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HIGH FIDELITY

Volume 36 Number 4 April 1986

TEST REPORTS

- 26 Technics SH-8066** graphic equalizer/spectrum analyzer
- 32 Sony D-7 Discman** portable Compact Disc player
- 36 Advent Prodigy** loudspeaker
- 39 JVC R-X370VB** AM/FM audio-video receiver
- 41 ADS Atelier P-4** turntable
- 42 Tatung VRH-8500U** VHS videocassette recorder

AUDIO & VIDEO

- 48 Special 14-page CES Coverage: The New Arrivals**
by Robert Long and E. Brad Meyer
Our correspondents report on the latest crop of audio and video components.

MUSIC

Classical

- 63 Unquiet on the Western Front**
by Michael H. Gray
Can't understand why your local store is forever low on CDs? Mr. Gray explains it all for you.
- 65 The CD Spread**
by Robert E. Benson, Irving Kolodin, Noah André Trudeau, James Wierzbicki, Bill Zakariassen
Fourteen mini-reviews, from *The Sorcerer's Apprentice* to *Robin Hood*
- 73 Recording "Cosi" in "Authentic" Sound**
by R. D. Darrell
A review of the new Oiseau-Lyre release, plus an interview with producer Peter Wadland

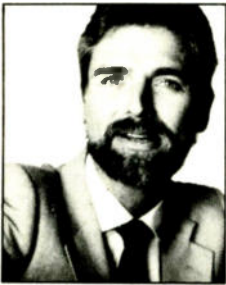
Popular/Backbeat

- 75 A Rubén Blades Close-up**
by Pamela Bloom
Latin America's most provocative singer stakes out new ground.

DEPARTMENTS

- 2 Front Lines** Chickens, eggs, and chips
- 5 Letters**
- 12 Currents** Scrambling today (satellite TV) and maybe tomorrow (LPs and CDs)
- 18 Crosstalk** Audio-video receivers; DBX vs. Dolby; Finding the right antenna
- 21 Basically Speaking** Radio: the inside story
- 22 Scan Lines** High fidelity video
- 62 Medley** Music for the Statue of Liberty; Hüsker Dü, absolutely live
- 67 Classical Reviews**
- 69 Critics' Choice**
- 77 Popular Reviews**
- 83 Jazz Reviews**
- 88 Advertising Index**

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BY
WILLIAM
TYNAN

CHICKENS, EGGS, AND CHIPS

ONE OF THE FEW THINGS THE CONSUMER ELECTRONICS industry seems to have gotten right in terms of introducing compatible software and hardware at the same time is the Compact Disc system. Undoubtedly, this has helped the CD take the music industry by storm. And Compact Disc players are certainly the single most sought after component. The chickens and eggs would appear to be in harmonious accord—but such is not the case. Suddenly, there are too few eggs: CDs are in short supply.

In "Unquiet on the Western Front," Michael H. Gray reports that the demand for Compact Discs far exceeds the ability of manufacturers to produce them. Some titles actually have sold out: If you didn't purchase them when first issued, you may be out of luck for ever buying them as CDs. How did this happen? How long will this continue? As you'll see, there are more questions than answers.

A whole set of new questions surrounds backyard antennas for satellite television. A few of these dishes first showed up around 1980, primarily in rural areas where off-the-air reception was poor and cable TV nonexistent. During the next five years, the dish industry mushroomed, as millions of people discovered the varied fare available free off the array of geostationary satellites. Today, this free lunch is coming to an end. Some major programming suppliers, such as Home Box Office, have started scrambling their signals, which means that special decoders are needed to receive their programs. How pervasive will scrambling become? What's left that's "free"? These and other questions are answered by regular contributor Robert Angus in "Muddying the Air," which appears in "Currents."

Finally, we look at two chips, which though very different in application will both have a strong impact on consumer electronics. One will incorporate a new FM transmission technique—FMX—that will measurably improve the sound quality of stereo FM over most of a station's signal-coverage area. The other chip would literally disable an audio cassette deck from taping certain encoded programming—whether broadcast or from cassette, LP, or CD. Detailed explanations of these chips and their implications appear, respectively, in our coverage of the Winter Consumer Electronics Show and in "Currents."

Debuting this month is "Scan Lines," a column by Technical Editor David Ranada that covers video technology. It will alternate with David's column on digital audio technology, "Bits & Pieces."

Cover Design:
Michael O. Delevante and
Robert V. Delevante, Jr.

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car Compact Disc changer

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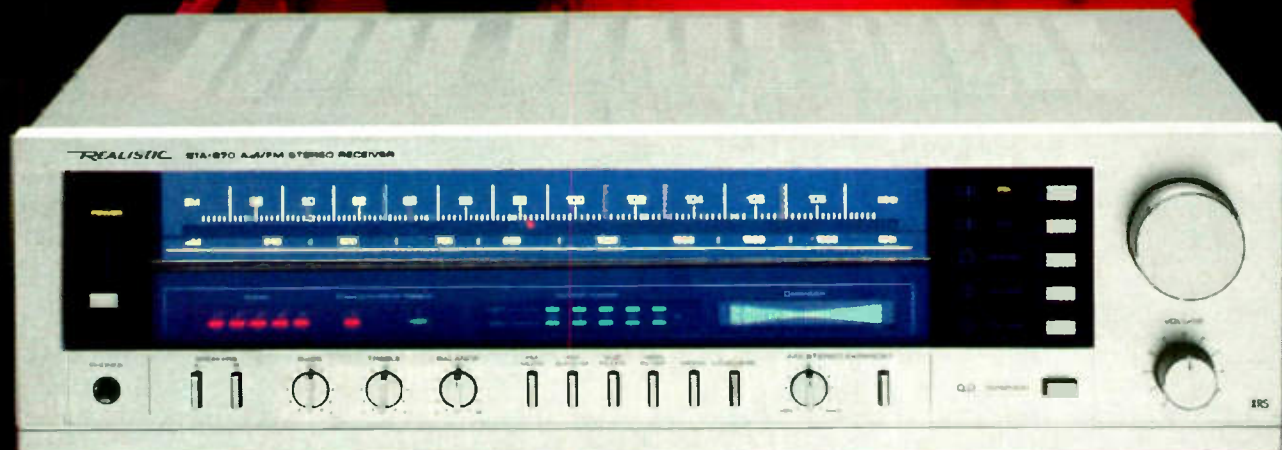
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RDAT?

IN YOUR OCTOBER 1985 ISSUE, DAVID RANADA reports that standards have been announced for a rotary-head digital audio tape system (RDAT). He further states that the first U.S. showing of RDAT machines will be at the January 1986 Consumer Electronics Show and that they will initially sell for \$500 to \$700. Among the dealers of PCM adapters that I've queried, the consensus is that RDAT decks are at least a year or two away, that they will cost more like \$2,000, and that we once again will be stuck in a format war, with no one standard prevailing. None have heard anything about these machines from their suppliers or from manufacturers, and most doubt that DAT—rotary- or stationary-head—will ever arrive. So whom do you believe? Is DAT fact or fiction, and if fact, when will I be able to buy a recorder?

Tom Buzzetta
Florissant, Mo.

No working DAT decks were shown at the Winter CES, but current word is that they will be introduced at the Japan Audio Fair in October. That means you should be able to buy one in the U.S. by early 1987. Opening prices are expected to be \$1,000 or less, but fluctuating exchange rates and the like could change that. No promises on either count from us. RDAT, for which an accepted standard already is in place, will arrive sooner or later. The future of SDAT is less certain. It seems unlikely that anything will come of it or, therefore, that there will be a format war.—Ed.

