he's an extremely interesting fellow. The songs here will probably remind you of the early Elvis Costello because, apart from the obvious similarity in their voices, Hiatt too has a flair for word play, a good eye for the details of contemporary culture, and an attitude toward relationships that might be described as cautiously cynical. He's a lot funnier than Costello, however, and he sounds like the kind of guy you'd really like to have a drink with.

One side of Hiatt's new record was produced by Ron Nagle and Scott Matthews, the other by Nick Lowe and current band. They're as different sounding as you might expect (the former vaguely New Wave, the latter soulful à la Al Green), but Hiatt's languid vocals and consistently imaginative lyrics hold the project together in an extremely satisfying manner despite the differing production styles. Standout songs: the title track, a chilling meditation on Elvis Presley as a metaphor for an entire generation ready to self-destruct; the delicately snotty bal-

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Typical amplifier specifications show FTC power ratings based on the continuous power that an amplifier can drive into a resistor, typically 8 Ohms, which is supposed to represent a loudspeaker load. But speakers do not act like simple resistors. The speaker's crossover network alone is made up of not only resistors, but capacitors and inductors as well. The impedance of the voice coil varies tremendously as it has to interact with magnetic fields as well as with the mass of speaker coil. And, while the impedance of an 8 Ohm resistor does not vary, a speaker's impedance and its current requirements are constantly in flux.

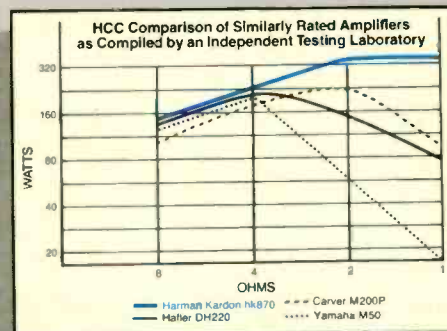
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Ian Anderson: A New Sanity



Chrysalis Records

IT'S hard to contemplate Jethro Tull's Ian Anderson without seeing a crazed medieval minstrel perched on one leg and peering with demonic eyes over a beard-shrouded flute. But that's not the Ian Anderson of "Walk into Light." This Anderson looks more like Jack Nicholson than Touchstone and sounds, well, sane. On his first album *without* Jethro Tull, Anderson has harnessed his considerable energy and given a disciplined shape to his fertile imagination: the result is a consistently interesting and musical project.

For all his "conceptual" conceits, Anderson has always been an intelligent songwriter. On "Walk into Light" he's eschewed diatribe for a series of incisive sketches. None of the songs are very long, and none give more than a glimpse into the situation under scrutiny: a ride home on a commuter train, a view of England from behind the eyes of a middle-class Briton of "indeterminate station bred," the specter of a man fleeing a romantic encounter before dawn, the resigned

deathbed metaphor of an endgame ("Keep me in mind for a rematch in the warm snow").

The music, excellently recorded, is chiefly synthesizer but of a typically Andersonian spirited and melodic sort, every bit as disciplined and intelligent as the lyrics. Even Anderson's phrasing is a model of mature restraint. Shorn of his usual lunatic theatricality, he emerges as the singular voice not heard since "Stand Up" and "Benefit." "Walk into Light" rates as the musical shock of the year so far: Ian Anderson's return from hysteria, brain intact. —Mark Peel

IAN ANDERSON: *Walk into Light*. Ian Anderson (vocals, guitar, flute); Peter-John Vetesse (piano, synthesizers, vocals). *Fly by Night; Made in England; Walk into Light; Trains; End Game; Black and White Television; Toad in the Hole; Looking for Eden; User-Friendly; Different Germany*. CHRYSALIS FV 41443, © FVT 41443, no list price.

lad *She Loves the Jerk*; and, best of all, *You May Already Be a Winner*, a hilarious saga of two inhabitants of the lower depths whose lives may or may not be changed after receiving one of those Publisher's Clearing House sweepstakes offers. Check this one out. S.S.

CAROLE KING: *Speeding Time*. Carole King (vocals, piano); instrumental accompaniment. *Computer Eyes; Crying in the Rain; Sacred Heart of Stone; So Ready for Love; One Small Voice; Alabaster Lady*; and four others. ATLANTIC 80118-1 \$8.98, © 80118-4 \$8.98.

Performance: **In limbo**
Recording: **Good**

Carole King's latest album will neither enhance nor degrade her reputation. She's in limbo. Her new material, some

of it written with her old partner Gerry Goffin, is well-crafted but goes nowhere. The most effective cut here is *Crying in the Rain*, a hit in 1962 for the Everly Brothers. King also throws in two tunes from 1977, one of them the long and dull *Alabaster Lady*.

King is primarily a "women's artist" and, as such, will doubtless always retain a loyal audience. But I confess to impatience with the characters she writes about, all of whom seem to be princesses in a world where love is not good enough. I prefer the Bette Davis approach. Faced with the same situation in *All About Eve*, Davis grinned with the glee of combat and announced, "Fasten your seatbelts—it's going to be a bumpy night!" J.V.

KOOL AND THE GANG: *In the Heart*. Kool and the Gang (vocals and instru-

mentals); other musicians. *In the Heart; Joanna; Tonight; Rollin'; Place for Us; Straight Ahead; Home Is Where the Heart Is*; and two others. DE-LITE DCR 8508 \$8.98, © DCR4 8508 \$8.98.

Performance: **Disappointing**
Recording: **Good**

This album is a disappointment after Kool and the Gang's previous offering, which featured the wonderfully ebullient, reggae-flavored *Let's Go Dancing*. While all the songs here have the professional polish we have come to expect from this group, most fail otherwise to rise above the ordinary. Freshness and venturesome spirit are lacking as the Gang plows through the undistinguished r-&-b material. Too bad. P.G.

RECORDING OF SPECIAL MERIT

PATTI LABELLE: *I'm in Love Again*. Patti LaBelle (vocals); vocal and instrumental accompaniment. *Lover Man (Oh Where Can You Be?); Love Need and Want You; If Only You Knew; Body Language; I'll Never, Never Give Up*; and three others. PHILADELPHIA INTERNATIONAL FZ 38539, © FZT 38539, no list price.

Performance: **Quite surprising**
Recording: **Very good**

Patti LaBelle has a voice that sounds at times like a fire-engine siren gone berserk, but she brings passion to her work, reaching out with that shrill and even occasionally grating voice to explore unfamiliar territory. The first side of her new album is devoted to intimate numbers of the sort not commonly associated with her. Foremost among these is *Lover Man*, certainly one of the most beautiful songs in the standard jazz repertoire and one long associated with the magnificent Billie Holiday. LaBelle's interpretation is somewhat eccentric, for she avoids all reference to previous renditions and approaches the song in a solid rhythm-'n'-blues style, much as Ray Charles might have done. And it works, as does just about everything else on this album. Her distinctive flame of passion burns brightly on love songs that leave their imprint on your heart right from the start with *I'm in Love Again*, the title song, through to *Love Need and Want You* and *If You Only Knew*.

The flip side permits LaBelle to let loose the more raucous and rowdy side of her personality, the one that is more familiar to us, and nobody can play this particular game better. After the sweetness has subsided, she lets it all hang out with a crowd clapping exuberantly behind her as she shouts, "Oh, Miss Girl!" This album has plenty for those who already like Patti LaBelle and even more for those who aren't certain that she appeals to their taste. She's bound to win you over. P.G.

MOBY GRAPE. Moby Grape (vocals and instrumentals); other musicians. *Silver Wheels; Better Day; Hard Road to Follow; Sitting and Watching; City Limits; Queen of the Crow*; and six others. SAN FRANCISCO SOUND ● SFS 04830

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The Pointer Sisters

ON their new Planet album, "Break Out," the Pointer Sisters are at their sassiest, brassiest, uptempo best, shouting out lively dance tunes with a brash insistence. The vocal attacks remain crisp and sharp as the lead shifts on different songs from Ruth to June to Anita, giving each one the opportunity to display her own musical personality.

A heady, whirling mood is established in the opening cut, *Jump*, and, while the tempo shifts, the overall pace never flags. The Pointers' vocal pyrotechnics alone are enough to generate clouds of steam. The sound is enhanced by synthesizers and electronic everything, but the music overrides the gimmickry thanks to the songs' captivating immediacy.

The best cuts are *Baby Come and Get It*, (*Calling on the*) *Nightline*, and *Neutron Dance*. The relationship between neutrons and unemployment, broken love affairs, and hard times is never clarified, but that doesn't matter, for the lyrics are secondary to the fun that is stirred up in the music. It's enough to dance the night away.

—Phyl Garland

POINTER SISTERS: *Break Out*. Pointer Sisters (vocals); instrumental accompaniment. *Jump*; *Automatic*; *Baby Come and Get It*; *I Need You*; *Dance Electric*; *Neutron Dance*; *Easy Persuasion*; *Nightline*; *Telegraph Your Love*; *Operator*. PLANET BXL1-4705 \$8.98, © BXX1-4705 \$8.98.

\$8.98 (from Matthew Katz Productions, P.O. Box 4011, Malibu, Calif. 90265).

Performance: **Legend-tarnisher**
Recording: **Very good**

Without getting into a lengthy history lesson, let's just say that the original Moby Grape was the only real rock-and-roll band to come out of the mid-Sixties San Francisco psychedelic-ballroom scene. They never sold many records, but they made a couple of classic albums, and their best music, such pieces as *Omaha* and *Indifference*, was as joyously out of control as any contemporary punk. They sounded, as some have observed, more like gang fights than songs.

Now the Grape is back, more or less, though without Skip Spence, who was the front man and soul of the outfit. I wish they hadn't bothered. This album is a collection of extremely uninspired Seventies country-rock, with occasional nods to other similarly played-out styles. While it's all respectably performed and recorded, and while everybody is in fine

voice, there's next to nothing here that even sounds like the old Moby Grape. This could just as easily be Firefall or the Little River Band or any number of similar nonentities. A sad business. S.S.

OAK RIDGE BOYS: *Deliver*. Oak Ridge Boys (vocals); instrumental accompaniment. *Ozark Mountain Jubilee*; *When You Get to the Heart*; *Ain't No Cure for the Rock and Roll*; *In the Pines*; *I Guess it Never Hurts to Hurt Sometimes*; *Still Holding On*; and four others. MCA MCA-5455 \$8.98, © MCAC-5455 \$8.98.

Performance: **A new leaf**
Recording: **Very good**

I'd like to think it's because of the things people like me write in pages like these, but I long ago gave up such grandiose thoughts, so I might as well just report the facts: the Oak Ridge Boys, normally one of the slickest acts in country music, have taken a few commercial chances on their new LP, which has nary a *Bobbie Sue* or *Elvira* to be found. That may not seem

like a big deal, but since the Oaks once admitted that they recorded *Bobbie Sue* because it was the closest they could come to duplicating *Elvira*, their biggest hit, I regard "Deliver" as real progress.

In place of their usual guaranteed-blockbuster hit single, the Oaks offer here a piece of quiet, reflective, old-timey sentiment called *Ozark Mountain Jubilee*. And if there is an upbeat, derivative crowd-pleaser in *Ain't No Cure for the Rock and Roll*, there is also a lovely Southern gospel-style version of *In the Pines*, as uncommercial a song as I can think of. As per the expected formula, each of the Oaks gets his turn in the solo spotlight, but, on the whole, there's more emphasis on music than hits here, and it's the most diversified LP they've done.

Low-keyed and dignified, "Deliver" offers everything from traditional country to contemporary ballads and, if only fleetingly, blue-eyed soul. Parts of this album were recorded in Sheffield, Alabama. The Oak Ridge Boys ought to go South more often. A.N.

THE PARACHUTE CLUB (see Best of the Month, page 80)

THE PRETENDERS: *Learning to Crawl* (see Best of the Month, page 76)

TONY RICE: *Church Street Blues*. Tony Rice (guitar, vocals); Wyatt Rice (rhythm guitar). *Church Street Blues*; *Streets of London*; *Any Old Time*; *Orphan Annie*; *House Carpenter*; and six others. SUGAR HILL SH-3732 \$7.98.

Performance: **Dazzling**
Recording: **Good**

Tony Rice's "Church Street Blues" is a tour de force of acoustic flat-picking. Perhaps the most innovative contemporary guitarist around, Rice has forged a personal style that is a smooth and sensual blend of those of the late Clarence White and Lester Flatt and the technically superb, jazzy "Dawg" music usually associated with mandolinist David Grisman (Rice, who helped Grisman evolve the sound, calls it "spacegrass").

Here, in eleven tracks that run the gamut from Child ballads to Gordon Lightfoot to Bill Monroe, Bob Dylan, and Jimmie Rodgers, Rice adds his sweet and imploring vocals to make for an instantly accessible and listenable album. There is nothing quite as hair-raising as the acoustic solo he contributed to Emmylou Harris's *Wayfaring Stranger* a few years back, but it's a solid, if not inspirational, performance all around. A.N.

DARYL SHERMAN: *I'm a Dreamer (Aren't We All)*. Daryl Sherman (vocals); Mike Renzi, Dave McKenna (piano). *Forever Spring*; *Isn't It a Pity*; *Japanese Sandman*; *When Day Is Gone*; *Take Love Easy*; and six others. TROPICAL BELT \$8.98 (from Tropical Belt Records, 850 Seventh Avenue, Suite 1000, New York, N.Y. 10019).

Performance: **Good**
Recording: **Good**

This is a pleasant enough debut recording. Daryl Sherman knows her way

around some of the better modern lyrics and sings them in a jazz-inflected style. A solid musician, Sherman never plays on the obvious; nice touches here include the glints of anger in her performance of the wistful *If Love Were All* and her alteration of the vocal line of *When Day Is Done* to an almost pavane-like slowness. A very accomplished newcomer. *P.R.*

GRACE SLICK: *Software*. Grace Slick (vocals); Peter Wolf (keyboards); other musicians. *Call It Right, Call It Wrong; Me and Me; All the Machines; Fox Face;* and four others. RCA AFL1-4791 \$8.98, © AFK1-4791 \$8.98.

Performance: **Getting better**
Recording: **Pretty good**

This is a lot better than Grace Slick's first two post-Starship solo albums, primarily because it occasionally bears the stamp of her own peculiarly endearing sensibility. Leaving aside questions of genre, there are songs here—particularly *Call It Right, Call It Wrong*, a theatrical and funny meditation on differing national values, and *Me and Me*, an absurdist look at schizophrenia—that actually reflect the Slick world view, which remains as uniquely wry as any in pop music. Still, it's an unsatisfying record.

Grace needs a musical collaborator who's in sync with her eccentricities, and that's something she hasn't had since she and Paul Kantner split up. This time she's working with Peter Wolf, who has

done time with Frank Zappa. Wolf nudges her toward a mildly modern groove at times (there are echoes of the Police and Talking Heads), and, sure enough, Grace sounds serenely comfortable with that kind of aural backdrop to rail over. Unfortunately, on much of the record (all of side two, actually), Wolf and producer Ron Nevison provide only the vaguest sort of FM pop. If there's any discernible influence on it, it's somewhere to the right of Michael MacDonald and to the left of the theme from *Dance Fever*. Which is to say that it's spinach, and the hell with it. On the other hand, considering the sludge the Starship is cranking out at the moment, "Software" is the most promising album out of their camp in years. *S.S.*

SYLVESTER: *Call Me*. Sylvester (vocals); vocal and instrumental accompaniment. *Band of Gold; He'll Understand; One Night Only;* and five others. MEGATONE M-1011 \$8.98, © MC-1011 \$8.98.