SOUNDS AT ST. ALBANS

ALLOW ME TO POINT OUT A COUPLE OF SMALL errors in Terry Teachout's review of the recent Hyperion issue of Britten choral music [January]. First, the Cathedral Church of St. Albans, where the Britten recording was made, is not in London, but in the city of St. Albans, about 12 miles north of the outskirts of London. Second, although Peter Hurford was for some years organist of St. Albans, he did not do any of his Bach recordings there. Hurford is much too emphatic a partisan of neo-Baroque mechanical-action instruments to record Bach on a "decadent" organ like the Harrison in St. Albans.

Pedantry aside, I continue to enjoy HIGH FIDELITY's reviews, which are generally cogent and thought-provoking. Keep up the good work.

Scott Cantrell
Albany, N.Y.

GETTING THE FACTS

IN JANUARY'S "MEDLEY," TED LIBBEY MENTIONS an album of "several Wagner preludes and overtures" recently made by Giuseppe Sinopoli and the New York Philharmonic for Deutsche Grammophon. This was not, as he states, a live ("concert") recording, but rath-

er a studio recording, which included not only the overtures and preludes Sinopoli conducted at that week's concerts, but also the *Siegfried Idyll*. The changes in the Philharmonic's program throughout the week were effected not only to "get a full disc's worth of selections" but also to provide a sort of warm-up for the sessions, which took place on October 21, 1985, at the excellent Performing Arts Center at the State University of New York's Purchase campus. The recording's release is planned for later this year.

Allison Ames
Vice President
Deutsche Grammophon
New York, N.Y.

Ted Libbey replies: No matter how hard one tries to get the facts, mistakes can still be made. In this case the mistake must have been mine, because my source for the report was Allison Ames herself.

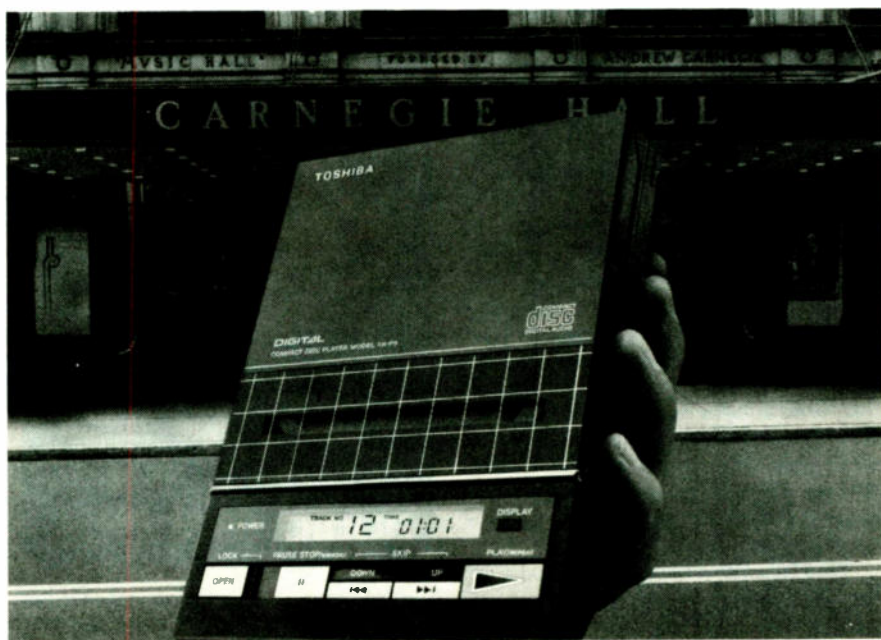
CONCLUSIONS CHALLENGED

I FOUND YOUR HIGHLY ENTHUSIASTIC REVIEW of the Nakamichi ST-7 tuner [December 1985] somewhat surprising. You state that its stereo separation and signal-to-noise ra-

tio are "superb." Yet, S/N is only average at 71½ dB in stereo, and the 8-dB improvement in mono indicates a much less than superb multiplex decoder. No wonder a variable-blend circuit was included to reduce noise. As for channel separation, your figures show that even in the full-stereo mode there is a large amount of high-frequency blending. Tuners in the superb category should, in my opinion, be able to maintain more uniform separation. The sensitivity, capture ratio, selectivity, and AM suppression you measured are only average these days. Many tuners at half the price can match the ST-7's performance, and for the money Nakamichi is asking, I can think of several that outperform it by a wide margin. If you want your reviews to be taken seriously, they should have a more objective, value-oriented approach.

Gregory Stidson
Northampton, Mass.

A look at the curve shows that separation is more than 40 dB to beyond 7 kHz, more than 35 dB to about 12 kHz, and more than 30 dB at 15 kHz. These really are excellent figures (few tuners achieve 40 dB of separation at any frequency); certainly



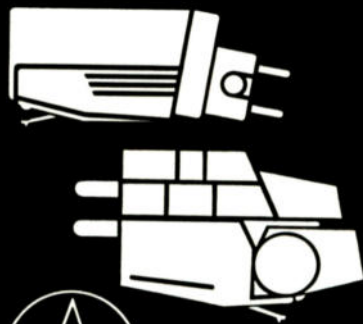
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they do not support your contention that there is substantial high-frequency blending. The stereo signal-to-noise ratio is within a dB or so of the best we have measured, and we can recall only one (much more expensive) tuner that turned in a substantially better mono figure. The discrepancy between the stereo and mono S/N ratios is not the result of any deficiency in the multiplex decoder. The stereo FM system exacts a noise penalty of more than 20 dB relative to mono. If there were not a substantial difference between the two measurements, it would suggest that the tuner's electronics were adding a significant amount of noise.

The ST-7's capture ratio is about as good as can be reliably measured, and the AM suppression is somewhat (though not dramatically) better than average. Sensitivity is only a couple of dBf ahead of the average for current tuners (we saw better figures a few years ago) without the Schotz circuit, but the kicker is the 6-dBf improvement when you turn the circuit on. The resulting 30½-dBf stereo sensitivity measurement is simply spectacular. We also would single out the pilot and subcarrier suppression figures as evidence of the ST-7's exceptional performance. But in the end, it may be the consistency that is most impressive: Our tests turned up no design characteristic that was less than very good and a number that were outstanding. In short, we stand by

our original conclusions.—Ed.

TAPE TESTING AND DBX

YOUR AUGUST 1985 AUDIO TAPE TESTS SUFFER from a serious omission: performance with DBX processing. My experience has been that with my DBX 128, I can produce high-quality sound using budget Type I tapes. The DBX processor is so superior to Dolby noise reduction that I imagine you dare not come right out and say it. At any rate, please stop pandering to the "Dolby level-heads," whose technology is passé.

Also, why the ridiculous prices in your

The last word in record care



audio-technica

survey? I can get Sony HF cassettes for less than a dollar each and Sony UCX tapes for about \$1.75 each from numerous discounters in my area.

David Marshall
Belmont, Mass.

Assessing tapes with any particular noise reduction system would make the results less universally applicable and somewhat dependent on the processor used for the tests. (We already have the latter problem to a certain degree simply because some specific cassette deck has to be used.) Our present approach yields information that is useful no matter what noise re-

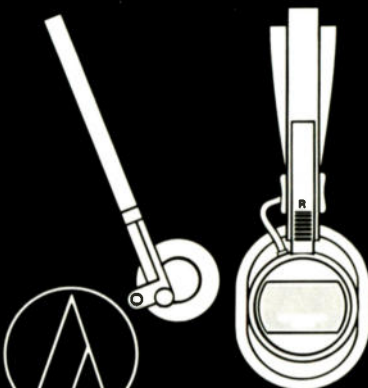
duction system you employ. We're not sure what you mean by "pandering to the 'Dolby level-heads'": The only measurement that is important solely to Dolby users is the one for sensitivity.

The superiority of DBX is less clear-cut than you seem to think. True, the basic signal-to-noise ratio can be better with DBX than with Dolby B or C, and the recording circuits do not have to be calibrated to the sensitivity of the tape being used to assure accurate decoding on playback, but you can get objectionable noise pumping on some music, which is not an issue with either of the Dolby systems. For this reason, it sometimes is more important to use a tape with very low noise (such as a good chrome) for DBX recording than it would be for Dolby recording. And the extra noise reduction afforded by DBX is not always necessary. Much material can be recorded well enough with Dolby C or even Dolby B that you'd have a hard time telling the cassette from the original, provided the deck is capable of good performance and is properly calibrated for the tape.

As noted in the last paragraph of the article, we use the manufacturers' list prices because we cannot be sure what discounts will be available from store to store or even from time to time.

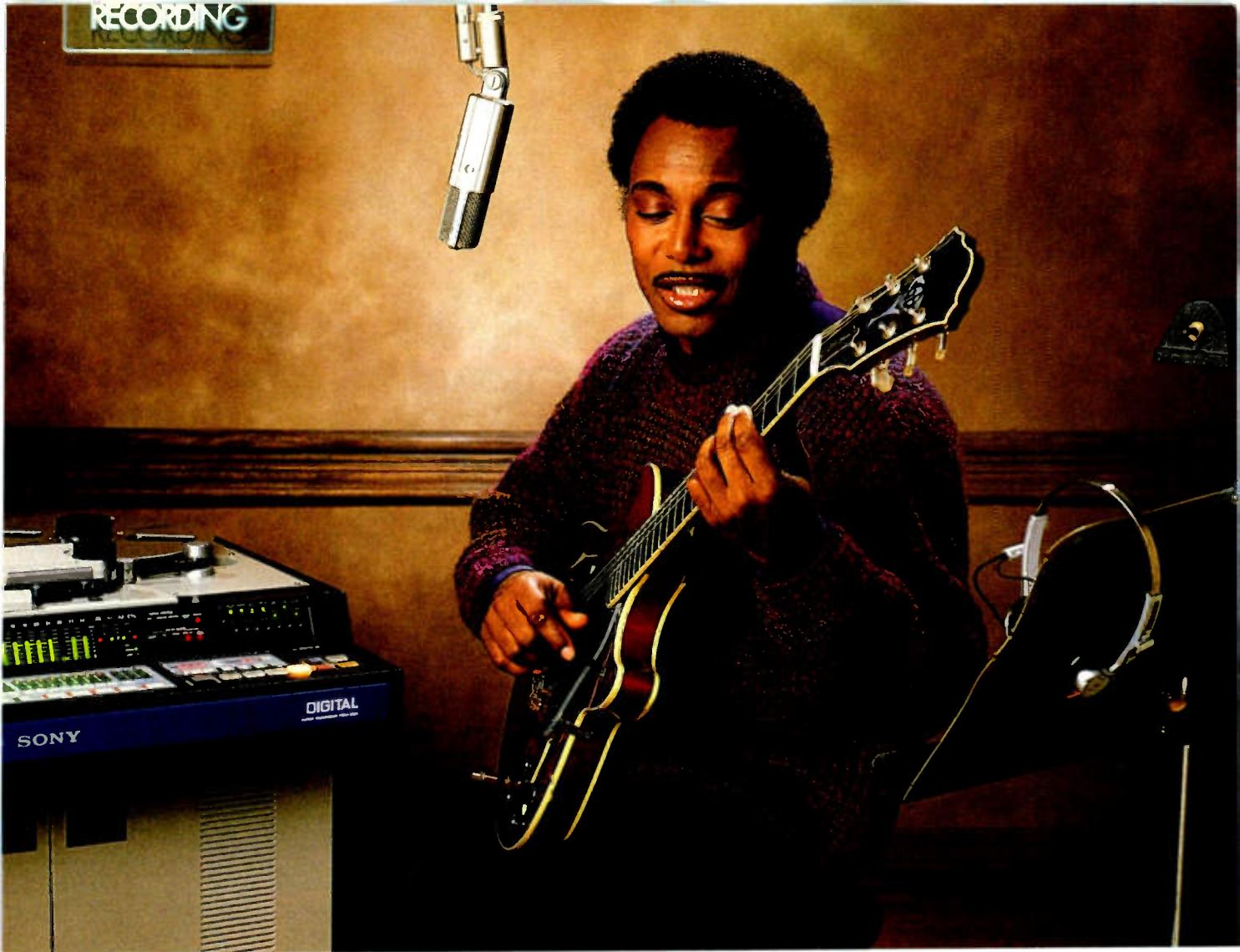
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The last word in stereophones



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RECORDING



To hear why George Benson records on Sony Digital equipment, play him back on a Sony Compact Disc Player.

When it comes to capturing the experience of live music, no audio equipment delivers the performance of digital audio.

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Not only has Sony led the way in professional digital recording equipment, we also invented the digital system for playback—the compact disc player. Sony introduced the first home, car and portable CD players. And Sony sells more types of compact disc players than anyone else in the world.

But whichever Sony Compact Disc Player you choose, each allows you to hear the music the way the artist originally intended.

So why not do what George Benson does? Play back the top-selling compact discs the same way they were mastered. On Sony Digital equipment. You'll find that when it comes to bringing you close to the music, nothing else even comes close.

Presenting the Sony Discman,[™] the world's smallest portable compact disc player.

Hardly larger than the disc itself, the fully programmable Discman* D-7DX comes complete with carrying case, headphones and a rechargeable battery. Everything you need for digital audio on the go.

SONY
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Matthew Polk's Revolutionary TRUE STEREO SDAs



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SDA CRS
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Polk's revolutionary TRUE STEREO SDA Loudspeakers fully realize the astonishingly lifelike three-dimensional imaging capabilities of stereophonic reproduction.

"All Polk's Revolutionary TRUE STEREO SDAs Always Sound Better Than Conventional Speakers"

"Mindboggling...Astounding...Flabbergasting"

High Fidelity Magazine

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

Stereo Review Magazine

Polk's critically acclaimed, Audio Video Grand Prix Award winning SDA technology is the most important fundamental advance in loudspeaker technology since stereo itself. Listeners are amazed when they hear the huge, lifelike, three-dimensional sonic image produced by Polk's SDA speakers. The nation's top audio experts agree that Polk SDA loudspeakers always sound better than conventional loudspeakers. Stereo Review said, "Spectacular...the result is always better than would be achieved by conventional speakers." High Fidelity said, "Astounding...We have yet to hear any stereo program that doesn't benefit." Now the dramatic audible benefits of Polk's exclusive TRUE STEREO SDA technology are available in 4 uniquely superb loudspeaker systems, the SDA-1A, SDA-2, SDA CRS and the incredible new SDA SRS.

"They truly represent a breakthrough"

Rolling Stone Magazine

Without exaggeration, the design principals embodied in the SDAs make them the world's first true stereo speakers. When the big switch was made from mono to stereo, the basic concept of speaker design was never modified to take into account the fundamental difference between a mono and stereo signal.

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

How Polk SDAs Achieve True Stereo

Although a lot of effort is devoted to maintaining full stereo separation in your hi fi, much is lost when you use conventional, (non-SDA) speakers. When each ear hears both speakers and signals, as occurs when you use conventional (Mono) speakers to listen in stereo, full stereo separation is lost. The undesirable signal reaching each ear from the "wrong" speaker is a form of acoustic distortion called interaural crosstalk, which confuses your hearing,

The SDA Signature Reference System (SRS) - \$1395.00 ea.

1985 Audio Video Speaker of the Year

The finest speaker that Polk manufactures. This limited production flagship model combines patented SDA TRUE STEREO technology with phase-coherent focused line-source multiple driver topology to achieve new levels of state-of-the-art imaging, detail, coherence, dynamic range and bass reproduction. High Fidelity said the SRS is "impressive and worthy of Matt Polk's signature."

The SDA 1A - \$875.00 ea.