Performance: **Recommended**
Recording: **Excellent**

In the early Seventies, when he was a member of the Cockettes, a campy San Francisco club act, Sylvester often patterned himself after Nina Simone, but he dreamed of dressing up in his grandmother's clothes and singing Ma Rainey's blues. Instead of becoming a beads-and-feathers, tousle-haired blues queen, however, he moved with the times and soared

to the top of the disco charts wearing outfits that could perhaps best be described as modern-outrageous.

Now, with several Fantasy albums under his glittery belt, Sylvester appears on the Megatone label with "Call Me," which comfortably blends his disco and gospel past with sounds that spell the present. Veteran Sylvester fans will be glad to know that there are thumps galore on such numbers as *Trouble in Paradise* and *Power of Love*, which clock in at 142 and 156 BPM's (beats per minute), respectively. You will also have a hard time keeping your body still while Sylvester reprises the 1970 Freda Payne hit, *Band of Gold*. My favorite track, however, is *One Night Only*, from the Broadway show *Dreamgirls*. Sylvester delivers it with drama and with much feeling, squeezing its bland structure and lyrics into a delicious serving that is richer than anything that show had to offer. *C.A.*

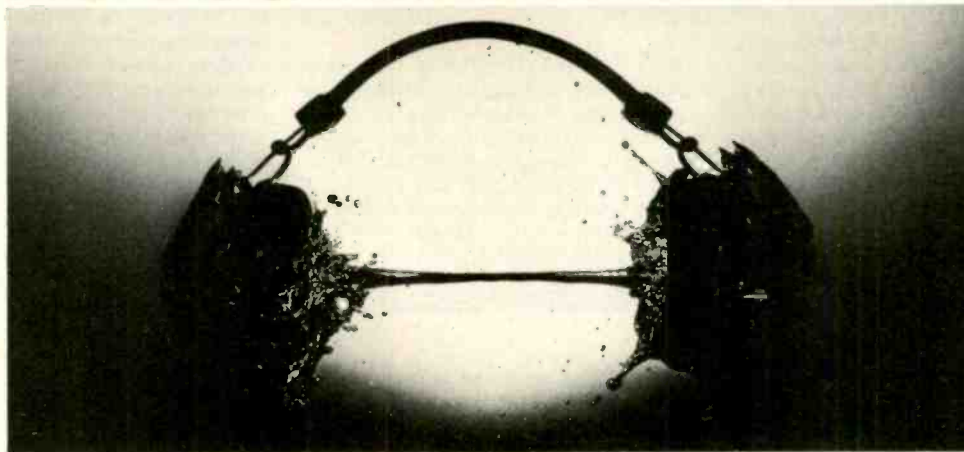
38 SPECIAL: *Tour de Force*. 38 Special (vocals and instrumentals); vocal and instrumental accompaniment. *If I'd Been the One; Back Where You Belong; One Time for Old Times; See Me in Your Eyes;* and five others. A&M SP-4971 \$8.98, © CS-4971 \$8.98.

Performance: **Competent but uninspired**
Recording: **Very good**

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Atlantic America Records

Larry Willoughby Goes Solo

THE dynasty and musical legacy of the Johnny Cash family have already been fully detailed in these pages, but it looks as though the genealogical chart-makers are going to have to reserve an entire new branch for the family of Rodney Crowell, the extraordinarily gifted singer/songwriter/producer who's married to Johnny's singing daughter, Rosanne. As if Johnny, June Carter Cash, Rosanne, Rodney, June's daughter Carlene Carter, and Carlene's husband, Nick Lowe, aren't enough to keep the record charts locked up in a virtual family monopoly, along comes Crowell's cousin, Larry Willoughby, in an outstanding debut Atlantic album, "Building Bridges."

Willoughby had already been garnering a fair amount of attention for his song-

writing (his *Heart on the Line*, better known as *Operator, Operator*, appeared on the Oak Ridge Boys' "American Made" album) and his supporting vocals on various other artists' LP's. His solo album, however, should establish him as a well-rounded recording artist, one who is on his way to making some of the most tasteful and memorable modern country music.

Like his cousin Crowell, who produced "Building Bridges" with his usual clear-headed direction and a cast of exemplary session players, Willoughby writes concise, well-crafted songs about the risks and rewards of love and the joyous celebration of life. Willoughby is not nearly the poetic writer that Crowell is, but, unlike so many others who operate in the mainstream of country music, he never allows his work to veer into cloying sentimentality. Haunting and rhythmic in their sparse melodic structure, his songs rely heavily on low-key wit (*Lorraine*), restrained passion (*Building Bridges*), and messages between the lines (*The Devil's on the Loose*).

If such comments seem fitting for Crowell's music too, there are other similarities between the cousins, including their vocal styles. Crowell's voice is finer textured and higher than Willoughby's, but both men opt for a subtle, understated approach that makes the song, rather than the singer, the real star. For that reason, Willoughby will probably, like Crowell, develop a small but loyal following as a recording artist (while retaining his strong songwriting base) rather than attain superstar status. But in any case, Willoughby shows all the signs of becoming an important new figure not only in the Carter/Cash/Crowell dynasty but in the country music family as a whole. Check him out. —Alanna Nash

LARRY WILLOUGHBY: *Building Bridges*. Larry Willoughby (vocals); vocal and instrumental accompaniment. *Heart on the Line (Operator, Operator)*; *Building Bridges*; *Hurricane Rose*; *Angel Eyes*; *The Devil's on the Loose*; *Lorraine*; *Held in Love*; *Careless Love*; *Stone Cold*; *Sweet Little Lisa*. ATLANTIC AMERICA 90112-1 \$8.98, © 90112-4 \$8.98.

ful. If it weren't for the vest and Stetson sported by Dave Van Zandt in the jacket photo, 38 Special could easily be taken for another grab-bag of L.A. session players, so slick has the band's sound become. On this technically accomplished and cleanly produced follow-up to last year's surprising hit, "Special Forces," 38 Special gives further indication of its assimilation into the AOR mainstream. They've even borrowed some guitar riffs from the Police (on *One of the Lonely Ones* and *If I'd Been the One*).

This is hard-driving but unchallenging rock, with lots of dense, high-voltage, well-orchestrated ensemble guitar playing but too little inspired solo work. It's hard to fault 38 Special for not doing some-

thing they don't pretend to be trying to do, but there's a sameness, a generic quality to "Tour de Force" that caters to the unadventurous ear. M.P.

UTOPIA: *Oblivion*. Utopia (vocals and instrumentals). *Itch in My Brain*; *Too Much Water*; *I Will Wait*; *Crybaby*; *Welcome to My Revolution*; and five others. UTOPIA/PASSPORT PB 6029 \$8.98, © PBC 6029 \$8.98.

Performance: **Wayward**
Recording: **Cluttered**

I don't want to belabor the point, but, as I've said before, despite his gifts Todd Rundgren is a hit-or-miss performer. This album is a miss.

Rundgren has a quirky sense of humor I admire when it works, and there's no denying his skills as a producer and engineer. But his humor here is, for the most part, so self-absorbed and morose that it's not effective even as a black joke. Half of the set is buried in high-tech audio muck that's all dazzle and no substance.

There is one redeeming feature here (Rundgren's bad albums usually have a redeeming feature). It is *Love with a Thinker*, one of those songs at which Rundgren excels, where the male is either a klutz or a victim unable to save or control himself. The woman in this case is portrayed as a monster with intellectual pretensions, and the refrain is, "I wonder how much of me will be left when she's through?" It's a dandy. J.V.

RECORDING OF SPECIAL MERIT

U2: *Under a Blood Red Sky*. U2 (vocals and instrumentals). *Gloria*; *11 O'Clock Tick Tock*; *I Will Follow*; *Party Girl*; and four others. ISLAND 90127-1 \$5.98, © 90127-4 \$5.98.

Performance: **Archetypal**
Recording: **Excellent remote**

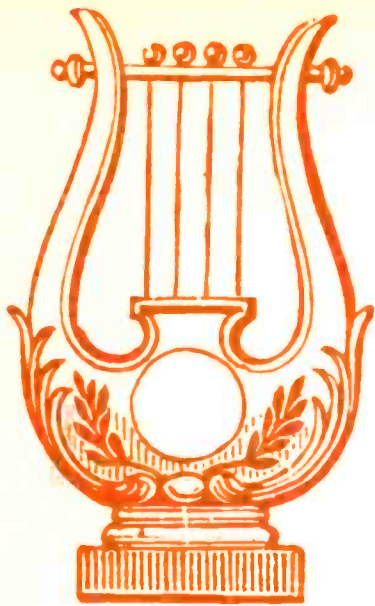
U2 represents rock at its most visceral: raw, unvarnished, emotional. And totally convincing. Through their first three albums they established themselves as one of the most compelling new groups in rock. What they hadn't established—or cared to, it seems—were any technical credentials. Until now. "Under a Blood Red Sky" ranks with the great concert recordings, an unshackled yet very musical performance.

The big surprise here is the work of guitarist Dave Evans, or "The Edge," as he calls himself. What comes across in the studio as a powerful but primitive technique is transformed here, on songs such as *Electric Co.* and *New Year's Day*, into something nearly archetypal—fiercely rhythmic, clean, agile. Bono's vocals too are monumental, more than holding their own with the energized instrumentals while making no compromises in articulation or inflection. Some of the credit must go to Jimmy Iovine for his balanced production. "Under a Blood Red Sky" reveals U2 as a band capable of performances that match the intensity of their music. If this review sounds like a rave to you, you're right. It is. M.P.

LUTHER VANDROSS: *Busy Body*. Luther Vandross (vocals); vocal and instrumental accompaniment. *I Wanted Your Love*; *I'll Let You Slide*; *How Many Times Can We Say Goodbye*; *Superstar/Until You Come Back to Me*; and three others. EPIC FE 39196, © FET 39196, no list price.

Performance: **Some high points**
Recording: **Very good**

I have always maintained that Luther Vandross is a superb singer, a gifted producer, and a considerably less talented composer. The trouble with this album, as with his two previous releases, is that he has relied too heavily on the least of his gifts. It reaches true creative heights only when he is singing songs written by



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others. Furthermore, there is a woeful predictability to his uptempo numbers. He needs to explore the varieties of dance rhythms more extensively.

There are a few outstanding selections. Vandross and Nat Adderley Jr.'s *Make Me a Believer* appropriately showcases the lush qualities of Vandross's voice against a tasteful and beautifully conceived instrumental background. Equally fine is the duet with Dionne Warwick on *How Many Times Can We Say Goodbye* (the same cut appears on the album he recently produced for Warwick). And, as always, he closes out the album with a truly lovely tidbit. This time it is a medley of Leon Russell's *Superstar* with Stevie Wonder's *Until You Come Back to Me (That's What I'm Gonna Do)*. Most of the familiar parts are cut out, and Vandross weaves his way around the delicate verses with consummate skill. Again, Adderley's arrangements are exquisite. This is Vandross at his best. When he soars, few other singers can touch him. *P.G.*

RECORDING OF SPECIAL MERIT

JANE VOSS AND HOYLE OSBORNE: *Pullin' Through*. Jane Voss (vocals, guitar); Hoyle Osborne (piano, vocals); other musicians. *In My Girlish Days*; *The Good-for-Nothin' Blues*; *When It's All Goin' Out (And Nothin' Comin' In)*; *I've Been on the Road Too Long*; *You're the Cream in My Coffee*; *So Is Your Old Lady*; and five others. GREEN LINNET SIF 1044 \$7.98 (plus \$1.50 postage and handling charge from Green Linnet Records, Inc., 70 Turner Hill Road, New Canaan, Conn. 06840).

Performance: **Delightfully eccentric**
Recording: **Adequate**

Two years after winning a STEREO REVIEW Record of the Year award for "Get to the Heart," Jane Voss and Hoyle Osborne return with "Pullin' Through," another zany romp through the upended cornucopia of life. Times being what they are, Voss and Osborne have settled on the theme of "muddling through." Given

their fertile imaginations, that can mean just about anything, and usually does.

With Jane on the bandstand and Hoyle on piano, the program moves through such wildly assorted old and new offerings as Memphis Minnie's *In My Girlish Days* (turn-of-the-century vaudeville), Malvina Reynolds's *On the Rim of the World* (1970's Berkeley social commentary), Jane's own *Good-for-Nothin' Blues*, and Hoyle's *Skylab Scuttle*, an instrumental dedicated to "the ill-starred flight of the craft that could open only one 'wing.'" And I haven't even mentioned the honky-tonk and jazz, the feminist patter. Jane's terrific job of reviving *You're the Cream in My Coffee*, or that Jim Rothermel returns on woodwinds. Whew! This is more than just a deftly concocted mood-brightener—it's a hot toddy for the soul. *A.N.*

BUNNY WAILER: Roots Radics Rockers Reggae. Bunny Wailer (vocals, percussion); instrumental accompaniment. *Roots Radics Rockers Reggae*; *Cease Fire*; *Let Him Go*; *The Conqueror*; and four others. SHANACHIE 43013 \$8.98.

Performance: **One-man show**
Recording: **Good**

Although Bunny Wailer may have been Bob Marley's closest friend, he disagreed with Marley on one major issue. Marley was committed to spreading the Rastafarian faith, but Wailer felt it wasn't something you could convince a man of; belief must come from within. "Roots Radics Rockers Reggae" was recorded in more or less the same spirit. The unassertive performances and arrangements will fail to move those not already predisposed to listen. In fact, Wailer himself is the only musician here who seems enthusiastic about the music. His strong, manly, sometimes captivating vocals carry virtually all of the melodic and rhythmic interest, shimmying up and down and taking some surprising twists. But you'll need a guidebook to follow the lyrics. This is, without question, for the brethren only. *M.P.*



ALBERT AMMONS AND MEADE LUX LEWIS: *The Complete Blue Note Recordings.* Meade Lux Lewis (piano, harpsichord, whistling); Albert Ammons (piano). *Boogie Woogie Stomp*; *Chicago in Mind*; *Suitcase Blues*; *Backwater Blues*; *Easy Rider Blues*; *Honky Tonk Train Blues* (two versions); *Twos and Fews*; *Changes in Boogie Woogie*; *The Sheik of Araby*; *Yancey Special*; *Melanchoy*; *The Blues* (Parts 1-5); *Blues Whistle*; and sixteen others. MOSAIC MR3-103 three discs \$25.50 (plus \$2.50 shipping and handling charge from Mosaic Records, 1341 Ocean Avenue, Suite 135, Santa Monica, Calif. 90401).

Performance: **Keyboard history**
Recording: **Fair mono transfers**

An infectiously rhythmic form of blues, boogie-woogie flourished in Chicago in the Twenties, but it did not originate there. Like all jazz forms, it took its basic shape from a variety of sources, and it spawned a handful of players who became its undisputed masters. The name appears to derive from *Pine Top's Boogie Woogie* by Alabama pianist Clarence "Pine Top" Smith, who did much to popularize the style in the Twenties. It is a mistake to think that all boogie-woogie is of the rollicking, bass-strutting kind. That was not the style of Jimmy Yancey, another pioneer of the idiom.

Boogie-woogie has lain dormant since the early Forties, after a brief renaissance spearheaded by the trio of Pete Johnson, Meade Lux Lewis, and Albert Ammons.

(Continued on the next page)

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Dick Hyman: reintroducing the music of Zez Confrey

Kitten on the Keys

PIANIST Dick Hyman's excellent new RCA album, "Kitten on the Keys," provides an overview of the career and compositions of Edward Elzear "Zez" Confrey. In his heyday in the Twenties, Confrey was known as an "eccentric" pianist, a term that applied as much to his post-ragtime style as to his "novelty" pieces. In fact, Confrey was as careful and deliberate a composer as Scott Joplin or stride king James P. Johnson or New Orleans jazzman Jelly Roll Morton. He also had a formidable technique, as he wrote *Dizzy Fingers* to demonstrate (Johnson's show piece was *Carolina Shout* and Morton's was *Fingerbuster*).