1982 Audio Video speaker of the Year

A beautifully styled, full size floor-standing system combining Polk's state-of-the-art components with exclusive TRUE STEREO technology for extraordinarily lifelike sound. It has tremendous dynamic range, high efficiency and awesome bass performance. While efficient enough to be driven by a small receiver, it will handle 500 watts per channel. High Fidelity said "the Polk SDA 1 Loudspeaker provides startling evidence of the audio industry's essential creative vitality."

The SDA 2 - \$625.00 ea.

1983 Audio Video Speaker of the Year

Similar in construction and performance to the SDA 1A, but scaled down in size and price. It represents extraordinary value for the dollar. High Fidelity said listening to the SDA 2 is "an amazing experience."

The SDA Compact Reference System (CRS) - \$395.00 ea.

1984 Audio Video Speaker of the Year

The world's best sounding bookshelf loudspeaker. It combines the exceptionally lifelike sonic performance of Polk's exclusive SDA technology with a handsome enclosure of modest proportions. It can be easily and unobtrusively located in any room. A built in rear mounted 10" subwoofer allows the CRS to achieve remarkably dynamic bass performance. They can be placed right against the back wall, on a stand or on a shelf without compromising the ability of these amazing compact speakers to project a huge sonic image throughout your room. Stereo Review Magazine said the CRS is "an impressive achievement."

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

"Breathhtaking...a new world of hi-fi listening"

Stereo Buyers Guide

"Literally a new dimension in sound"

Stereo Review Magazine

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

"You owe it to yourself to audition them"

High Fidelity Magazine

SDAs allow you to experience the spine tingling excitement, majesty and pleasure of live music in your own home. You must hear the remarkable sonic benefits of SDA technology for yourself. You too will agree with Stereo Review's dramatic conclusion: "the result is always better than would be achieved by conventional speakers...it does indeed add a new dimension to reproduced sound."

Matthew Polk's Incredible/Affordable Monitors



Monitor RTA 12C
\$479.95 ea.

Monitor 10B
\$329.95 ea.

Monitor 5jr.
\$129.95 ea.

Monitor 4A
\$84.95 ea.

Monitor 5B
\$189.95 ea.

Monitor 7C
\$249.95 ea.

Digital Disc Ready

Matthew Polk's remarkable Monitors offer state-of-the-art technology and performance usually found only in systems which sell for many times their modest cost.

"The Genius of Matthew Polk Creates The Incredible Sounding/Affordably Priced Monitors"

"Vastly superior to the competition"

Musician Magazine

P

olk Audio was founded in 1972 by three Johns Hopkins University graduates who were audiophiles with a common dream.

Polk's Dream of Super Sound for Everyone

They believed that it was possible to design and manufacture loudspeakers of uncompromising quality which performed as well as the most expensive and exotic loudspeakers available, but in a price range which would make them affordable to virtually every music lover. The original Monitor 7 was the first product of their efforts and it was so successful that when it was shown at the Consumer Electronics Show, dealers and experts alike could not believe its superb performance and affordable price. Audiogram Magazine said, "when we heard the Polk speakers at the CES Show we were so impressed we could not believe the prices." The entire Polk Monitor Series was designed in this tradition of incredible, state-of-the-art sound and affordable prices. In large part due to the quality and value of the Monitors, Polk Audio has developed from its humble beginnings in a garage, to become one of the world's premier loudspeaker manufacturers.

Polk Audio has worked hard over the ensuing years to maintain the Monitor Series' preeminent position as the standard for quality and value in the audio industry. The Monitors have been continually improved and refined as a result of Polk's never ending search for better sound quality. There have been literally thousands of improvements made to the Monitors and the result is that today, as in the past, the Polk Monitors are absolutely the best sounding loudspeakers for the money available on the market. Musician Magazine said, "If you're shopping for stereo, our advice is not to buy speakers until you've heard the Polks." You owe it to yourself!

"At their price, they're simply a steal"

Audiogram Magazine

A new generation of Polk Monitors is now available which incorporate the same high definition silver coil dome tweeter and Optimized Flux Density drivers developed for the SDAs. Polk Monitor Series loudspeakers have always had a well deserved reputation for offering state-of-the-art performance and technology usually found only in systems which sell for many times their modest cost. In fact, many knowledgeable listeners consider that outside of the SDAs, the Polk Monitors are the finest imaging conventional speakers in the world, regardless of price. They have been compared in performance with loudspeakers which sell for up to \$10,000 a pair and are absolutely the best sounding loudspeakers for the money available on the market. Now they sound even better than ever.

The RTA 12C – \$479.95 ea. is the finest conventional (non SDA) speaker system that Polk manufactures. Its extremely high power handling (500 watts) and efficiency (92 db 1 meter 1 watt) result in remarkable dynamic range from large or small amplifiers. It utilizes phase-coherent open air driver mounting in a mirror imaged, fullsize floor-standing configuration for superior sonic imaging and clarity. In addition to receiving many rave reviews, the RTA 12C has won the AudioVideo Grand Prix Speaker of the Year Award.

The Monitor 10B – \$329.95 ea. is considered one of the world's best sounding loudspeakers and in the words of Audiogram Magazine, "At the price they are simply a steal." The 10B offers sonic performance almost equal to the 12 at a lower cost in a more compact enclosure. Like the 12, the 10 utilizes dual Polk trilaminate-polymer bass midrange drivers coupled to a built-in sub-woofer for outstanding bass response and dynamic range.

The Monitor 7C – \$249.95 ea. is basically a smaller, less expensive version of the Monitor 10. It can be either shelf or stand mounted with excellent results. How good? Audio Alternative Magazine said, "It is Amazing."

The Monitor 5B – \$189.95 ea. similar in design and performance to the Monitor 7, however, it utilizes an 8" subwoofer (rather than 10") and is more compact.

The Monitor 5jr – \$129.95 ea. has been called the best sounding speaker of its price in the world (regardless of size). It achieves lifelike three dimensional musical imaging which 10 years ago was not available in any bookshelf speaker at any price!

The Monitor 4A – \$84.95 ea. shares many of the same high technology components and the rewarding musical performance of the more expensive Polks. Audio Critic Lawrence Johnson called it, "an all around star of great magnitude." The 4A's uniquely affordable price means that no matter how small your budget, you can afford the incredible sound of Polk!

"Absolutely first rate...superior sound at a moderate price."

Stereo Review Magazine

All the Polk Monitors regardless of price offer consistently superb construction and sonic and performance. They achieve open boxless, three dimensional imaging surpassed only by the SDAs. The Monitors' silky smooth frequency response assures natural, non fatiguing, easy to listen to sound; while their instantaneous transient response results in music that is crisply reproduced with lifelike clarity and detail. In addition dynamic bass performance, ultra wide dispersion, high efficiency and high power handling are all much appreciated hallmarks of Monitor Series performance.

The consistently superb performance of the Polk Monitors is in large part due to the fact that they all utilize very similar components and design features. However, more importantly, it is the elegant integration of concepts and components which results in the superior sonic performance and value which sets the Monitor Series apart. Audiogram magazine said, "How does Polk do it? We think it is mostly execution. They hear very well and they care." Audiogram is absolutely right. At Polk we take the same care with each and every product we build, whether it is our most or least expensive. We lavish the same lengthy amount of critical listening and tuning on every single Polk speaker because we know that having a limited budget does not necessarily indicate that you have a limited ability to appreciate true musical quality.

**"Our advice is not to buy
speakers until you've
heard the Polks."**

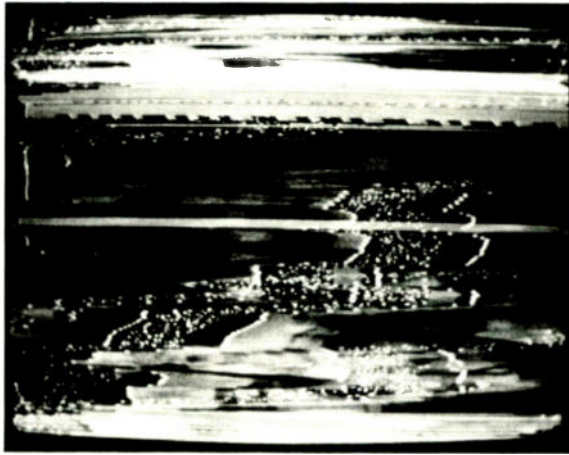
Musician Magazine

You can afford the incredible sound of Polk

There are six Polk Monitor Series loudspeakers. As you move up the Monitor Series the speakers get larger and more efficient, handle higher power, have greater dynamic range, better bass response. They are designed so that a smaller Polk played in a small room will sound nearly identical to a larger Polk in a large room. And, of course, a larger Polk in a smaller room will play that much louder and have even more bass. There is a Polk Monitor which is perfect to fulfill your sonic dreams, at a price you can afford. Visit your Polk dealer today to hear the incredible/affordable Polk Monitors and the revolutionary Polk SDAs.

Polk Audio, 1915 Annapolis Road, Baltimore, Md. 21230

In Canada: Distributed by Evolution Technology, Toronto.



CLOSE-UP OF A TV SCREEN, SHOWING THE UNDECODED RESULT OF M/A-COM SIGNAL SCRAMBLING. SEE "MUDDYING THE AIR," PAGE 15.

CBS Muddies the Waters

THE FOLKS WHO DEVELOPED THE SQ FOUR-channel system, CX noise reduction, and who now seek acceptance of FMX encoding for broadcasting (see "CES: The New Arrivals," page 48), have cooked up yet another encoding scheme, this one to prevent successful taping of "protected" recordings or broadcasts. In brief, CBS Technology Center's system—called Copy Coding—will temporarily disable the recording process in suitably equipped audio cassette decks whenever the circuit detects an attempt to record a specially encoded music signal. It is claimed that the "marking," or software-protection process, has only sonically benign effects on signal quality, so uncopyable recordings will still be listenable.

If CBS were to have its wish, as an alternative to the one-cent-per-minute tape tax, legislation would be enacted to slap a substantial price penalty ("license fee") on any new audio recorder not equipped with the necessary integrated-circuit detection chip. A second scenario is a dual-inventory system in which unprotected recordings would sell at substantially higher prices. Both are obviously attempts to provide greater income to the record companies by increasing sales and discouraging what they consider piracy.

What are the chances of CBS's dreams coming true? From this vantage point, the odds look slim. Not only must suitable legislation be passed, but the detection circuit must cost the deck manufacturer very little so that by the time the chip reaches the consumer, the machine containing it will cost substantially less than a circuitless unit plus license fee. For this to occur, the recorder license fee would have to be in the tens or even hundreds of dollars. Even though CBS plans to place the Copy Coding system in the public domain, the chip and its attendant resistors and capacitors do not come free. And simply getting the detection chip built into decks may meet with stiff resistance. American dictation of how engineers should design their circuits will not sit well with tape

deck manufacturers, all of whom are overseas. A dual-inventory plan will cause consternation in other quarters: Can any retailer afford to maintain an inventory with six formats (protected and unprotected versions of cassettes, LPs, and CDs)?

CBS's Copy Coding system is the audio counterpart of videotape antidubbing and computer software copy-protection schemes that are claimed to prevent unauthorized duplication while still permitting normal use of the information. However, most videotape protection schemes have been abandoned, because they often create picture-stability problems. Computer software protection is gradually dying, too, because protected programs can create technical problems with the computers and practical problems for legitimate users, in addition to offering stimulating challenges to "hackers" who spend their free time figuring out how to break the protection schemes. Do similar considerations apply to Copy Coding? To assess that possibility, you have to know how the system works.

A few of the crucial technical details were explained by David Stebbings of the CBS Technology Center during a phone interview. Conceptually, the system is quite simple. In the encoding process, the audio signal need only pass through a notch filter that removes all the information in a narrow band of frequencies "above the range of most audio fundamentals." Stebbings said that the filter is centered one quarter-tone away from an equal-tempered scale pitch so that as little music as possible is removed. Other sources say that the filter is located near 4 kHz and that it is 100 to 200 Hz wide.

When a processed signal from disc, tape, or radio is fed into a chip-equipped tape deck, the circuit measures the ratio between the amount of signal in the regions immediately adjacent to the notched band and the level of signal remaining in the band. If a certain (undisclosed) ratio is exceeded (the amount of 4-kHz signal being too low), the

chip decides that the incoming program material is to be protected from dubbing and then disables the recording circuitry.

This is very clever. The use of the *absence* of a signal as the "key" is the technique's most canny characteristic, because it takes advantage of both the richness of typical musical spectra around 4 kHz (the system wouldn't work if moved to a frequency region that contains little energy or too much noise) and the ears' insensitivity to very narrow notch filters (an equivalent amount of signal boost would be instantly audible). Use of a midband region also permits a protected signal to be broadcast and recorded on videotape with a good chance that any attempt at dubbing will fail. If installed in VCRs, the system may be the long-sought solution to video piracy as well.

Nevertheless, the claimed inaudibility of such mucking around remains to be publicly demonstrated, though reports of scientifically conducted ABX tests support this assertion (at least on the program material used). The effects of the encoding filters can be made audible with certain swept-frequency signals (often used in synthesized pop music) and may become significant at the other musical extremes—with "original instrument" performances of Classical and Baroque pieces (which often are played at about a quarter-tone below modern standard pitch), and with non-Western or modern microtonal music that explores the pitches between half-tones. At the very least, antidigital audiophiles should be incensed. Not only is steep-rolloff filtering used to create the notch, but it occurs smack-dab in the middle of the audio band (not at its edge, as in CD players).

Can Copy Coding be outwitted? Certainly. Students of electronics could easily supply replacements for the essential circuits that would be damaged by removal of the detection chips. And by use of what would be the audio equivalent of a phone-cheating

(CONTINUED ON PAGE 15)



SEE RADAR IN A NEW LIGHT.



Green LED - There's radar in the area.



Yellow LED - Radar is near. Proceed with caution.



Red LED - You are in clocking range.

FOX TAKES RADAR OUT OF THE DARK WITH THE SUPERFOX VIXEN II.

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WHAT ROAD & TRACK SAW, IT "HIGHLY RECOMMENDED."

ROAD & TRACK Magazine's April '85 issue looked at the 10 most widely distributed radar detectors. They tested for overall Sensitivity, Sensitivity Around A Corner, Sensitivity Cresting A Hill, the Maximum Audible signal, and Leakage and Leakage Reception (picking up non-radar signals as radar). It was a tough road test that not everyone passed and that only a few were considered good enough to be "highly recommended" by the editors of ROAD & TRACK.

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WE'RE AS SENSITIVE TO RADAR AS YOU ARE.

Fox has been pioneering the research and development of radar detectors for almost a decade. The Vixen II incorporates the most advanced technology in radar today, both in finding radar and in communicating its findings to the driver.

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The Vixen II is sensitive to all your driving needs. So we offer you a choice of City/Highway or Preset.

For most driving, a special "Preset" position will yield the best results. Around town, you may want to turn the squelch control to "City," to eliminate annoying false alarms from non-microwave signals, for example.

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When you reach your destination, you can simply unplug the cord and put your Vixen II safely away.

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Call toll free to order a Vixen II for \$249.95,* or to get the name of your nearest Fox dealer. Call 1-800-543-7892. In Ohio, 1-800-621-2513; in Canada, 1-800-663-0295.



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comes through but the
music, pure and clear.

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programming lets you
choose the selections
you want to hear in the
order you want to hear
them. You can repeat,
edit, search, and seek
with the touch of a
finger.