Kitten on the Keys was Confrey's great hit, selling countless copies of sheet music. On the strength of it, Confrey got a higher billing than George Gershwin at the Paul Whiteman "jazz" concert at Aeolian Hall in 1924 where *Rhapsody in Blue* was premiered. But while *Kitten on the Keys* is still heard occasionally, as is *Stumbling*, Confrey's vogue ended by the early Thirties. Undaunted and seemingly unconcerned, he lived on in semi-retirement until 1971, continuing to compose into the Fifties.

It's a shame that time passed Confrey by, since he was a serious musician and composer. But he was working in a genre that others also found frustrating. Although the Twenties and early Thirties were extremely fertile for "avant-garde" piano works, many of which are today revived as "new music," Bix Beiderbecke, Eastwood Lane, Edward MacDowell, and James P. Johnson found a severely lim-

ited commercial market for their creative and subtle compositions. Only Gershwin prospered, and he died young.

Hyman's album includes some of Confrey's more ambitious pieces, such as *Three Little Oddities* and *African Suite*, his famous novelty items, and some of his later compositions, such as *Della Robbia* from 1938. There are references to works of his contemporaries in some of the selections—parts of *Della Robbia* are nearly pure Beiderbecke, and there is a Jelly Roll Morton attack in sections of *African Suite*. Confrey's catholic musical taste and admiration and understanding for the accomplishments of his peers are part of what makes his music so eminently listenable today.

The versatile and accomplished Dick Hyman, who has recorded Joplin's complete works as well as albums devoted to Morton and Johnson, is an excellent choice to reintroduce Confrey's music. He plays the pieces with respect and good-natured understanding. Neither overly serious nor excessively frisky, he interprets Zez Confrey as a fully formed musician, which is what he was. A very welcome release. —Joel Vance

DICK HYMAN: *Kitten on the Keys—The Music of Zez Confrey*. Dick Hyman (piano). *Kitten on the Keys*; *Della Robbia*; *My Pet*; *Three Little Oddities*; *You Tell 'Em*; *Ivories*; *Valse Mirage*; *Stumbling*; *Coaxing the Piano*; *Grandfather's Clock*; *Dizzy Fingers*; *African Suite*; *Anticipation*; *Nickel in the Slot*. RCA XRL1-4746 \$8.98, © XRK1-4746 \$8.98.

(In 1928, when Pine Top first recorded his famous boogie, he shared his Chicago address with Ammons and Lewis, and I can just imagine the glorious sounds that must have emanated from the parlor piano of that house!) In January 1939, Ammons and Lewis made the first in a series of extraordinary recordings for the then-new Blue Note label. Most of these, including eight previously unissued tracks, are included in this new Mosaic set, which also includes Lewis's famous 1935 remake of *Honky Tonk Train Blues*, the side that launched the revival. The title of the album is regrettably misleading, for these are *not* the only recordings made by Ammons and Lewis for Blue Note. Missing are the band selections: the wonderful Port of Harlem Seven sides Lewis made with Frankie Newton, J. C. Higginbotham, and Sidney Bechet; recordings made by both pianists with groups led by Newton and Higginbotham; and Lewis's celebrated Edmond Hall Celeste Quartet session with Charlie Christian. What we are left with is all the keyboard sides, a fascinating collection that superbly demonstrates how versatile boogie-woogie can be in the right hands. I prefer the piano sides, but Lewis also handled a harpsichord effectively, and the sides on which he whistles are wonderful.

There is an occasional pop or click that I wish someone had removed, but the transfers are, in the main, well done. A fourth disc, containing the band sides, would have justified the set's title and given it more variety, but most listeners will probably be pleasantly surprised by the many shades of boogie and blues that the keyboard alone affords. C.A.

RICHARD RODNEY BENNETT: *Harold Arlen's Songs*. Richard Rodney Bennett (vocals, piano). *It's Only a Paper Moon*; *A Sleepin' Bee*; *My Shining Hour*; *As Long As I Live*; and nine others. AUDIOPHILE AP-168 \$8.98 (from Audiophile Records, 3008 Wadsworth Mill Place, Atlanta, Ga. 30032).

Performance: **Worldly**
Recording: **Good**

Richard Rodney Bennett's film scores, such as *Far from the Madding Crowd*, are probably better known than his work as a club performer. This small-scaled solo album is his tribute to the great Harold Arlen, a composer who is too often left out in any rundown of Golden Age masters. Bennett's performing style is worldly, self-effacing, and dead earnest. While he may miss the jauntier ironies of *As Long As I Live*, he is totally and expressively at home with the love songs, such as *My Shining Hour*. Pleasant listening. P.R.

BIG SKY MUDFLAPS: *Sensible Shoes*. Big Sky Mudflaps (vocals and instrumentals). *Groovin' High*; *One Mint Julep*; *He May Be Your Man*; *Mood Indigo*; *Straight No Chaser*; and five others. FLYING FISH FF 293 \$8.98.

Performance: **Good**
Recording: **Good**

This seven-member group from Montana is certainly eclectic. The program here includes selections by Thelonious Monk,

Harold Arlen, Duke Ellington, the Boswell Sisters, Helen Humes, and Dizzy Gillespie, some with added lyrics. Two of the women in the group, both string bassists, double as lead and back-up vocalists. The arrangements are adventurous, the instrumentals are confident, and the vocals are conscientious. But, while "Sensible Shoes" is an entertaining, high-spirited album, I must regretfully note that the vocalists lack something in the pipes department. *J.V.*

DOC CHEATHAM: *It's a Good Life!* Doc Cheatham (trumpet, vocals); Chuck Folds (piano); Al Hall (bass); Jackie Williams (drums). *Struttin' with Some Barbeque*; *She's Funny That Way*; *The Good Life*; *Ring Dem Bells*; *You're Lucky to Me*; and two others. PARKWOOD 101 \$8.98 (from Parkwood Records, P.O. Box 174, Windsor, Ontario N9A 4H0).

Performance: **Very good**
Recording: **Very good**

Trumpeter Doc Cheatham has been active since the early Twenties, when he learned mute-playing by watching King Oliver and met young Louis Armstrong. By the mid-Twenties he was in McKinney's Cotton Pickers, a highly regarded band that had the considerable services of alto saxist/arranger Don Redman, whose work is the basis for Cheatham's vocal style. In the Thirties Cheatham found secure employment with Cab Calloway, Teddy Wilson, and Benny Carter. Most of his career has been spent in bands, but in recent years he's toured on his own as a featured artist at jazz festivals.

He is also a club regular at Sweet Basil's in New York, where he works with the trio that backs him up on this record. *Struttin' with Some Barbeque* is a tribute to Louis Armstrong, and there are bows to Duke Ellington on *It Don't Mean a Thing* and *Ring Dem Bells*, on both of which pianist Chuck Folds takes muscular "stride" solos. Cheatham's horn still rings true, and his vocals (he rolls his "r's") are cozy. This album was recorded when he was seventy-seven; he sounds twenty years younger. *J.V.*

JOE DERISE: *Blues Are Out of Town.* Joe Derise (vocals, piano); Ben Seawell (bass); Bob Russell (guitar); Bruce Pearce (drums). *Chicken Road*; *Blues Are Out of Town*; *Forgetful*; *Then I'll Be Tired of You*; and seven others. AUDIOPHILE AP-174 \$8.98.

Performance: **Good**
Recording: **Good**

Joe Derise is one of those "in" performers whose name is not widely known outside of jazz circles. Although I recognize his musicianship and dedication to his craft, his performances leave me well on this side of tepid. I like him best here in his own material, such as the title song, probably because I have no existing frame of reference for it. When he meanders through some of my personal favorites, *Then I'll Be Tired of You* or the great Arlen/Harburg *Down with Love*, for example, he loses me. *P.R.*

(Continued on page 99)

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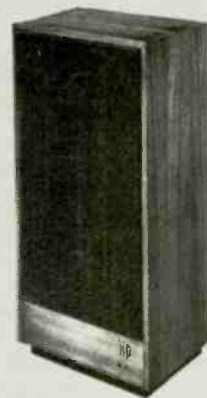
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Burt Goldblatt

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Verve's Back!

DURING the Fifties and on into the early Sixties, Norman Granz's Verve was the most prolific jazz-oriented record label around. Granz favored the more conservative forms of jazz, and his vast artist roster read like a *Who's Who* of late swing and early bop.

Some critics wish Granz had been more adventurous as a producer, but no one can deny that his standards were high. Verve remained a high-quality label until it was bought by MGM. But these days Verve—and, for that matter, MGM—is part of the PolyGram record group, and, by way of imports from Japan and France, PolyGram is making some of Granz's gems once again available in this country. The imported Verve albums are almost exact duplicates of the original releases, right down to the covers and liner notes, but superior pressings give the imports an overall sound quality considerably clearer than that of the originals.

Not all the Verve imports date back to the Granz period, but even the later material has been carefully chosen for its musical value. Among recent arrivals from France is "Songs for Distinguished Lovers," a set culled from three consecutive 1957 sessions by Billie Holiday and a sextet featuring trumpeter Harry Edison, tenor saxophonist Ben Webster, and pianist Jimmy Rowles. These were among Holiday's last Verve dates, ending a five-year recording relationship with Granz. Her voice had seen better days, but even the wear and tear could not mask that character that was so distinctly hers. Good or bad, Lady Day was in a class by herself.

"Jazz at the Hollywood Bowl" is a double album that captures a 1956 concert, the first all-music jazz affair to be held on that famous outdoor stage. The Granz elite were out in force for this one. Various combinations create a variety of sounds, complete with obligatory jam sessions and ballad medley, all rendered with a combination of enthusiasm and sensitivity. Only at the end, on that tired old warhorse *When the Saints Go Marching In*, does the ensemble sound bored. With one exception, the rest of the album is delightful. The high points are four Art Tatum piano solos; the nadir is Buddy Rich's egomaniacal drum solo in *Jumpin' at the Woodside*.

There is wonderful input also from Illinois Jacquet, Roy Eldridge, Harry Edison, and Flip Phillips on a jam version of *Honeysuckle Rose*, and the latter three take turns on the ballad medley in some very pretty "playing for the people." Oscar Peterson and Ella Fitzgerald are also on hand, the former in two trio performances, the latter for six songs with a quartet including guitarist Barney Kessel, then teamed with Louis Armstrong and his All-Stars for two more. On *I Can't Give You Anything but Love*, Fitzgerald does effective impersonations of Armstrong and Rose Murphy before taking off on a flying scat version of *Air Mail Special*. When Louis joins her, Ella catches his infectious humor for a light-hearted *You Won't Be Satisfied*. It is typical Ella of that period.

Fitzgerald appears again on a 1963 summit meeting called "On the Sunny Side of the Street." The meeting is with Count Basie, who swings as she sings twelve arrangements by Quincy Jones. The program was familiar even then, but the approach still sounds fresh today. On two of the tracks in this encounter, *Them There Eyes* and *Dream a Little Dream of Me*, Fitzgerald breezes along with Basie's super-light rhythm section, gently nudged by three formidable horn players, Joe Newman, Urbie Green, and Frank Foster. It proves most eloquently that all that is commercial is not pop.

A Dizzy Gillespie album that is, in the strict sense, neither commercial nor pop bears the hyperbolic title "The Greatest Trumpet of Them All." Surely that title belongs to Louis Armstrong. Unfortunately, this is not even Gillespie's greatest album. It is a fairly average 1957 octet session with Benny Golson, Gigi Gryce, and Pee-Wee Moore on reeds and a rhythm section headed by pianist Ray Bryant. Gillespie seems to lack interest on most of the eight tracks, and on Gryce's south-of-the-border-flavored *Sea Breeze* he sounds downright bored. The arrangements, by Golson and Gryce, sound very dated. There are, however, gratifying moments on *Blues After Dark* and, especially, *Smoke Signals*. Then too, Ray Bryant plays very well throughout.

Other recent Verve imports include a velvety 1958 Mel Tormé set ("Tormé," 2304 500), a wonderful 1952 Stan Getz Quintet album with Jimmy Raney and

Duke Jordan ("Stan Getz Plays," 2304 387), Bill Evans's mid-Sixties bow to classical composers from Bach to Fauré ("Bill Evans Trio with Symphony Orchestra," 2304 525), a memorable 1954 Tal Farlow date ("Autumn in New York," 2304 321), and assorted sounds from Oscar Peterson, Astrud Gilberto, Jimmy Smith, and Roland Kirk.

Thanks, PolyGram. —Chris Albertson

BILLIE HOLIDAY: *Songs for Distinguished Lovers*. Billie Holiday (vocals); Harry Edison (trumpet); Ben Webster (tenor saxophone); Jimmy Rowles (piano); Barney Kessel (guitar); Joe Mondragon, Red Mitchell (bass); Alvin Stoller, Larry Bunker (drums). *Stars Fell on Alabama; Day In, Day Out; A Foggy Day; One for My Baby (And One More for the Road); Just One of Those Things; I Didn't Know What Time It Was.* VERVE/POLYGRAM SPECIAL IMPORTS © 2304 243 \$9.98.

JAZZ AT THE HOLLYWOOD BOWL. Harry Edison and Roy Eldridge (trumpet), Flip Phillips and Illinois Jacquet (tenor saxophone), Oscar Peterson (piano), Herb Ellis (guitar), Ray Brown (bass), and Buddy Rich (drums): *Honeysuckle Rose; I Can't Get Started/If I Had You/I've Got the World on a String; Jumpin' at the Woodside.* Oscar Peterson (piano), Herb Ellis (guitar), and Ray Brown (bass): *9:20 Special; How About You.* Art Tatum (piano): *Someone to Watch Over Me; Begin the Beguine; Willow Weep for Me; Humoresque.* Ella Fitzgerald (vocals), Paul Smith (piano), Barney Kessel (guitar), Joe Mondragon (bass), and Alvin Stoller (drums): *Love for Sale; Just One of Those Things; Little Girl Blue; Too Close for Comfort; I Can't Give You Anything but Love; Airmail Special.* Ella Fitzgerald (vocals), with Louis Armstrong and His Orchestra: *You Won't Be Satisfied; Undecided.* Ensemble: *When the Saints Go Marching In.* VERVE/POLYGRAM SPECIAL IMPORTS © 2610 058 two discs \$13.98.

ELLA FITZGERALD AND COUNT BASIE: *On the Sunny Side of the Street*. Ella Fitzgerald (vocals); Count Basie and His Orchestra. *Honeysuckle Rose; 'Deed I Do; Into Each Life Some Rain Must Fall; Them There Eyes; Dream a Little Dream of Me; Tea for Two; Satin Doll; I'm Beginning to See the Light; Shiny Stockings; My Last Affair; Ain't Misbehavin'; On the Sunny Side of the Street.* VERVE/POLYGRAM SPECIAL IMPORTS 2304 049 \$9.98.

DIZZY GILLESPIE: *The Greatest Trumpet of Them All*. Dizzy Gillespie (trumpet); Henry Coker (trombone); Gigi Gryce (alto saxophone); Benny Golson (tenor saxophone); Pee-Wee Moore (baritone saxophone); Ray Bryant (piano); Tommy Bryant (bass); Charlie Persip (drums). *Blues After Dark; Sea Breeze; Out of the Past; Shabazz; Reminiscing; A Night at Tony's; Smoke Signals; Just by Myself.* VERVE/POLYGRAM SPECIAL IMPORTS © 2304 382 \$9.98.

JIMMY DORSEY: *Mostly 1940.* Helen O'Connell, Bob Eberly (vocals). Jimmy Dorsey and His Orchestra. *I'll Never Smile Again; Only a Rose; And So Do I; Let There Be Love*; and eight others. CIRCLE © CLP-46 \$8.98.

Performance: **For fans**
Recording: **Okay mono**

Here's another resurrection of sides from the big-band era. The Jimmy Dorsey Orchestra was one of the slickest and most commercial of the big bands, and a lot of its flash came from the vocalizing of pretty-as-a-picture Helen O'Connell and pretty-as-a-picture Bob Eberly. Heard on these recordings—mostly, as the title says, from 1940—they sound more than a little bland and dimly lifeless. The Dorsey orchestra, however, still seems to have its fans, and I suppose this album is manna from heaven for them. *P.R.*

LARRY ELGART: *Hooked on Swing.* Larry Elgart and his Orchestra. *Puttin' on the Ritz; Boogie Woogie; Satin Doll; La Cage aux folles*; and six others. RCA AFL1-4850 \$8.98, © AFK1-4850 \$8.98.

Performance: **Okay**
Recording: **Good**

This is a rather pointless outing in which Larry Elgart attempts to re-create, with the help of several slick arrangements by a variety of hands, the great sound and energy of the salad days of swing. Just why he felt he needed to is a mystery

since—with the exception of a couple of songs from *La Cage aux folles*, *Chameleon Days* from Woody Allen's *Zelig*, and his own *Bandstand Blues*—everything here has already been recorded by one or another of the great swing bands of the past. Elgart still plays masterly saxophone, as can be heard in his extended solo in *Harlem Nocturne*, but I would prefer to hear him employ his talents without needless retro trappings. *P.R.*

RECORDING OF SPECIAL MERIT

STÉPHANE GRAPPELLI AND MARC FOSSET: *Stephanova.* Stéphane Grappelli (violin); Marc Fosset (guitar). *Tune Up; Thou Swell; My Foolish Heart; Norwegian Dance; The Way You Look Tonight*; and seven others. CONCORD JAZZ CJ-225 \$8.98, © CC-225 \$8.98.

Performance: **Excellent**
Recording: **Excellent**

My tastes in jazz violin were formed early when I heard recordings of Joe Venuti playing with guitarist Eddie Lang. Those duet recordings, dating from the Twenties, inspired the formation of the Quintet of the Hot Club of France, in which Venuti's and Lang's roles were assumed, superbly, by Stéphane Grappelli and Django Reinhardt. With due respect to those who followed them, I still regard Venuti and Grappelli as the masters.

In his liner notes for this album. Al Young makes the point that Grappelli

plays better today than he did in the Thirties, and I agree. Listening to this album, I was reminded of hearing Venuti play at a club only a few years before he died (at an advanced age): at the time I marveled that he hadn't lost any of his power, technique, or imagination.

Like Venuti, Grappelli favors decoration in his playing. Venuti's flourishes grew out of his bravura style and outlandish sense of humor; Grappelli's are romantic. On this date, recorded in June 1983 with young guitarist Marc Fosset, Grappelli excels on a selection of ballads. His playing is as sturdy but intricate as a stained-glass design, and equally as colorful. Fosset, who plays with a touch of Reinhardt but does not imitate him, supports and complements Grappelli with a frisky delicacy. He also wrote the title tune, a tribute to this past and present master of the jazz violin. *J.V.*

JIMMY McGRUFF: *Countdown.* Jimmy McGriff (organ); other musicians. *I'm Walkin'; Holly; Shiny Stockings*; and three others. MILESTONE M-9116 \$8.98, © M5-9116 \$8.98.

Performance: **Romping organ**
Recording: **Good**

It must have been at least ten years since I last heard a new Jimmy McGriff album. "Countdown" is a new release, recorded about a year ago, but it could have been made twenty years ago. Even the repertoire is dated. If the tenor/organ style that



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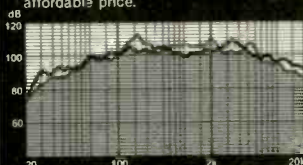
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proliferated on the Prestige label in the Sixties is your thing, you will undoubtedly love this album. Organist McGriff's music seems to have been frozen in time; it's fine for old-fashioned finger popping, but I'm glad we moved on. C.A.

MILLIE VERNON: *Old Shoes*. Millie Vernon (vocals); Garry Dial (piano); Brian Torff (bass); Duffy Jackson (drums); Miltie Hissler (reeds). *Knock Me a Kiss; I Cried for You; My One and Only Love; Don't Worry 'bout Me*; and six others. AUDIOPHILE AP-178 \$8.98.

Performance: **Good**
Recording: **Good**

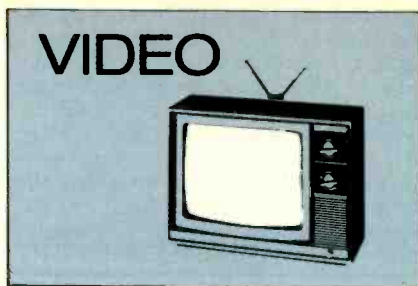
Millie Vernon is a much-admired jazz singer who has been recording intermittently since the Fifties. She has one of those smoky, lush voices that seem to be a prerequisite of a certain kind of jazz singing. While she certainly knows her way around a lyric, there is a distant, blurred quality to her performances here—not always (she does a lovely, limpid *I Cried for You*, for instance), but often enough to spoil a good deal of this recording. P.R.

DINAH WASHINGTON: *A Slick Chick (on the Mellow Side)*. Dinah Washington (vocals); instrumental accompaniment. *Fat Daddy; Teach Me Tonight; I'll Never Be Free; Wheel of Fortune; Trouble in Mind; Baby Get Lost; Dream; I Don't Hurt Anymore; It Isn't Fair; I Won't Cry Anymore; Walkin' and Talkin'; T.V. Is the Thing This Year; I Wanna Be Loved*; and fourteen others. EMARCY © 814 184-1 two discs \$10.98, © 814 184-4 one cassette \$10.98.

Performance: **Fine**
Recording: **Poor to fair**

While we continue to revere the female blues singers of the Twenties, we have a tendency to overlook those who followed in their footsteps a decade or two later. Twenty years ago, death cut short the career of Dinah Washington, but her influence continues to be heard in the work of many current singers, and she has at least one well-known emulator, Esther Phillips. Still, jazz biographers and collectors have shown relatively little interest in Washington, and I suspect it is because her best recordings were made in the pop genre. She sang such ballads as *What a Diff'rence a Day Made* and *This Bitter Earth* with enormous success, and while they were not jazz performances per se, each note reflected enough of her gospel and blues background to make the result widely palatable.

"Slick Chick (on the Mellow Side)," a new EmArcy double album, contains twenty-seven of the six hundred sides Dinah Washington did for Mercury between 1943 and 1961. Unfortunately, much of this material, poorly recorded during the first eleven years of the association, is trite, cliché-ridden blues, made bearable only by the strength of her performances. There are moments of interest, of course, but this set, which bears the slightly misleading subtitle, "The Rhythm & Blues Years," will do little to increase Washington's following. C.A.



ELTON JOHN: *Visions*. Elton John (vocals, piano); other musicians. *Breaking Down Barriers; Elton's Song; Just Like Belgium*. SONY VIDEO 45 VHS 1201 \$19.95, Beta \$15.95.

Performance: **Charming**
Recording: **Not bad**

For a while there, back in the early Seventies, Elton John was the only person in the world who could consistently break through the programmed monotony of Top Twenty radio. His music wasn't terribly substantial; in fact, it was disposable pop trash (as Elton cheerfully admitted). But it was also impeccably done and, even at its silliest, it had a brash exuberance that reflected the personality of its creator.

That brash exuberance is in short supply in this new Video 45 of some of Elton's recent material. It is, actually, pretty dull fare as rock videos go, but I'm inclined to blame director Russell Mulcahy rather than the nominal star. Mulcahy, who's also done Duran Duran, staged these songs for maximum glitz value; *Barriers* features expensive special effects pilfered from the first *Superman* flick, *Elton's Song* is a gauzy, soft-focus mini-movie about an adolescent crush at an English boys' school, and *Belgium* is a cabaret number with a large cast of dancing hippies. It's all very pleasant to look at (orice), and I'm happy to report that Elton's goony charm remains intact throughout, but the songs simply do not support all the production gloss.

This is singer/songwriter stuff at heart. Mulcahy should have just let Elton stop talking and sing. The sound, by the way, is on the dull side but not bad for conventional VHS. —Louis Meredith

RECORDING OF SPECIAL MERIT

MAKING MICHAEL JACKSON'S "THRILLER." VESTRON VHS MA 1000 \$29.95, Beta MB 1000 \$29.95, CED MC 1000 \$29.95, LaserDisc ML 1000 \$29.95.

Performance: **Exciting**
Recording: **Very good**

In case you haven't seen it by now, director John Landis's mini-movie version of Michael Jackson's *Thriller* is not your average video. Rather, it's a fourteen-minute, big-budget short film with a lot of nonmusical narrative stretches and a lot of state-of-the-art special effects. Visually, it's *A Hard Day's Night of the Living Dead*. While it works as an affectionate spoof of Fifties horror flicks such as *I Was a Teenage Werewolf*, there's nothing in it that you won't have seen already in

Landis's *American Werewolf in London*. The musical sequences are similarly second-hand—the zombie chorus line in this video might as well be the gang members from Jackson's *Beat It* video in monster drag.

Granting all that, however, I still think this is an exciting release. For one thing, it doesn't take itself particularly seriously. More important, Jackson comes off less as a performer than as a force of nature, an astonishing androgynous amalgam of Elvis Presley and James Brown. No matter what else is happening on the screen, you can't take your eyes off him (at least when he's dancing).

The rest is the usual documentary stuff (Michael rehearsing, effects-man Rick Baker demonstrating his bag of tricks), but it's interesting enough, and Vestron has fleshed it out with clips of other musical numbers, including a long stretch from *Beat It* (which remains breathtaking) as well as Jackson's *Billy Jean* from the Motown Twenty-Fifth Anniversary special, which more or less defines cool for the foreseeable future. All in all, this is quite a package for your thirty bucks. The sound, by the way, is surprisingly good for VHS (you can get it in Beta Hi-Fi too), and, of course, real stereo makes all the difference in the world with a high-tech music-video package like this.

—Louis Meredith

THE MEN OF CHIPPENDALES: *Muscle Motion*. PIONEER LASERDISC PA-83-049 CX stereo, standard play \$24.95.

Performance: **For voyeurs**
Recording: **Okay**

Ostensibly, this is just another one of those workout programs, à la Jane Fonda's, but it could turn out to be the sleeper comedy video of the year. The Men of Chippendales are a bunch of what are known in the trade as "hunks" (male strippers), and they jump up and down in their skivvies to the numbing accompaniment of some of the most mediocre disco music since before the Village People went back to their day jobs. There's also a prologue in which the guys strut their stuff before a rowdy audience of the women who have made the Chippendales men the biggest franchising success since Burger King.

What really puts "Muscle Motion" over is technology. The disc is standard play, which means, as video aficionados know, that you can watch it a frame at a time. If a particular pose strikes your fancy, you can make it appear and reappear, move forward or backward, fast or slow, to your heart's content. Both the voyeuristic possibilities and the comedic potential should be obvious. For whatever it's worth, I'm told that in terms of exercise "Muscle Motion" is as legitimate as any competing workout video. I don't care much. Truth is, I don't think I've had so much fun with my TV set since NBC's *Celebrity Challenge of the Species* starring Morris the Cat, Seattle Slew, and Richard Simmons. —Louis Meredith

OLIVIA NEWTON-JOHN: *Olivia in Concert*. Oliva Newton-John (vocals);



Darryl Pitt/Reema Ltd.

Dizzy Gillespie

Jazz Videos

SONY has been releasing video snippets of jazz performances on its Video 45 label under the series title "Jazz in America." They average about twenty minutes apiece (about the same as Sony's so-called Video LP's), and each one consists of two selections recorded live at club dates. So far I have seen three of them, and, although the picture quality and direction are less than they could be, the music is excellent.

The Dizzy Gillespie Octet was recorded three years ago at Howard Rumsey's well-known California club. The playing is characteristically good, with fine solo work by guitarist Ed Sherry, altoist Paquito D'Rivera, and Gillespie himself. The Gerry Mulligan Quartet offers a worthy seventeen minutes on a cassette taped three years ago at Eri's in New York City. With pianist Harold Danko bubbling over and under as well as accenting the propulsive bass playing of Frank Luther and the superb drumming of Billy Hart, Mulligan charges through *North Pacific Run* and *K4 Pacific*. It's almost sparkling enough to make you forget the fuzzy picture and insensitive direction.

Max Roach's excellent quartet is captured as it appeared in early 1981 at Blues Alley in Washington, D.C. Trumpeter Cecil Bridgewater spends too much time making cute sounds with his mouthpiece at the end of *Six Bits Blues*, but otherwise this is superb fare from a group that also includes bassist Calvin Hill, tenor saxophonist Odean Pope, and, of course, the immaculately attired Mr. Roach. Bridgewater is good when he isn't making sound effects, but there is more bite in Pope's playing, especially on *Effie*.

Perhaps I am spoiled by laser-read video discs, but I find it annoying to watch a

video recording that looks like a third-generation, slow-speed dub. If Sony wants the series to be successful, something had better be done to clean up the picture quality. It might also help if some more thought went into the production. The musicians obviously know the order of solos in advance, and so should the video director. Too often in these recordings we finally get a shot of an artist when he's halfway through his solo. And we do not really need to have the song titles and artists' names superimposed on the picture, especially when the information is readily available on the tape label and on the box.

It's good to see jazz videos on the market, but I wish the technical quality matched that of the music.

—Chris Albertson

JAZZ IN AMERICA: DIZZY GILLESPIE. Dizzy Gillespie (trumpet); Tom MacIntosh (trombone); Paquito D'Rivera (alto saxophone); Valerie Capers (piano); Ed Sherry (guitar); Michael Howell, Ray Brown (bass); Tom Campbell (drums). *Be Bop; Birk's Works*. SONY VIDEO 45, VHS \$19.95, Beta \$15.95.

JAZZ IN AMERICA: GERRY MULLIGAN. Gerry Mulligan (baritone saxophone); Harold Danko (piano); Frank Luther (bass); Billy Hart (drums). *North Atlantic Run; K4 Pacific*. SONY VIDEO 45 VHS \$19.95, Beta \$15.95.

JAZZ IN AMERICA: MAX ROACH. Max Roach (drums); Cecil Bridgewater (trumpet); Odean Pope (tenor saxophone); Calvin Hill (bass). *Effie; Six Bits Blues*. SONY VIDEO 45 VHS \$19.95, Beta \$15.95.

vocal and instrumental accompaniment. *Deeper Than the Night; Physical; Heart Attack; Xanadu; I Honestly Love You; Silvery Train; Hopelessly Devoted to You; You're the One I Want;* and ten others. MCA VIDEODISC 74-021 CX stereo. extended-play \$24.95.

Performance: **Self-indulgent**

Recording: **Good video and audio**

Olivia Newton-John's success is a good example of the power of media hype. She has a fair voice, but no more, and she has been blessed with catchy material and clever management. "Olivia in Concert" was taped at two concerts given in Ogden, Utah, as part of a promotion tour for her hit single *Physical*. It starts off with an overly long montage reflecting the Australian singer's career: we see Olivia as a child, as a teenager, with Queen Elizabeth, with a horse, with a dog, shaking hands with President Reagan, posing on album and magazine covers and posters, in scenes from some of her dreadful movies—you get the picture. It looks like one of those success-story satires, and it is positively nauseating. But wait, there's more: about seventy-five minutes of her gyrating and posing through eighteen songs, and all with a characteristic I-am-wonderful-and-cute attitude.