When music is your
passion, listen to Teac—
made purely for music.

TEAC

(CONTINUED FROM PAGE 12) "blue box," controlled amounts of noise or synthesized musical harmonics could be added in the notched region to cancel out the encoding. Although this can be made difficult by the use of several nonharmonically related notches in the encoding process and other techniques, such measures would inevitably raise the cost of the detection circuit.

The simplest method of getting around Copy Coding is to shift the pitch of the program being copied. Because the process is said to detect double and quadruple copying speeds, the trick is to use an unusual multiple, say 1.53 times normal speed for both original and tape deck, so that the detector circuit is looking at a band with no notch in its spectrum. If nothing else, legislation supporting Copy Coding should trigger a massive resurgence of variable speed controls. Another solution is this: If you feel that the law might threaten your recording practices, you can (1) buy a good deck immediately and (2) start hoarding blank tape.

David Ranada

Muddying the Air

ON JANUARY 15, 1986, HOME BOX OFFICE (HBO) and its sister premium-movie cable service, Cinemax, pulled the plug on the nation's backyard satellite dish antennas, all 1.5 million of them: The two "satcasters" started full-time scrambling of their signals, turning them into an unwatchable video hash. "The day the sky went dark," one reporter dubbed it. "Big deal!" retorted Fred W. Hoopes, a satellite TV antenna owner in Malvern, Pennsylvania. "I never watched those channels anyway."

As has so often been the case with space-age toys, the reaction depended greatly on one's perspective. Urban and suburban cable subscribers saw it as a case of getting even with their rural counterparts, who had been receiving a free ride while they paid \$3.95 or more a month for the same, albeit wired-in, premium-movie services. City-based journalists saw it as an apocalyptic beginning-of-the-end for all home satellite reception. On the other hand, many dish owners, able to extract only one or two snowy broadcast-TV signals from their rooftop antennas, viewed the scrambling as a loss of only a few out of more than one hundred regularly scheduled satellite channels. And the manufacturers of antennas and their related electronics surprised everybody by hailing the move as the salvation of

the satellite antenna industry because it removed buyer-inhibiting confusion.

The roots of HBO's actions extend back a decade. In 1976, when it was still a regional pay-cable firm, HBO discovered it could distribute its films to subscribing cable companies more efficiently and economically by sending its signal up to one of the communications satellites already orbiting the earth relaying telephone messages, Teletype data, and other information. Over the next few years, other programmers joined HBO and Cinemax on the "birds." It didn't take long for backyard tinkerers to find that with the right high-gain electronics and dish-shaped

parabolic antenna, they could pick up for free the movies cable companies made their subscribers pay for.

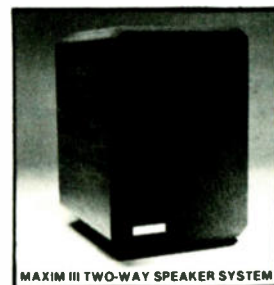
At first, nobody worried much about these do-it-yourself dish makers. There were too few of them, and the cost of commercial dishes and electronics ranged from \$36,000 to more than \$100,000. But by 1980, HBO had several rivals in the premium-movie business (like Showtime, The Movie Channel, Home Theater Network, and SelecTV), and they all were becoming alarmed at the downward plunge of home satellite-system prices (to \$5,000 or less) and the consequent increase in the number

"... the most successful design of all"

J. Gordon Holt *Stereophile* July, 1985.

Mr. Holt elaborates further: "Of all the speakers in this price class that I have heard, I would say that Siefert's Maxim is probably the most successful design of all...The system is beautifully balanced and almost perfectly neutral...the low end from these is just amazing!...these little speakers will play LOUD! Unlike most small systems...they have the most accurate middle range I have heard from any speaker...the high end sounds as if it goes out almost indefinitely... I would gladly take this high end in preference to that of most over-\$2000 speaker systems I have auditioned in recent years...The Maxim reproduce massed violin sound superbly— with not a trace of steeliness, yet with all the resinous sheen of the real thing...I have never heard strings on good CDs sound more natural...the imaging and soundstage presentation from these are excellent. They do not sound small...It can make most audiophiles (and practically all music lovers) quite happy for an indefinite period of time. Recommended."

Siefert Research, dedicated to excellence in sound, is a pioneering designer and manufacturer of minimum-group-delay and low-intermodulation-distortion speaker systems.



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of backyard dishes. Accordingly, HBO, by then acquired by Time-Life, Inc., set the first of its scrambling deadlines. The date came and went, and still no scrambling: All the while, the number of dishes and satellite channels was increasing. However, by late 1985, when HBO announced the January plug-pulling, it was becoming evident that the company really meant it this time. As early as November 1985, HBO and Cinemax were scrambling as much as 12 hours of programming a day in preparation for the January move to 24-hour encoding.

HBO, however, was by no means the first satellite programmer to scramble, nor will it be the last. Prior to November 1985, about a dozen satellite-TV channels already were scrambled (including a package of Detroit and Canadian commercial stations intended for cable systems and individual subscribers in Canada's Far North, a channel featuring programming for hospitals, a hard-core-porn channel, and one aimed at Baptist Church professionals). By the end of 1986, the National Cable Television Association predicts several other major satellite services will be scrambled, including CBN, CNN, Headline News, the Disney Channel, MTV, VH-1, Nickelodeon, the Playboy Channel, Showtime, The Movie Channel, ESPN, USA Network, and WTBS.

As practiced by HBO and the Cancom group of stations in Canada—and as proposed for CNN, The Movie Channel, and others—scrambling is a technique for mixing up a video signal by suppression or alteration of the vital synchronization signals that enable a television to reconstruct a video image. You might be momentarily successful in compensating for the lack of sync pulses, but the pattern won't last long enough for you to enjoy the signal before it becomes hopelessly scrambled again. Scrambling systems also encrypt the sound, so that even if you do succeed in getting a picture, it will be accompanied by sonic mush, if anything.

The solution is a descrambler, programmed to precisely undo these variations as they occur. HBO and the others love these devices because mere possession of one doesn't guarantee you access to the programs. The decoder must be authorized by a central computer to receive those programs—and only those—you've paid for. Don't pay your monthly bill, which could range from \$3.95 to more than \$60, and the computer will shut off your decoder via satellite. If you can find a descrambler capable of decoding HBO or Cinemax (they're available on an extremely limited basis from Channel Master and M/A-Com), it will cost you \$395 plus the monthly programming-service fee.

A problem with the decoder "solution" is that there's more than one way of varying

the video-signal characteristics. Cancom and the X-rated Fun Channel use an encryption system developed by Oak-Orion, while HBO, Cinemax, and others use the rival M/A-Com Videocipher II. Other analog-based scrambling systems already are in use or are proposed—raising the specter of the satellite enthusiast who wants to see everything having to buy three or four (or more) decoders. Because there's no regulating agency for satcasting signal formats, there's no easy way of establishing a universal scrambling standard, even if the various programmers were interested in doing so, which they are not. And what scares some dish owners even more is the real possibility that after a large number of Videocipher decoders has been sold, HBO and the rest of the pack could switch to some other form of scrambling.

While the FCC has been loath to intrude on satellite programming on behalf of the dish owner, some unlikely heroes have stepped forth from, of all places, Capitol Hill. It seems that at least a few members of Congress have been counting the number of dishes in their districts and have decided that there are more votes to be gained in protecting the interests of dish owners than in looking out for the cable industry. Some, like Senators Barry Goldwater of Arizona and Albert Gore of Tennessee and Representative Judd Gregg of New Hampshire, are dish owners themselves, and they resent the efforts of the cable industry to label them "signal pirates." Representative Gregg has introduced a bill calling for a two-year moratorium on scrambling so that the satcasters, cable operators, dish users, and Hollywood producers can sort things out. Other congressional voices have called for limits on the fees programmers might charge dish owners above what cable subscribers are now paying.