There is some genuine talent here, but it is mainly in the supporting cast—both on and off stage. They used eight cameras to capture this exercise in self-indulgence, but the director has somehow managed to make it look like two or three. The stereo sound, recorded on twenty-four-track equipment, is good too. C.A.

ROD STEWART: Tonight He's Yours. Rod Stewart (vocals); other musicians. *Do Ya Think I'm Sexy?; Young Turks; Passion*. SONY VIDEO 45 VHS 1211 \$19.95, Beta \$15.95.

Performance: **Depressing**

Recording: **Dull**

Ultimately, your reaction to any Rod Stewart video comes down to your answer to the question posed by one of his recent hits, which is included here, by the way. To put it bluntly, do ya think he's sexy? I used to (before he fired the Faces), but I don't any more. A significant number of people still do, though, and many of them were in attendance at the Los Angeles concert where this live video was recorded.

Stewart's stage act, which used to be among the most warmhearted and funny in rock, has degenerated to the level of second-rate male strip tease. If you like lots of shots of the star's armpits, you're going to adore some of the footage here. And if it's subtlety you want, I need only refer you to Rod's costume change into a hot-pink jacket during *Passion* (how's that for a thematic visual?). Beyond that, "Tonight He's Yours" doesn't even have much to recommend it on the technical level. Stewart's not in good voice, the shooting is routine or worse, and the sound suggests an unmixed off-the-board feed. Still, I suppose if you were there, or at one of the other stops along the tour, this is not without some kind of nostalgia value.

—Louis Meredith

Classical Music

DISCS AND TAPES
REVIEWED BY
RICHARD FREED
DAVID HALL
GEORGE JELLINEK
STODDARD LINCOLN
ERIC SALZMAN

J. S. BACH: Suites for Solo Cello (BWV 1007-1012). Paul Tortelier (cello). ANGEL/EMI-UK SLS 1077723 three discs \$29.94, © TC-SLS 1077725 three cassettes \$29.94 (from International Book & Record Distributors, 40-11 24th Street, Long Island City, N.Y. 11101).

Performance: **Grand**
Recording: **Fine**

J. S. BACH: Suites for Solo Cello (BWV 1007-1012). Yo-Yo Ma (cello). CBS 13M 37867 three discs, © 13MT 37867 three cassettes, no list price.

Performance: **Intimate**
Recording: **Also fine**

Paul Tortelier's performances of Bach's six suites for unaccompanied cello are in the grand tradition—larger than life, mannered, and projected for a large hall. Yo-Yo Ma, on the other hand, plays within a smaller framework but with plenty of fire in the dances; he presents the works as chamber music scaled for a smaller venue. Both cellists are wonderful musicians with spectacular techniques, so for the prospective buyer it really comes down to a matter of personal preference: Tortelier's cosmic approach or Ma's lighter, more intimate one. The recorded sound in both instances is first-rate and appropriately scaled to the fairly dissimilar ways these two artists have of putting this wonderful music across. S.L.

BEETHOVEN: Piano Sonata No. 3, in C Major, Op. 2, No. 1; Piano Sonata No. 21, in C Major, Op. 53 ("Waldstein").

Explanation of symbols:

- Ⓛ = digital-master analog LP
- Ⓢ = stereo cassette
- Ⓣ = digital Compact Disc
- Ⓢ = eight-track stereo cartridge
- Ⓛ = direct-to-disc recording
- Ⓜ = monophonic recording

David Bar-Illan (piano). AUDIOFON 2009 \$11.98.

BEETHOVEN: Variations in E-flat Major, Op. 35 ("Eroica"). RAMEAU: Gavotte and Six Doubles. SOLER: Sonata No. 1, in D Minor; Sonata No. 4, in D Minor. MOZART: Rondo in A Minor, K. 511. David Bar-Illan (piano). AUDIOFON 2013 \$11.98.

Performances: **Impressive**
Recordings: **Hard piano sound**

David Bar-Illan has been and still is one of the best Beethoven interpreters

Illan is moved or at least excited by Beethoven; earlier music does not seem to provoke the same involvement.

Audiofon, which produces its records in Miami, Florida, boasts not only of its minimal editing policies but of its high-quality pressings and vinyl. I was only moderately taken with these pressings, however. At least one side had a recurring defect. There is some (pre-?) echo in places on the sonata disc, and I found the piano sound a little hard—possibly the fault of the piano itself rather than the recording. But overriding all is the sturdiness of Bar-Illan's Beethoven. E.S.

Reg. Wilson/EMI Music



Paul Tortelier

Don Hunstein/CBS Masterworks



Yo-Yo Ma

around—particularly of the "public" Beethoven represented by show pieces like the early C Major Sonata, the *Waldstein*, and the *Eroica* Variations, all works designed for concert performance and hence possessing a certain extroverted showiness. If it is true that, as the producers claim, there is only very minimal editing here, then these performances are still more impressive. Bar-Illan is not a pianist of introverted reflection, but he has enormous technical assurance that is never merely flashy and almost always musically satisfying. Tempos are on the button, phrasing and shaping are natural and flowing, articulation and gesture are well defined and grand without ever being overblown or flamboyant.

Strangely enough, what works so well for Beethoven doesn't make it in the eighteenth century. The Mozart is particularly and distressingly detached. Bar-

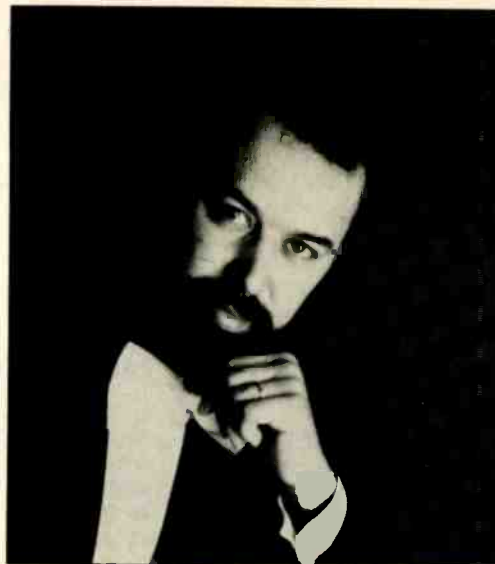
BRAHMS: Violin Concerto in D Major, Op. 77. Gidon Kremer (violin); Vienna Philharmonic Orchestra, Leonard Bernstein cond. DEUTSCHE GRAMMOPHON 1 2532 088 \$11.98, © 3302 088 \$11.98; © 410 029-2, no list price.

Performance: **Enlivening**
Recording: **Fine**

Gidon Kremer's debut release in the United States was a Brahms concerto he recorded with Karajan, who was quoted on the jacket as declaring Kremer to be "the greatest violinist in the world." When I reviewed that Angel recording (March 1977), I thought it lacking in momentum, and I found Karajan's approach unusually deferential, to the point of his being less than a full partner. Kremer's remake with Leonard Bernstein—a more sympathetic partner, to judge from their several collaborations—was recorded

The Music of Kodály

Conductor Árpád Joó



CALGARY, in Alberta, Canada, would not appear to be a likely hotbed for Hungarian culture, but something is going on there. It is the home base for Sefel Records, a label that has specialized to date in the music of Béla Bartók and Zoltan Kodály. And the star of Sefel's artist roster is Árpád Joó, the music director of the Calgary Symphony. Joó was a pupil and protégé of Kodály in his native Hungary until he emigrated in 1968 at the age of twenty. Joseph Sefel, the label's owner and executive producer, had the fine idea of returning Joó to Budapest to work with Hungarian musicians on a series of recordings of the major orchestral works of Bartók and the large-scale choral and orchestral music of Kodály. The Bartók records were released in 1982, the Kodály albums at the end of last year.

It was a big undertaking, and it has been successfully carried off. Everything is recorded in splendid digital sound and has been given an elegant and lively, if not always careful, production. As attractive as they are, however, the Bartók recordings must compete with many others having an equal claim to special merit or authority. The new Kodály albums cover musical terrain that has been less frequently explored, at least outside of the composer's native land.

Kodály's influence outside of Hungary is almost entirely confined to the world of choral music. His idiom was a conservative one to begin with, and it grew more so with the passing years. Except for some obvious Hungarianisms, it is not easy to recognize a distinctive Kodály style. The best works offered here turn out to be, with one or two exceptions, the best-known ones: the *Háry János* Suite, the *Psalmus Hungaricus*, and the *Te Deum* especially. By and large, the earlier music seems to have more flair than the later. The Concerto for Orchestra of 1939 is a more captivating and individual work than Kodály's lone symphony, which appeared after World War II. The collections of folk dances are more engaging than the abstract symphonic works.

There is no denying that this is a very fresh, richly produced, and attractive set of six albums (all available singly), but it's a pity that the liner notes and sleeve material weren't more carefully edited. Fortunately, the essential stuff inside the covers, the performances and recordings themselves, is first-rate. On the face of it, I'd say that in Árpád Joó the great line of Hungarian conductors has assured representation in the younger generation.

—Eric Salzman

KODÁLY: *Psalmus Hungaricus; An Ode; Hungarian Rondo.* János Nagy (tenor); Hungarian Children's Choir; Hungarian Radio Choir; Budapest Symphony Orchestra, Árpád Joó cond. SEFEL ● SEFD 5010 \$15.98.

KODÁLY: *Missa Brevis; Te Deum.* Sarolta Péczely-Kodály, Veronika Kincses, Julia Paszthy, Maria Zempleni (sopranos); Tamara Takács (alto); János Nagy (tenor); József Gregor (bass); Hungarian Radio Choir; Budapest Symphony Orchestra, Árpád Joó cond. SEFEL ● SEFD 5011 \$15.98.

KODÁLY: *Variations on a Hungarian Folk Song ("Peacock Variations").* Budapest Philharmonic Orchestra, Árpád Joó cond. **Symphony.** Hungarian State Concert Orchestra, Árpád Joó cond. SEFEL ● SEFD 5012 \$15.98.

KODÁLY: *Concerto for Orchestra.* Hungarian State Concert Orchestra, Árpád Joó cond. **Galánta Dances; Minuetto Serio.** Budapest Philharmonic Orchestra, Árpád Joó cond. SEFEL ● SEFD 5013 \$15.98.

KODÁLY: *Marosszék Dances; Folk Dances of Kálló; Summer Evening.* Hungarian Radio Choir (in Folk Dances); Budapest Philharmonic Orchestra, Árpád Joó cond. SEFEL ● SEFD 5014 \$15.98.

KODÁLY: *Háry János, Suite; Theater Overture; Ballet Music.* Budapest Philharmonic Orchestra, Árpád Joó cond. SEFEL ● SEFD 5015 \$15.98.

live, and that surely has something to do with the fine sense of flow.

The opening movement is very attractively paced, the orchestra is fully in the picture, and the cadenza is an intriguing one: the last of Reger's six Preludes for Solo Violin, Op. 117. It may be a bit long, but it seems to suit the work handsomely. The adagio has an altogether agreeable lightness in this unlabored, straightforward presentation, though the finale, I felt, would have benefited from a bit more breathing space to allow Brahms's charming rhythmic subtleties to make their point. There is just a hint of breathlessness here that is at odds with the music's inherent geniality.

Overall, this is an enjoyable, inspiring performance, with much beautiful playing from both soloist and orchestra. Very fine sound too, especially enhanced on the Compact Disc. R.F.

RECORDING OF SPECIAL MERIT

CHABRIER: *Joyeuse Marche; Le Roi malgré lui, Danse slave; Suite pastorale; Gwendoline Overture; Bourrée fantasque; España.* Orchestre National de France, Armin Jordan cond. ERATO/RCA ● NUM 75079 \$10.98, © MCE 75079 \$10.98; © ECD 88018, no list price.

Performance: **Affectionate**
Recording: **Splendid**

What a welcome surprise! All the great Chabrier collections—those conducted by Dervaux, Paray, Ansermet, and Mari—seem to have disappeared, leaving a real need for just what Armin Jordan has given us: affectionate, enlivening performances with a better orchestra and more lifelike sound than any of his predecessors in this delicious repertoire could boast. If Jordan does not efface memories of Sir Thomas Beecham in the ubiquitous but marvelous *España* (and who can, after all?), he surpasses Beecham in the *Gwendoline Overture*. And I don't think there has been another performance of the *Suite pastorale* quite so alluring since the earliest one on LP, conducted by Warwick Braithwaite.

I only wish there had been room on the new disc for the *Fête polonaise* from *Le Roi malgré lui*, but perhaps Erato will press on with Jordan to give us that piece along with the *Habanera* and the lovely choral *Ode à la musique* to fill out one more side of Chabrier. In any case, this album is a thoroughgoing joy. Don't think of doing without it. R.F.

RECORDING OF SPECIAL MERIT

G. GABRIELI: *Eleven Canzonas.* A. GABRIELI: *Two Canzonas.* Philip Jones Brass Ensemble, Philip Jones cond. LONDON LDR 71081 \$11.98, © LDR5 71081 \$11.98.

Performance: **Handsome**
Recording: **Terrific**

"Handsome" is the only word to describe these wonderful performances of splendid music by Giovanni Gabrieli and his uncle Andrea. Philip Jones paces the music spaciouly, the players respond with a gorgeous sonority, and the engineers have

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caught it all to perfection. This is certainly one of the finest albums the Philip Jones Brass Ensemble has released. *S.L.*

HANDEL: Mr. George F. Handel's Top Tunes, Vol. I. Sound an Alarm; Waft Her, Angels, to the Skies; Where E'er You Walk; O, Had I Jubal's Lyre; Care Selve; So Shall the Lute and Harp Awake; Or Let the Merry Bells Ring Round; Dank sei Dir, Herr; Ombra mai fu; Piangero, piangero; Vouchsafe, O Lord; Let the Bright Seraphim. Philharmonia Virtuosi of New York, Richard Kapp cond. CBS RM 38910, © RMT 38910, no list price.

Performance: **Slick**
Recording: **Good**

The front jacket calls these selections "Suitable for Weddings, Celebrations, & Sundry Social Entertainments/A Veritable Compendium of Stirring & Soothing Songs Ideal as Accompaniments for Singers in the Home." And so it is: Handel tastefully reduced to Muzak. The next time your best friend's daughter wants to get married to something Baroque, this album will solve all your problems. *S.L.*

RECORDING OF SPECIAL MERIT

HAYDN: Cello Concerto in C Major (Hob. VIIb:1); Cello Concerto in D Major (Hob. VIIb:2). Christophe Coin (cello); Academy of Ancient Music, Christopher Hogwood cond. OISEAU-LYRE DSL 711 \$11.98, © KSDSC 711 \$11.98.

Performance: **Captivating**
Recording: **Fine**

The elegant themes and graceful figurations in Haydn's cello concertos have frequently struck me as sounding rather too gruff and labored on the modern cello. As played by Christophe Coin on a copy of an eighteenth-century instrument, however, the sound and style are beautifully appropriate. But not all of the credit should go to the instrument: most of it, in fact, should be accorded to Coin for his superb musicianship and sound technique. Under the direction of Christopher Hogwood, the Academy of Ancient Music, also playing early instruments, contributes strong ritornellos and firm accompaniments. This album sheds new light on these two popular concertos. It should be required listening for cellists, professionals and amateurs alike. *S.L.*

LISZT: Concert Paraphrase of Verdi's Rigoletto (see SCHUMANN)

MAHLER: Symphony No. 3, in D Minor. Helga Dernesch (contralto); Women of the Chicago Symphony Orchestra Chorus; Glen Ellen Children's Chorus; Chicago Symphony Orchestra, Sir Georg Solti cond. LONDON ◊ LDR 72014 two discs \$23.96, © LDR5 72014 two cassettes \$23.96.

Performance: **Curiously earthbound**
Recording: **Close**

My first encounter with Mahler's amazing six-movement Third Symphony was by way of the F. Charles Adler SPA album done in Vienna in 1952—a fine interpretive achievement and an amazing

sonic accomplishment for its day. Then came a memorable live performance in 1960 by Leonard Bernstein and the New York Philharmonic in memory of the then recently deceased Dimitri Mitropoulos, followed in 1962 by a Columbia recording.

What was distinctive about both the Adler and Bernstein performances was the uninhibited exuberance, like nature gone mad, of the half-hour first movement and the exalted transcendence of the sweeping tonal vistas of the slow finale. In between come the four shorter movements: the lyrical menuetto with its agitated central section, the *Wunderhorn*-inspired third movement, its middle section dominated by the dreamy posthorn solo, the solemnly mystical treatment of Nietzsche's *Midnight Song* from *Thus Spake Zarathustra*, and the angelic episode (again *Wunderhorn*-inspired) for children and women's choir. Of the recorded performances with which I am familiar, the Adler, the Bernstein, and the 1970 Jascha Horenstein ones best convey for me the fury, the magic, the poetry of the piece. Without these qualities, any performance of it can drag.

To my great regret, this digitally mastered Mahler Third conducted by Sir Georg Solti (his third recording of it) lacks the requisite magic despite impressively virtuosic execution by the Chicago Symphony (as in the extended solo-trombone work in the first movement and the previously noted posthorn solo). To Solti's credit, the fine interweaving of polyphonic textures throughout, and most notably in the finale, is masterfully conveyed. But I find a lack of exultation in both the opening movement and the last. And I would have liked more vocal weight and a darker tone in the contralto solo to add a more convincing sense of solemn mystery to the Nietzsche movement. The choruses do nicely with the fifth movement, but even more buoyancy would have been welcome.

To some extent, I think, the recording itself is partly to blame for my overall disappointment. A piece this big needs wide open spaces, and what I hear in this case is rather too closely focused, almost clinical. Also, though the notes by Derycke Cooke (reprinted from Solti's 1969 London Symphony recording, also not a wholly satisfying one) are most welcome and illuminating, London might at least have provided fresh information on the recording, at least to the extent of indicating whether it was produced in Chicago's Medinah Temple or in that city's newly refurbished Orchestra Hall. (It turns out to be the latter.) *D.H.*

MOZART: Piano Concerto No. 22, in E-flat Major (K. 482); Symphony No. 24, in B-flat Major (K. 182). Sviatoslav Richter (piano, in concerto); Philharmonia Orchestra, Riccardo Muti cond. ANGEL ◊ DS-37740 \$12.98, © 4XS-37740 \$9.98.

Performance: **Richter miscast**
Recording: **Good**

Wonderful artist that Sviatoslav Richter is, Mozart's music does not seem to elicit the same magical touch and musical

STEREO REVIEW

imagination that distinguishes the best of his performances. Except for the *outré* yet fascinating cadenzas (composed for Richter by Benjamin Britten), this reading of the richest of the Mozart piano concertos, No. 22, seems to me blunt, unsubtle, and unadorned. Better to turn to the recordings by Murray Perahia, Vladimir Ashkenazy, or Emanuel Ax, of which Perahia's takes fullest account of the corrections embodied in the latest critical edition. As filler, for no logical reason that I can discern, we are offered a not very interesting reading of a not very interesting symphony from the Salzburg period. Surely one or both of the concert rondos for piano and orchestra would have made more sense! Not recommended, even for Richter fans. *D.H.*

MOZART: Rondo in A Minor (see BEE-THOVEN)

RECORDINGS OF SPECIAL MERIT

PROKOFIEV: Cinderella, Op. 87. London Symphony Orchestra, André Previn cond. ANGEL ◉ DSB-3944 two discs \$25.96, ◉ 4X2S-3944 two cassettes \$19.98.

PROKOFIEV: Cinderella, Op. 87. Cleveland Orchestra, Vladimir Ashkenazy cond. LONDON ◉ 410 162-1 two discs \$23.96, ◉ 410 162-4 two cassettes, \$23.96.

Performances: Previn has the edge
Recordings: Ditto

Prokofiev's delectable *Cinderella* ballet (1941-1944) has been represented previously on American labels only by the 1967 Rozhdestvensky/Moscow Radio Symphony recording, first issued on Melodiya/Angel and later on Musical Heritage Society. It is a beautifully styled and sharply pointed reading, but it lacks the state-of-the-art sound that this elegantly scored work really needs. Now we have two complete, digitally recorded versions in masterly performances with somewhat different emphases.

Vladimir Ashkenazy, leading the Cleveland Orchestra in the bright and resonant Masonic Auditorium, responds primarily, I think, to the score's kaleidoscopic orchestral coloration and its more intimate, poetic, and atmospheric moments. He draws a string tone from the orchestra that recalls the richness of the "Philadelphia Sound" in that ensemble's palmiest days.

André Previn, for his part, seems to react more to the romantic and dramatic aspects. Although his pacing of the more broadly lyrical episodes is perceptibly slower than Rozhdestvensky's, he is almost the latter's equal in making the most of the music's dramatic, even cinematic, potential—as in the quarreling of the stepsisters and their pratfalls at the court ball, the hustle-bustle of the various departures for the ball, and, above all, the collapse of Cinderella's fantasy world at midnight. Previn is, in fact, decidedly ahead of both Ashkenazy and Rozhdestvensky in imparting a sense of genuine terror to this episode, and he does as well as Ashkenazy in realizing the poetic-lyri-

cal episodes too, such as Cinderella's wistful early music and the quietly ecstatic love music for her and the prince at the close. Prokofiev's waltz music, which ranks with the best of Tchaikovsky's, has a grand sweep and momentum in Previn's reading, achieving a splendidly satisfying climax in the midnight scene.

It is not that Ashkenazy's performance with the virtuoso Cleveland players is anything less than excellent. It's just that Previn seems to have an edge in nearly all departments, and if Ashkenazy has the richer string body, the London Symphony has magnificent wind players, especially the first-chair clarinet. The deciding factor, I find, is the recorded sound.

Both London and Angel provide sound that is rich and enormously wide-range, but the London producers seem to have had some problems in controlling the reverberance of their recording locale, as in the soft bass-drum strokes in the Summer Fairy's Dance toward the end of Act I. The Angel recording, presumably made in London's Kingsway Hall, is superbly contained throughout yet always satisfyingly full and spacious. *D.H.*

PROKOFIEV: Romeo and Juliet, Op. 64; Symphony No. 1, Op. 25 (see Best of the Month, page 77)

(Continued on the next page)

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RACHMANINOFF: *Symphony No. 1, in D Minor, Op. 13.* Concertgebouw Orchestra, Vladimir Ashkenazy cond. LONDON ● LDR 71103 \$11.98, © LDR5 71103 \$11.98.

Performance: **A bit wild**

Recording: **Too reverberant at times**

After Vladimir Ashkenazy's remarkably vital and impassioned account of the Rachmaninoff Third Symphony with the Concertgebouw Orchestra, I had high hopes for his reading of the ill-fated First Symphony, which in 1945 was reconstructed in the USSR from surviving orchestral parts, the composer having destroyed the score following the fiasco of its 1897 première under Glazunov. In its own odd way, this remains for me one of the most powerful Rachmaninoff scores, with its recurring "whiplash" motive in all four movements, its evocation of Orthodox liturgical chant, and the haunting presence of the *Dies irae* motive in a host

trumpet fanfares. As in the first movement, there is a sharply stressed contrast in tempo between the lyrical and dramatic elements, and the coda verges on the hysterical. Given the choice, I'd still go with Slatkin, Ormandy, or Previn. *D.H.*

RAMEAU: *Gavotte; Six Doubles* (see BEETHOVEN)

RAVEL: *Ma Mère l'oye; Valses nobles et sentimentales; La Valse.* Dallas Symphony Orchestra, Eduardo Mata cond. RCA ● ARCI-4815 \$12.98, © ARK1-4815 \$12.98.

Performance: **Good to excellent**

Recording: **Good**

There are many other recordings of each of these scores, including the expanded ballet version of *Mother Goose*, but Eduardo Mata's is the only single disc in the Schwann catalog offering this particular combination. Certainly it is highly

appealing collection. While I don't think *Parade* comes off too well in this form, that is not the performers' fault, and everything else here is a droll delight. These young Dutch pianists, still in their twenties when the recording was made, obviously enjoy this material and take it seriously enough to bring out its musical substance. Their playing is nicely balanced, if with a slight tendency toward dryness, and the recording is generally fine. The package is further enhanced by a concisely informative note on the music by the producer, Klaas Posthuma. *R.F.*

SCHUBERT: *Sonata in A Minor for Arpeggione and Piano* (see WEBER)

RECORDINGS OF SPECIAL MERIT

SCHUBERT: *Winterreise, Op. 89 (D. 911).* Ernst Haefliger (tenor); Jörg Ewald Dähler (piano). CLAVES ● D 8008/9 two discs \$25.96 (from Qualiton Records, 39-28 Crescent Street, Long Island City, N.Y. 11101).

SCHUBERT: *Die schöne Müllerin, Op. 25 (D. 795).* Ernst Haefliger (tenor); Jörg Ewald Dähler (piano). CLAVES ● D 8301 \$12.98.

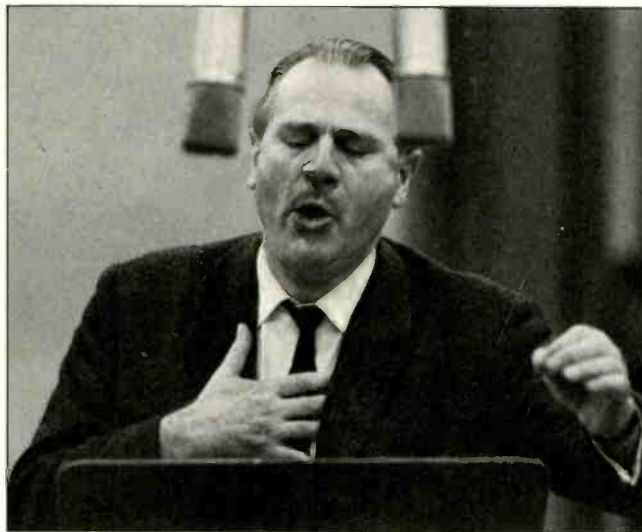
Performances: **Powerful**

Recordings: **Lifelike**

The Swiss tenor Ernst Haefliger, now in his sixty-fifth year, has been singing with Gedda-like dependability for some four decades, and like Gedda he has been known to us for the most part in large-scale concert works and opera rather than recital material. The song category has figured so little in his discography that the idea of his recording Schubert's great cycles *Winterreise* and *Die schöne Müllerin* might seem almost out of character, but such an assumption would be off the mark: his performances with pianist Jörg Ewald Dähler, on the Claves label from Switzerland, are easily among the most appealing presentations of this music we are likely to hear. Haefliger is so thoroughly *in* character that, in the best sense, the listener may simply forget about him as interpreter and savor the music itself.

What is remarkable here is not how well the voice has been preserved, but how sensitively Haefliger uses it in responding to these songs, how thoroughly attuned he is to them. Dähler, his accompanist, is much younger, young enough to be numbered among the enthusiasts for period instruments. He owns several early pianos, according to the background material supplied with the records, and in these recordings he plays a Viennese instrument of Schubert's time. Its character goes especially well with Haefliger's voice and style, in which clarity of articulation is made to count for more than a broad range of color. Pacing tends to be on the whole a bit more brisk than what we might regard as the norm, but the tempo taken for each song seems unarguably right.

Haefliger is a straightforward, unhip-tronic singer; the emphasis is on musical values and textual sense, and the emotion takes care of itself without any huffing



Columbia Records

Ernst Haefliger:
appealing Schubert
songs

of variants. There have been a number of distinguished recorded performances, including those conducted by Eugene Ormandy (who gave the first American performance), André Previn, and Leonard Slatkin. The idea of a digitally mastered version with Ashkenazy and the Concertgebouw whetted my appetite, but I must confess disappointment with it.

In the first movement Ashkenazy opts for an extremely urgent pace and the sharpest possible contrast between lyrical and dramatic elements. Rachmaninoff's *non troppo* appended to the *Allegro* marking of the main body of the movement is to all intents and purposes ignored, and the music loses impact as a result. The *animato* of the *Allegro animato* second movement is strongly emphasized, and the music moves along swiftly, taking only seven minutes and forty-two seconds instead of the usual nine minutes. The deeply somber slow movement comes off best here, with spookily menacing horns in the central section and a magical interweaving of linear textures at the close.

By the opening of the finale, Ashkenazy has settled down to a normal tempo, but its martial defiance is vitiated by uncontrolled hall reverberation that blurs the

apropos to have the *Valses nobles et sentimentales* together with *La Valse* since there are fascinating points of comparison between the two. Mata and the Dallas Symphony stand up well to the competition in *Mother Goose* and the *Valse nobles et sentimentales*, but some may share my mixed feelings about Mata's "free tempo" treatment of *La Valse*, most noticeably in his sudden slow-up just before the final reprise. What should be inexorable movement toward the climactic outburst is accordingly weakened. RCA's digitally mastered sound is fully up to the best of what has been achieved heretofore in the Dallas church locale. *D.H.*

RECORDING OF SPECIAL MERIT

SATIE: *Trois Morceaux en forme de poire; Aperçus désagréables; En habit de cheval; Parade; Trois petites pièces montées; La Belle excentrique.* Wyneke Jordans, Leo van Doeselaar (piano, four hands). ETCETERA ● ETC 1015 \$10.98, © XTC 1015 \$10.98.

Performance: **Winsome**

Recording: **Generally fine**

All of Satie's four-hand piano music is, I think, contained on this disc, and it is an

and puffing. The crisp articulation of the words and the general avoidance of rubato and other indulgences contribute to a power and intensity we may feel more deeply because all the feeling seems to come from the depths of the music itself rather than some gratuitous interpretive overlay.

Claves's digital recording is marvelously lifelike, though in *Die schöne Müllerin* it suggests a fairly cavernous room. The focus is so close in the first few songs that sibilants are unflatteringly magnified. The only serious complaint I have is about the printed texts. Although background and biographical material is given in three languages, the song texts themselves, which are of course immeasurably more important, are given only in German. Even without translations, though, these recordings are just the sort of thing to convert people who thought that they weren't interested in lieder. R.F.

SCHUMANN: *Davidsbündlertänze, Op. 39, No. 12.* LISZT: *Concert Paraphrase of Verdi's Rigoletto.* Robert Taub (piano). HARMONIA MUNDI HM 5133 \$11.98.

Performance: **Very musical**
Recording: **Excellent**

Robert Taub, a young American pianist who has had the benefit of study with both Gary Graffman and Jacob Lateiner and who has himself taught at Juilliard,

made this recording under a sponsorship award from the Pro Musicis Foundation. (The foundation has the interesting practice of promoting the careers of young musicians with the proviso that its beneficiaries perform two recitals for the institutionalized or handicapped of their respective cities for each professional recital sponsored by the foundation.)

On the evidence submitted here, Taub's technical competency would appear to be on the level at which he is free to devote all his energies to questions of interpretation. These are thoughtful, extremely musical performances, beautifully articulated. The very opening gesture in the *Davidsbündlertänze* suggests an uncommon regard for tone, and this impression is sustained throughout the assured, communicative performance. The *Rigoletto* Paraphrase is an enjoyable presentation in its own right, and the piano is exceptionally well recorded. R.F.