"The satellite industry isn't looking for something for nothing," comments Rick Brown, legal counsel to SPACE, the satellite-TV industry's trade and lobbying organization. "Manufacturers and responsible dish owners have always realized that programmers have a right to be paid for the entertainment they produce. But in the early days, when individual dish owners tried to send checks to HBO, they went uncashed and unacknowledged. What dish owners are looking for today is the right to buy the programs of their choice at the same prices a cable subscriber would have to pay." Brown points out that while a cable operator has the cost of running a wire to each subscriber's home and maintaining it, there are no delivery costs to the antenna owner. "The cost to a dish owner actually should be lower for that reason," he says.

Meanwhile, cable subscribers have been

deriving perverse pleasure from the discomfort of their country cousins who over the past few years have spent from \$995 to more than \$5,000 for the big antennas, blissfully unaware that it is they, the cable subscribers, who have had to pay the \$2 million to \$10 million tab that scrambling reportedly has cost HBO so far. The burden has not been in higher subscription rates—although that could come, too—but in fewer, less interesting movies. What's kept many programmers from plunging into scrambling is the high cost of providing descramblers to the intended recipients of those signals plus the cost of the encoding equipment. The larger the number of paying customers (cable systems or subscribing TV stations) a would-be satellite scrambler serves, the more decoders he has to buy, at \$400 or so a throw. For HBO, the number of decoders ran into the thousands.

Nobody seriously believes that scrambling will convert all 1.5 million backyard dishes into birdbaths (the open-mesh antennas don't even hold water). Most dish owners are resigned to the notion that they're eventually going to pay for what they've been getting free, at least as far as the payable channels are concerned. But a potential audience of 1.5 million affluent homes is not to be dismissed lightly, and several satcasters have already said they'll serve the home market, with shop-at-home services, religion, rock videos, soft-core porn, and other advertiser-sponsored special-interest programs ("narrowcasts"). And everybody believes that marketing of HBO and similar services directly to the home consumer, bypassing the cable companies at times, eventually will occur.

In any case, dish owners balking at shelling out for any type of decoder will always have much to watch. Early this year, the trade magazine *Home Satellite Marketing* counted at least 32 satellite programmers it said would never scramble, including the Canadian Broadcasting Corporation, PBS, a group of TV evangelists, Spanish-language stations from Mexico, the Armed Forces Satellite Network, C-SPAN (current affairs plus the proceedings of the House of Representatives), and the Canadian House of Commons Debates. True, these lack the glamour of HBO, Cinemax, and the Playboy Channel, but they do provide a wide diversity of information and entertainment (including sports, music videos, news, cultural, and dramatic programming), not to mention breathtakingly clear pictures that look awfully good to a farmer used to watching Dan Rather, and precious little else, through a glass darkly. And who says viewing legislators in action can't be good entertainment—comedy and tragedy rolled into one.

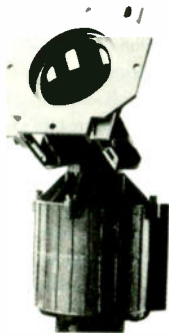
Robert Angus

Dealerscope Products of the Month

Nitec Debuts Antenna Positioner

Nitec Advanced Technologies presents the state-of-the-art in antenna positioners.

Nitec's Robot Antenna Positioner offers the only system that tracks international, C and KU-band satellites. The computer controller contains 16 pre-programmed satellite positions—32 in all. It is the only antenna controller to use azimuth and elevation data for pinpoint tracking.



Manual controls allow fine tuning adjustments, and a backup battery preserves all data in case of power outage. The solid die-cast aluminum body of the Robot positioner contains the high-precision actuator mechanism. It moves in a smooth 180 degree arc—the full above-the-equator range. The positioner will track any satellite to within 0.2 degrees of its precise location.



KLM Electronics Introduces the SBR-6100 Integrated System



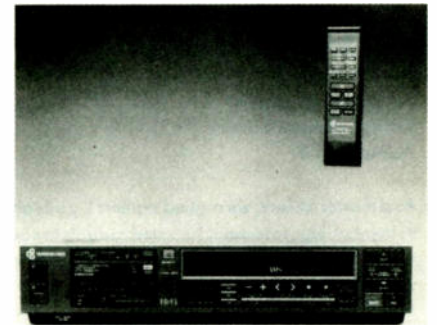
The KLM SBR-6100 is a totally new concept in system integration. It incorporates a micro-processor-controlled dish positioner, a synthesized stereo tuner, full-function remote controls, and total recall memory. The total recall memory gives direct access to any satellite-transponder combination automatically, and selects dish position, channel, skew, polarity, audio bandwidth, as well as stereo mode, all from a single remote control. Dual feed capability is an added plus with this receiver/positioner, providing enhanced performance in conjunction with ease of operation. For further information on the System-Complete, with the KLM SBR-6100 Receiver, contact your Distributor, or call 1-800-228-1926 or 1-800-336-7506 for the KLM representative nearest you.

Savoy Video Cassette Storage System



Samsung VT290T VCR Offers Hi-Fi Stereo

A 4 head video system and a 2 head hi-fi stereo audio system make the Samsung VT290T VHS format VCR a high quality audio/video tape deck. Its onscreen command system displays operating instructions on the TV screen, indicates which buttons to push, confirms the commands and memorizes them. Other features the VT290T offers include: 139 channel cable-compatible tuner with 16 present channels, 4 week/8 program timer, quartz clock, auto date and time recording.



This is Savoy model #782 video cassette storage system. This unit will hold 24 Beta or VHS cassettes, 12 in each drawer. The Savoy #782 is currently being sold at most department store chains and video stores. Savoy customer service number is 1-800-343-8140.



Dealerscope is the Marketing Magazine for
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INTEGRATED SEPARATE

I'M LOOKING FOR A RECEIVER THAT WILL TUNE FM, AM, TV audio, and video. The Technics SA-560 (and others) can tune TV audio in stereo, but when you change TV stations, you have to retune both it and the TV receiver itself. Jensen used to have a versatile model, but it wouldn't receive stereo TV audio. Is there a single unit that will do the whole job?

O. Gewinner
Crestwood, Mo.

Not that we know of, in a separate receiver. But a number of companies make integrated audio-video systems. The catch here is that you can't pick a video monitor or VCR that isn't part of the package; the advantage usually is that you get a single remote control that will handle the entire system. But don't go away mad. In so volatile a field, you may find just what you're looking for if you wait a couple of months.

REMOTE POSSIBILITY

RESPONDING TO BILL BRIERE'S LETTER IN THE March 1985 "Crosstalk," you suggest that L-pads be used for multiple speaker connection in different rooms. What about a speaker switching unit? Adcom sells one for about \$90 that is internally protected and provides much cleaner sound than a "volume control" L-pad.

Keith A. Lorenzetti
Auburn, N.Y.

As a matter of fact, we argued against L-pads and in favor of separate amplifiers and controls in each room, which we still think is the best way to go for serious listening in any of the rooms. If it's just a question of a multiroom background-music system, then we're not really talking high fidelity anyway. But you're right that there are some ingenious speaker control boxes around; Niles Audio and Russound are other brands that come to mind.

DOLBY, DBX TRACKING

FROM WHAT I'VE READ, IT APPEARS THAT THE DBX noise reduction system probably is, on the whole, the most desirable of those currently available to home recordists. I understand that the objections to it are that it rolls off the very lowest frequencies slightly, that it may have slightly more distortion at low and moderate signal levels than Dolby C does, and that it may have more tendency to "pump" or "breathe" on some types of program material. But I also understand that it allows more signal to be recorded than otherwise would be the case, has an audibly greater degree of noise reduction (approximately 10 dB more than Dolby C), and requires no attention to matching recording and playback levels for optimum performance. Is my understanding correct?