RECORDING OF SPECIAL MERIT

SHOSTAKOVICH: *Symphony No. 8, in C Minor, Op. 65.* Concertgebouw Orchestra, Bernard Haitink cond. LONDON LDR 71121 \$11.98, © LDR5 71121 \$11.98; © 411 616-2, no list price.

Performance: **Superb**
Recording: **A blockbuster!**

Inspired by the agonies of World War II, the Shostakovich Eighth Symphony is a unique and sometimes terrifying work.

Bernard Haitink's is its fourth recorded performance and in many respects the finest. This is not to say, however, that the previous recordings by Yevgeny Mravinsky (Artia/MK), to whom the score was dedicated and who conducted the world première, Kiril Kondrashin (Melodiya/Angel), and André Previn (Angel) are at all unworthy. All three convey Shostakovich's musical message with shattering impact, erecting an imposing tonal architecture in the course of its more than sixty-minute length. But Haitink, as in the best of his previous Shostakovich recordings, here offers comparable eloquence and fresh insights, and he is aided by the superb playing of his orchestra and topflight digital recording.

The Concertgebouw's acoustics are ideally suited to the epochal lamentation and rage of the nearly thirty-minute opening movement, and Haitink's interpretation lacks nothing in emotional force or structural integrity. The second movement has in the past seemed to be something of a makeweight, with more sound than substance, but Haitink's deliberate tempo brings out its implied depiction of militaristic brutality. It suggests Orwell's image of "a boot stamping on a human face—forever."

The three final movements, played without pause, profit immensely from the clarity and background quiet of the digital mastering. The allegro is stinging and climaxes in unbridled fury. The sense of utter devastation in the mournful largo is

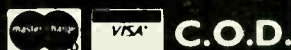
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superbly conveyed while its subtle instrumental colors and decorative details are brightly illuminated. The same is true of the finale, which has always been a bit of a puzzle to me because of its ambiguous expressive content (the consolatory three-note figure at the opening derives from the brutal second movement) and its episodic rondo structure with its shifting tempos. Haitink succeeds admirably in holding the movement together. The opening suggests the condition of Holocaust survivors, and the massive recitative just before the timidly hopeful coda carries the unmistakable message, "Never again!" This performance should instill that conviction in anyone with ears to hear and heart to feel. *D.H.*

SOLER: *Sonatas Nos. 1 and 4* (see BEE-THOVEN)

RECORDING OF SPECIAL MERIT

SORABJI: *Opus Clavicembalisticum*. Geoffrey Douglas Madge (piano). ROYAL CONSERVATORY SERIES R.C.S. 4-800 four discs \$43.92 (from International Book & Record Distributors, 40-11 24th Street, Long Island City, N.Y. 11101).

Performance: **Astounding!**
Recording: **Good live job**

This recording from the 1982 Holland Festival preserves what was only the second public performance in more than fifty years of Kaikhosru Sorabji's much-written-about though little-heard *Opus Clavicembalisticum* (the first performance was by Sorabji himself in Glasgow in 1930). Its three hours and fifty minutes of music, intended to be performed with intermissions, is divided into three parts of increasing length and complexity. The style strikes the listener at first as post-Ravel with admixtures of Scriabin, Szymanowski, Alkan, Liszt, and Busoni to which is added, at times, strong doses of polytonality and rhythmic elements that all but anticipate the procedures of Elliott Carter. Shot through it all is the widest possible range of pianistic coloration.

What holds the interest throughout the immense length of the work is its kaleidoscopic variety, but I also got the feeling—which I suspect it would take months of study to confirm—that somehow it all holds together as an architectonic whole. The individual segments, of varying lengths, exhibit awesome contrasts. There are parts where the musical motion seems to come to a complete standstill, yet they hold one spellbound nonetheless; and then there are virtuosic explosions with textures so dense it would seem impossible for even a Horowitz to keep everything under control.

Any listener has to be dumbfounded at what Geoffrey Douglas Madge has accomplished here. He has summed up the challenge himself in these words: "To play Sorabji you need not only fingers that can think and feel and do anything, but also maybe ten arms, one for each finger. The only thing that then remains is for the performer to do the trick of actually disappearing in front of the keyboard while those divine sounds appear to come from nowhere out of the instrument."

The composer of "those divine sounds" was born in 1892 in England and was essentially self-taught in composition. By all accounts a pianist of formidable powers, his private circumstances became such that he had no need to depend on the professional musical establishment for either a living or reputation. His impressive catalog of works includes major orchestral and choral compositions as well as piano music. But the piano works—which in a sense pick up where Liszt, Alkan, and Busoni left off and provide a bridge of sorts to Messiaen—lie at the heart of Sorabji's output. They are



Karlheinz Stockhausen

"transcendental" both in aesthetic outlook and in performing difficulty.

Disgusted with inadequate early attempts to master his works for public performance, Sorabji withheld them for many years until he was satisfied that there were musicians both willing and able to meet his challenges. Michael Habermann in the U.S., Yonty Solomon in England, and Madge, Australian-born, now living in Holland, are among Sorabji's few authorized executants.

Who should acquire this recording of the *Opus Clavicembalisticum*? Without reservation, I can recommend it to keyboard-music enthusiasts of any persuasion who are not put off by works on a grand scale (salon music this is not!). The *O.C.* explores virtually every effect that can be gotten out of a modern concert grand without "preparing" it (*à la* Cage) or going beyond the keyboard in the sense of either Cowell-style tone clusters or plucking the strings. (The program notes with the recording, by the way, give fulsome praise to the Yamaha instrument used, but I found that the sound favored the middle register unduly, perhaps as a result of the recording conditions.)

I cannot give a more considered judgment of the music itself without many more hearings. Indeed, it will take a real performance history over a period of years before it can be decided whether Sorabji's *Opus Clavicembalisticum* is a real artistic masterpiece or a brave effort that belongs only in the *Guinness Book of World Records*. *D.H.*

STOCKHAUSEN: *Donnerstag aus Licht*. Annette Meriweather (soprano); Robert Gambill, Michael Angel, Paul Sperry (tenors); Markus Stockhausen (trumpet); Hugo Read, Simon Stockhausen (soprano saxophones); Majella Stockhausen (piano); others. West German Radio Chorus; Hilversum Radio Chorus and Orchestra; Ensemble Intercontemporain; wind and percussion ensemble, Karlheinz Stockhausen cond. DEUTSCHE GRAMMOPHON 2740 272 four discs \$47.92.

Performance: **Authoritative**
Recording: **Good**

Ever wonder what happened to Karlheinz Stockhausen? The answer is *Licht*. For the past five or six years the German composer has been working on a music drama that is to be his *Ring of the Nibelungs*, and then some. *Licht* is planned as a cycle of seven operas. The *Ring* is only supposed to take four days; *Licht* will have an opera for every day of the week. And here is *Thursday*, complete.

In three hours of playing time, *Donnerstag aus Licht* has "music, libretto, dance, actions, and gestures composed by Karlheinz Stockhausen." Even the colors of the costumes and scenery are specified by the composer, who calls this work "an opera in three acts, a greeting, and a farewell for fifteen musical interpreters."

The characters are named Michael, Eve, and Lucifer, but actually they assume various roles. Eve, for example, is Michael's mother but also his vision of love. Each character or set of characters is represented by a singer (Michael by three), an instrumentalist (Michael by a trumpet player), and a dancer. Each has a representative "formula" or musical pattern. And so on. It is clear that Stockhausen identifies closely with his leading character, Michael. The first act of the opera is about Michael's childhood and education, the second represents his trip around the world (in the form of a trumpet concerto!), and the third depicts his mystical homecoming.

The première of this work took place at La Scala in 1981, but, as Stockhausen states in his notes, "All recordings of *Donnerstag aus Licht* . . . are from *studio productions* in which the chorus and orchestra of La Scala did NOT participate." The second act was recorded in Paris, the third in Holland and Cologne, the rest in Cologne and Hamburg.

What to make of all this? The first thing to note is that the composer has simplified and even sweetened his difficult junk style of a few years ago. Stockhausen's immense musical ego has a way of trying to cook up and transmute absolutely everything in the world, making it his own, like it or not. The same process takes place here but with a mystical fire added to the alchemy. "Everything" (meaning everything except a sense of humor) is now simpler, more direct; we get one thing at a time, spread out over longer and longer periods of time.

How does it come off on records? The best of it is certainly the "trumpet concerto" of the second act, along with the instrumental music on the second side. *Festival*, the first part of the third act, of-

fers our maximum modernist leader's maximal scoring; it is rich and full and even dramatic with its big washes and swatches of sound. All this is sometimes quite beautiful, often doggedly overwhelming, but much of the rest consists of simple, repetitive vocal and instrumental lines in vaguely formed, almost tonal patterns that seem to be struggling toward a shape that is never quite achieved.

In recent years Stockhausen has been creating "events" rather than composing music, and *Donnerstag*, perhaps the whole gargantuan *Licht* cycle, is really a culmination of this presentational concept. It is the ultimate, total, ritualistic event, not just a piece of music. It is not a question of the pure extension or repetition of an attractive simplicity—the kind of thing you find in Philip Glass or Steve Reich—but of disorder, of *Angst*. The chaos of the real world is accepted and compulsively, ritualistically, turned into Stockhausenian order. You had better be prepared to accept that vision. Or stay away.

The recordings, deriving from different venues, differ somewhat in sonic perspectives too, but the participants, among whom are several members of the composer's family (not to mention friends and lovers), are impressive. Only a few excerpts from the elaborate, multilingual text are given, but the contents of the discs themselves convey what's going on in this massive work well enough. *E.S.*

R. STRAUSS: *Don Juan; Till Eulenspiegel's Merry Pranks; Death and Transfiguration.* London Symphony Orchestra, Claudio Abbado cond. DEUTSCHE GRAMMOPHON ● 2532 099 \$11.98, © 3302 099 \$11.98; © 410 518-2, no list price.

Performance: **Brilliant**
Recording: **Good**

Verve and elegance of detail mark Claudio Abbado's readings of *Don Juan* and *Till Eulenspiegel* in this apparently most popular of Strauss tone-poem packaging. The opening of *Don Juan* is taken at a tremendous clip—up to the limit of the players' ability for clear articulation. In general the reading is flamboyant and virtuosic down to the last detail. I confess my preference for the more carefully characterized treatment by Bernard Haitink in his recent Concertgebouw recording for Philips. The same holds in essence for *Till Eulenspiegel*, though the margin here is narrower, particularly in view of some of the fine-spun detail that Abbado elicits from the London Symphony.

In *Death and Transfiguration* Abbado opts for an ultra-subdued opening and builds to the initial onslaught of *Death* with very careful detailing and intertwining of inner voices. Unquestionably the most impressive moment in this reading is the buildup to the first climax of the *Transfiguration* motive. The climax of the final *Transfiguration* episode is diluted somewhat by a slight lack of urgency in what precedes it.

Deutsche Grammophon has provided good sound throughout, especially in the well-focused violin section, but it does not quite match the overall clarity and extraordinary low-end presence of Haitink's Philips recording. *D.H.*

STRAVINSKY: *Concerto for Two Solo Pianos; Three Movements from "Petrouchka."* Katia and Marielle Labèque (pianos). PHILIPS ● 410 301-1 \$11.98, © 410 301-4 \$11.98.

Performance: **Sympathetic**
Recording: **Good**

I always think of Stravinsky's *Concerto for Two Solo Pianos*, a work that used to be played rather often, as a rather stern and angular neo-Classical work. It doesn't seem that way at all in this performance. Perhaps time has mellowed the listener and the work, but the performance is also sympathetic. The concerto is close, in time and in spirit, to that great neo-Classical masterpiece, the *Symphony of Psalms*. In these works, the evocation of the past is less important than the re-creation of a lively present. What passes for "objectivity" actually holds in check a great deal of powerful, barely suppressed feeling. This is strong music, and it is brilliantly played and recorded here.

If the ballet *Petrouchka* is a fantastic and colorful canvas, the Three Movements thereof are to the original as a
(Continued on page 114)

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Anne-Marie Rodde (left) and Jennifer Smith in Rameau's *Les Boréades* at Aix-en-Provence.

Rameau: The Human and the Heroic

JEAN-PHILIPPE RAMEAU'S last opera, *Les Boréades*, was in rehearsal in the late summer of 1764 when the composer died at the age of eighty. The Paris Opéra had commissioned the work, but, with a fall season to get under way, it halted the rehearsals and canceled the scheduled performances. The unpublished score went to the Bibliothèque Nationale, where it remained, untouched (and mostly unmissed), for more than two hundred years.

The first fully staged production of *Les Boréades* took place in the summer of 1982 at France's showcase music festival in Aix-en-Provence, and more than anyone else it was John Eliot Gardiner, the conductor, who got that production off the ground. Gardiner also saw that the opera was preserved in a recording, which has now been released on Erato and made available here by RCA. It may perhaps mark a turning point in the fortunes of Rameau in our opera houses and concert halls; it is that important—and that good.

Les Boréades derives its title from the legend of the Hyperboreans, those who live "beyond the North Wind." Boréas, god of the North Wind, has a firm grip on the political future of a Borean realm by virtue of the traditional requirement that its queen may only marry one of his descendants. But Queen Alphise wants to

marry an outsider, Abaris, and she is willing to abdicate if necessary to do it. In the end it is revealed by no less a god than Apollo that the young man in question is his son by a Boread nymph, so all is well. After five acts and three hours of some of Rameau's most stunning and intensely dramatic music, the opera ends—happily, as an energetic final *contredanse* makes clear.

Les Boréades is not so much a product of an old man's declining years as the result of some thoughtful re-evaluation of Rameau's part. Though billed as a *tragédie lyrique*, one of a long line, it has little of the tragic grandeur of the composer's earliest operas; musically and dramatically it seems to look ahead. The emotions that surge through the piece are more human than heroic. The words and music delivered by the love-struck Abaris, seeking the queen's hand, render him more three-dimensional than the conventions of Rameau's time normally permitted. The opera is, in fact, subtitled *Abaris*, and it is he who carries most of its emotional burden. It is an exceedingly well-drawn role, and a moving one.

It is also exceedingly well sung by Philip Langridge, whose ardent, clarion tenor is a splendid match for Jennifer Smith's radiant soprano as Alphise, the queen. The supporting roles too, notably Jean-Philippe Lafont's commanding Boréas,

are in obviously capable hands. But the real hero of the occasion is Gardiner, whose association with this music goes back to the mid-Seventies when he conducted the first complete concert performance in London. Gardiner has brought us some really first-class recordings of early music over the past few years, but this one is unquestionably the most adventurous and revealing of the lot as well as among the most impressive and stylish in performance. Gardiner's home forces, the Monteverdi Choir and the English Baroque Soloists, both contribute nobly. The storm music and other effects that Rameau had such a flair for depicting musically pack a terrific dramatic wallop, and the myriad dances alternately glisten with instrumental color and explode with rhythmic vitality.

Altogether, a superb job by all hands, rendered all the more so by an equally superb recording. (Note that for unexplained copyright reasons a libretto is not enclosed. You'll have to write to Editions Stil, 5 rue de Charonne, 75011 Paris, for that.)

—Christie Barter

RAMEAU: *Les Boréades*. Philip Langridge (tenor), Abaris; Jennifer Smith (soprano), Alphise; Jean-Philippe Lafont (baritone), Boréas; Jon Aler (tenor), Calisis; Gilles Cachemaille (bass), Boriléas; Anne-Marie Rodde (soprano), Semira;

others. Monteverdi Choir; English Baroque Soloists, John Eliot Gardiner cond. ERATO/RCA STU 715343 three discs \$32.94, © MCE 715343 three cassettes \$32.94.

THE libretto of Rameau's 1748 opera *Zaïs* (which the composer called a *ballet héroïque*) concerns a powerful Genius of the Air (*Zaïs*) who, disguised as a shepherd, courts and wins the love of the shepherdess *Zélide*. But, wishing to put *Zélide*'s love for him to the test, *Zaïs* orders his confidant, *Cindor*, also to court her, which *Cindor* does through a long series of magical and fantastic events. *Zélide*, however, displays such unwavering fidelity that *Zaïs* finally reveals to her his true identity, a revelation that throws her into despair as she realizes the impossible difference in their stations in life. *Zaïs* then renounces his power and immortality in order to be united with his beloved, but the gods intervene, restoring *Zaïs* to his original status and elevating *Zélide* to immortality as well.

Such a combination of pastoral legend and fairy tale was Rameau's food and drink: the book not only offered him plenty of opportunities for ballet music but also drew upon his genius for depicting the glories of nature—a sunrise, rivers, winds, storms, tossed clouds, and so on—in a series of stunning instrumental interludes interlaced with a good number of choruses. All in all, this is one of Rameau's most luminous scores, lavish in its effects and striking in its contrasts.

The singers on a new imported French recording of *Zaïs* are all masters of French Baroque style. John Elwes, as *Zaïs*, proves to be one of the foremost Rameau tenors singing today. Marjanne Kweksilber, as *Zélide*, is eloquent in her constant devotion, and Mieke van der Sluis's bright soprano is a delight in a supporting role.

Highest honors, though, go to La Petite Bande under Gustav Leonhardt. Their exquisite performance on early instruments reveals Rameau's command of orchestral color with a clarity and delicacy that modern instruments couldn't even approach. As a bonus there's a reproduction of the original 1748 libretto, which is a joy to follow. Since the album was designed primarily for French consumption, however, it lacks an English translation. Nonetheless, this recording is one of the most treasurable mementos of the Rameau year just past and is not to be missed.

—Stoddard Lincoln

RAMEAU: *Zaïs*. John Elwes (tenor), *Zaïs*; Marjanne Kweksilber (soprano), *Zélide*; Mieke van der Sluis (soprano), a Sylphide; Jane Marsh (soprano) and René Jacobs (countertenor), Sylphes; others. Collegium Vocale, Ghent; La Petite Bande, Gustav Leonhardt cond. STIL 1010 S 77 four discs \$47.92; excerpts, 1211 S 79 one disc \$11.98 (from Audio-Source, 1185 Chess Drive, Foster City, Calif. 94404).

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black-and-white engraving is to an oil painting. They are derived from (and are not a sketch for) the original. Stravinsky's well-known piano version, written for Arthur Rubinstein, is for a single piano. I am not sure who wrote this two-piano transcription, but it is effective enough. It is managed by the Labèque sisters with such ease that it almost seems casual and even careless in places. Only the last movement, finally, catches fire, but when it does, it is very hot. *E.S.*

WAGNER: *Tannhäuser, Overture; Rienzi, Overture; Die Meistersinger, Prelude; Lohengrin, Preludes to Acts I and III.* Berlin Philharmonic Orchestra, Klaus Tennstedt cond. ANGEL ● DS-37990 \$12.98, © 4XS-37990 \$9.98.

Performance: **Expansive**
Recording: **Rich**

In his famous essay on conducting, Wagner warned of the consequences of

ard Stoltzman (clarinet); Emanuel Ax (piano). RCA ● ARC1-4825 \$12.98, © ARK1-4825 \$12.98.

Performance: **Luscious**
Recording: **Vibrant**

Schubert's eminently likable sonata is usually played on the cello, the nearest surviving relation of the curious and short-lived arpeggione. It has been transcribed for various other instruments, though, and has been recorded on the flute, the double bass, and even on the arpeggione itself. Richard Stoltzman has recorded his clarinet version before too, with Peter Serkin for Orion, but this new recording, with Emanuel Ax as his partner and in vibrant digital sound, has by far the more appealing upside matter in the form of the brilliant Weber duo. However you might feel about hearing the Arpeggione Sonata on the clarinet (and Stoltzman does succeed in beating down whatever resistance one might

chi: O mio babbino caro. Massenet: Manon: Adieu, notre petite table. Charpentier: Louise: Depuis le jour. Smetana: The Bartered Bride: Marie's Aria from Act III. Dvořák: Rusalka: Song to the Moon. Lucia Popp (soprano); Munich Radio Orchestra, Kurt Eichhorn cond. ACANTA 40.23.326 \$10.98 (from German News Company, 220 East 86th Street, New York, N.Y. 10028).

Performance: **Good to outstanding**
Recording: **Very good**

For more than twenty years, Czech soprano Lucia Popp has been gathering laurels on the international scene with the Vienna State Opera as her home base. Her recording career has been substantial, extending over a range from Handel to Janáček, from Mozart to Massenet. This truly comprehensive recital offers yet another proof of Popp's versatility, which in her case is no mere recording stunt. She sings all these arias so convincingly, so much "in character," that we can believe every one of her interpretations.

Some years ago, Lucia Popp abandoned her coloratura roles to concentrate on the "lyric soprano" repertoire. (She went from the Queen of the Night in *Die Zauberflöte* to Pamina, for example.) Recently, she appeared as the excellent Susanna in the Solti-directed *Le nozze di Figaro* (London LDR 74001), which does not prevent her from delivering an outstanding account of the Countess's "Dove sono" on this record, deeply involved, touching, and nicely supported by Eichhorn's urgent conducting.

The Dvořák and Smetana arias, both beauties, emerge in the artist's native Czech in near-perfect renditions. The unfamiliar aria from Goetz's *The Taming of the Shrew* is well in the German tradition, the kind Brahms might have written had he pursued opera at that time (1874).

The Munich Orchestra performs with distinction, and the recorded sound is very fine. Adequate notes are provided, but there are no texts. *G.J.*

THE TANGO PROJECT II. G. de Leone: *El pillele. Lecuona: Siboney. J.R. Europe: Castle Invitation Tango. Romberg: Softly As in a Morning Sunrise. Cobian: Ladron. Laurence: Mal de amores. Yradier: La paloma. Weill: Matrosenlied. Arolas: Viborita. Sahl/Salzman: Noah. Porter: So In Love. Schimmel: Jane Avril. Anon.: E vui durmite ancora. Padilla: El relicario.* William Schimmel (accordion); Michael Sahl (piano); Stan Kurtis, Mary Rowell (violins); Russell Savakus (double bass). NONESUCH ● D-79057 \$11.98, © 79057-4 \$11.98.

Performance: **Flavorful**
Recording: **Just fine**

It was a year and a half ago that Nonesuch issued "The Tango Project," the first collection presented by the same team as this new one—whose eventual appearance was inevitable and whose arrival will surely make a lot of listeners happy. If the freshness of the initial installment is somewhat diluted now, there are nevertheless some fine pieces here. As before, the performances are flavorful, and the sound is just fine. *R.F.*



Richard Stoltzman: downright luscious playing

both "rushing" and "dragging," in conducting his own works in particular, and gave twelve minutes as his own timing for the *Tannhäuser* Overture, although a conductor in Munich had spun it out to an inconceivable twenty. Klaus Tennstedt's 15:28 falls about midway between those timings; actually, it's not much slower than today's norm, and the conductor invests his expansive reading with the weight to sustain his broad tempo without robbing it of momentum. His *Rienzi*, though, does strike me as a bit labored, as if he was determined to turn the piece into something grander than we've known it to be and succeeds only in vitiating its raucous good humor. A similar approach in the two *Lohengrin* preludes suggests longeurs rather than exaltation in the big one to Act I and rather heartlessly subdues the vibrant impetuosity of the one to Act III. The *Meistersinger* Prelude, curiously, is actually a little brisker than the norm, and it comes off beautifully. The sound itself is rich. *R.F.*

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WEBER: *Grand Duo Concertant, Op. 48.* **SCHUBERT: *Sonata in A Minor for Arpeggione and Piano (D. 821).*** Rich-

ard Stoltzman (clarinet); Emanuel Ax (piano). RCA ● ARC1-4825 \$12.98, © ARK1-4825 \$12.98.

have felt to the idea), there can be no question of the suitability of Weber's writing to the idiom of that instrument. Indeed, few composers have so glorified the clarinet as Weber did in his conspicuous use of it in his music, and the Grand Duo Concertant is one of his prime showpieces for it. It also gives Ax a good deal more to do—makes him more of a full partner—than the Schubert, in which the piano's role is really more in the nature of accompaniment. The playing is downright luscious on both sides, with appropriate vivacity in the Weber and superb balance at all points. *R.F.*

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The Basic Repertoire

By Richard Freed

FOR some years critic Richard Freed, a contributing editor of *STEREO REVIEW*, has listened to all available recordings of the nearly two hundred symphonic works that form the essential core of orchestral programs and classical record collections, selecting those versions he considered the best. We have published his choices in a pamphlet, which we have updated periodically, and we are now publishing his selections of the best current recordings of the Basic Repertoire in a series in the magazine. If you want the pamphlet, the most recent updating (1982) is available for \$1 (check or money order) and a stamped (40¢) self-addressed No. 10 envelope; send to Basic Repertoire, P.O. Box 506, Murray Hill Station, New York, N.Y. 10156. All recordings cited here are stereo LP's unless otherwise indicated by our usual symbols.

□ **RAVEL: Boléro.** Recent activity called for a general re-evaluation, which brought the dependable but generally overlooked Monteux (Philips 6570 092, © 7310 092) and the recently reissued Munch/Orchestre de Paris (Musical Heritage Society MHS 4706T, © MHC-6706W) to the fore, despite gratuitously inconvenient layouts affecting other material on both issues. Among newer recordings the hands-down winner is Charles Dutoit's with his fine Montreal orchestra (London ● LDR 71059, © LDR5 71059, © 410 010-2). Choice among the dozens of others are the latest by Karajan (Angel S-37438, © 4XS-37438; half-speed remastered on Mobile Fidelity MFSL 1-513) and Ormandy (RCA AGL1-5209, © AGK1-5209). For outstanding sound quality on a cassette, Skrowaczewski's has to be heard to be believed (InSync © C4104).

□ **RAVEL: Piano Concerto in G Major.** Both the Argerich/Abbado (DG 139 349) and the Michelangeli/Gracis (Angel S-35567) have become classics, and nothing else available now is in their class musically. On tape, either the Ciccolini/Martinon (Angel © 4XS-37151) or the one by Alicia de Larrocha with Lawrence Foster (London © CS5 6878) will serve, and both are brightly recorded.

□ **RAVEL: Daphnis and Chloé.** Dutoit's marvelous Montreal recording sounds better with each hearing (London ● LDR 71028, © LDR5 71028, © 400 055-2). The older recording by Monteux, who conducted the première in 1912, is still a marvel in its own right and a remarkable buy (London STS 15090). For the popular Suite No. 2, Leonard Slatkin's voluptuous realization is recommended among those with chorus (Telarc ● DG-10052), the Munch reissue among those without (Musical Heritage Society MHS 4706T, © MHC-6706W). On tape special honors

again go to Skrowaczewski, with chorus, for his InSync cassette (© C4112).

□ **RAVEL: Rapsodie espagnole.** Once again the outstanding quality of the InSync cassette demands special notice for that version of the Skrowaczewski recording (© C4104), once again there is an overlooked Monteux bargain (London STS 15356, © STS5 15356), and once again Dutoit takes top honors overall for performance and sound (London ● LDR 71059, © LDR5 71059, © 410 010-2). The alert and impassioned Muti recording is a good bet too (Angel ● DS-37742, © 4XS-37742).

□ **RAVEL: La Valse.** See the *Boléro* entry above and apply the same comments and numbers for the Dutoit, Monteux, and Skrowaczewski recordings. The closest runners-up, in case their respective couplings appeal, are those by Abbado (DG ● 2532 057, © 3302 057, © 410 033-2), Bernstein (CBS MY 36714, © MYT 36714), and Karajan (Angel S-36839, © 4XS-36839), the last a uniquely expansive reading.

□ **RESPIGHI: The Pines of Rome; The Fountains of Rome.** The economical reissue of the recording by Charles Munch and the New Philharmonia (London JL 41024, © JL5 41024) tells us all we know and all we need to know about these gloriously gaudy pieces. Munch's pacing of the "Appian Way" finale of *The Pines* in particular is unsurpassable, and the disc's sound is still impressive. Of the digital recordings, the superb-sounding one by Edo de Waart and the San Francisco Symphony comes closest to Munch's (Philips ● 6514 202, © 7337 202).

□ **RIMSKY-KORSAKOV: Capriccio espagnol.** Two low-priced reissues command prime attention. Ataulfo Argenta's superb reading is back now, with the seldom-heard Spanish Dances of Moszkowski again a delicious bonus (London STS 15601, © STS5 15601). Konstantin Ivanov's extremely persuasive performance is coupled with a similarly fetching one of Rimsky's *Antar* Symphony (Quintessence PMC-7209, © P4C-7209). Maa-zel, more vividly recorded, offers more familiar Rimsky fare on his well-filled disc (London CS 7196, © CS5 7196).

□ **RIMSKY-KORSAKOV: Scheherazade.** Kiril Kondrashin's majestic, poetic reading, superbly recorded (Philips 9500 681, © 7300 776, © 400 021-2), is the nearest rival to the still-outstanding one under Haitink (Philips 6500 410). Those by Reiner, remastered at half speed (RCA ARP1-4427, © ARE1-4427), Beecham (Angel RL-32027, © 4RL-32027), and Monteux (London STS 15128, © STS5 15128) are also quite distinguished.

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READER SERVICE NO.	ADVERTISER	PAGE NUMBER
	ADS	63
	Allison Acoustics	64
	AMC-Renault	81
58	Caslo	79
24	Celestion Industries, Inc.	10
57	Clarion	25
11	Concord Electronics	65
33	Dahlquist, Inc.	53
28	Denon America, Inc.	Cover 3
52	Design Acoustics	56
14	Design Acoustics	95
10	Discwasher	Cover 4
56	Dodge Division of Chrysler Corporation	11
12	Fujitsu Ten	89
	The Goodyear Tire & Rubber Co.	83
	Harman Kardon, Inc.	87
	Illinois Audio	111
40	International Hi-Fi Distributors, Inc.	113
39	J&R Music World	101
13	Jensen Sound Laboratories	8
	Kenwood Electronics	35
23	Koss Corporation	28
8	Kyocera	67
30	Labelle Camera & Stereo of Maine	105
26	The LAST Factory	60
	Marlboro	12
27	Maxell Corp. of America	20
4	Maxell Corp. of America	59
32	McIntosh Laboratory, Inc.	97
50	Mission Electronics	61
	Mitsubishi	9
34	Mobile Fidelity Sound Lab	91
31	NAD USA	58
15	Parasound	97
37	Polk Audio	54
35	Pyte Industries	99
	Radio Shack	2
	R. J. Reynolds/Camel	23
	R. J. Reynolds/Salem	31
	R. J. Reynolds/Vantage	4-5
	R. J. Reynolds/Winston	84
44	Sansui Electronics Corp.	7
45	Shure Brothers	55
	Sony Corp.	33
22	The Source	106
29	Stereo & Tape Outlet	106
38	Stereo Corp. of America	107
	Stereo Discounters	113
2	Tandberg of America	57
48	TDK Electronics	27
43	TDK Electronics	52
1	Technics	Cover 2
3	Techport Ltd.	62
61	TRIAD-Acoustic Design Group	66
60	Wisconsin Discount Stereo	109
	Yamaha International Corp.	17

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