Also, I don't understand what is meant by "matching" the levels or how critical to

listening quality this process may be. Please elucidate.

Boyd H. Anderson, Jr.
Fort Lauderdale, Fla.

Some possible quibbles aside, you have summed up the DBX situation quite well. One essential difference between the Dolby noise reduction systems and DBX's is that the former behave differently at different input voltages and thus must be "calibrated," or matched, if the decoding (playback) is to precisely reverse the encoding (recording). The instantaneous voltage as the signal enters a Dolby encoder determines the treble boost to which it will be subjected before it is put on the tape. The voltage entering the decoder at the corresponding instant in playback must be identical if the de-emphasis is to match the pre-emphasis and if the overall encode-decode frequency response is to remain flat. On most home decks, the adjustments are all internal to the Dolby circuits and are set at the factory; they aren't affected by the level to which you turn your monitoring amplifier or where you set your recording levels.

Tape sensitivity is a significant part of the equation: The higher it is, the greater the deck's output voltage for a given input voltage. Within each tape type, individual brands can vary in sensitivity over a range of a few dB. This is enough to create encode-decode "mistracking" and thus may alter the apparent sound color of a recording, at least in careful listening. In its literature, Dolby Laboratories accepts much grosser departures from accurate playback. But I wouldn't consider some of Dolby Lab's expedients (like using a treble control to substitute for correct decoding of Dolby FM broadcasts) as constituting high fidelity reproduction. To my mind, that requires Dolby tracking (level matching) to within about ± 2 dB. Most decks contribute response peaks and dips that make finer adjustment more a question of theory than of audible practice. For optimum performance with Dolby C, I'd prefer one of the rare decks having some sort of tape-sensitivity compensation ("Dolby adjustment") in addition to bias and recording EQ controls. And in all cases, it's best to use a tape closely matching the tape for which the deck is designed and calibrated.

OMNIPATH

MY "OMNIDIRECTIONAL" ANTENNA ACTUALLY is constructed as a double dipole. One element faces a nearby mountain and the local pop/rock station, which deflects the meter on my receiver (a Marantz 2270) about 80 percent of full scale and sounds great. The other dipole faces Denver and my favorite classical station. It deflects the meter about 76 percent, but the signal usually is distorted and fuzzy, and the stereo indicator doesn't glow steadily. Yet my Walkman FM receives this station just as clearly as the others. What's going on?

Mork J. Glodava
Arvada, Colo.

We can only guess. It sounds as though your omnidirectional antenna is picking up lots of multipath on the Denver classical station, in which case you'd be better off with a rotating directional antenna to block out that station's reflection from your nearby mountain. You might also find that detuning the station slightly clears things up. What you say about the Walkman may just mean that its antenna (the headphone cord) isn't picking up the multipath. Or it may be that 76 percent deflection represents borderline stereo reception in your receiver.

ANTENNA SEARCH

IN THE JUNE 1985 "CROSSTALK," YOU MENTION an FM antenna called the Dennesen Polaris. Where can I buy it? And doesn't Sony also make a rotatable indoor antenna?

Michael H. Cameron
Austin, Texas

Because some of its products are quite audiophile-oriented, we would have suggested an "audio salon" as the best place to find the Polaris, but the company tells us the antenna enjoys much wider distribution and shows up in many TV outlets. So keep looking. Or write Dennesen Electrostatic (P.O. Box 51, Beverly, Mass. 01915) for the names of stores in the Austin area.

On trips to Japan, we've seen indoor FM antennas bearing the names of major electronics companies, but these products seldom seem to make it across the Pacific in any quantity. There also is a passive directional antenna called the Silver Ribbon that's sold by Magnum Electronics. Unlike it and the Polaris, the amplified omnidirectional models available from several companies can make some problems of urban reception worse instead of better.

UNSTYLISH STYLUS

THE MAIN CONSIDERATION WHEN I BOUGHT A Fisher/BSR 305XA turntable was that it would play 78-rpm records. I ordered a replacement stylus directly from Fisher, but my money eventually was refunded without explanation. I can only assume that Fisher no longer stocks styli for 78s. What do I do now?

Joseph C. Klinisky
Brooklyn, N.Y.

We don't know what sort of cartridge is in the BSR, but Pickering and Stanton are the only manufacturers we know of that offer 78-rpm styli for virtually all of their models—the 500, 600, and V15-2 Series, as appropriate in the two brands. Shure also has them for its V-15 cartridges, but your Fisher/BSR certainly didn't include a premium pickup of this kind. It might possibly be a Pickering for which you need only order the stylus, though in that case we would have expected Fisher to have ordered it for you. Otherwise, you'll probably have to buy a new cartridge and a 78 stylus to go with it.

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RADIO: THE INSIDE STORY

RADIO IS ABOUT AS CLOSE TO MAGIC AS WE COME IN everyday life (except maybe for television). And it's not necessarily the easiest thing in the world to explain or understand. But since a lot of your listening probably is or will be from FM, it's worth making the effort, if only to help you decide better what you do and don't need from a tuner or receiver.

"FM" stands for "frequency modulation," which is the only broadcasting technique now in general use that is routinely capable of high fidelity performance. But let's start with AM, or amplitude modulation, whose operating principles are more intuitive. An AM signal begins with a radio wave of an assigned constant frequency between 540 and 1,600 kHz (0.540 and 1.600 MHz). This is the carrier frequency, and as long as its amplitude is steady and unchanging (i.e., as long as it is unmodulated), it will produce no sound from your receiver.

To make sound, the carrier must be modulated by the desired audio signal. In AM, this is achieved by varying the amplitude of the carrier according to the amplitude of the audio: The louder the sound being transmitted, the wider the swings in the carrier level; the higher the frequency of the sound, the more rapid the fluctuations in the carrier level. The detector in an AM tuner simply ignores the very high frequency swings that comprise the carrier wave itself and responds only to the much lower frequency variation of the carrier's envelope, thereby stripping off the audio signal. In effect, the audio is just piggybacked onto the radio-frequency (RF) carrier at the transmitter and plucked off at the receiver.

The advantages of AM are that it is relatively inexpensive and that because the carrier is at a fairly low *radio* frequency, it has enormous range. AM's drawbacks are formidable, however. The main one is that RF noise from power lines and electrical storms causes annoying static. But there is also a serious frequency-response problem. AM channels are separated by only 10 kHz in the U.S., which causes whistles, or "birdies," to be produced at that frequency when transmissions on adjacent channels are received together. That makes a cutoff frequency below 10 kHz (or, in many cases, 5 kHz) almost a necessity.

FM is more costly than AM, and it operates at much higher frequencies (between 88.1 and 107.9 MHz), which significantly reduces its range compared with AM for a given transmitter power. But from the standpoint of fidelity, it holds all the cards: Noise is lower, frequency response extends all the way to 15 kHz, and immunity to electrical interference is inherently high. All of this follows from the fundamentally different way that FM puts audio onto a radio wave.

The FM band is split up into channels spaced 200 kHz apart. The nominal carrier frequency (the one you see on your tuner's dial or display) is at the center of the channel. For example, a station with an assigned center frequency of 88.3 MHz occupies a channel extending from 88.2 to 88.4 MHz; the next

allowable center frequency is 88.5 MHz, which defines an adjacent channel between 88.4 and 88.6 MHz; and so on. FM's basic distinguishing feature is that the amplitude of the carrier is unimportant except insofar as it determines a station's range. The carrier is therefore broadcast at a constant level.

It is not, however, broadcast at a constant frequency. Whereas in AM the audio modulates the amplitude of the carrier, in FM it modulates the frequency: The louder the sound being transmitted, the greater the deviation, up to a maximum of ± 75 kHz around the channel's assigned center frequency. The frequency of the audio signal therefore translates into the rate of change of the carrier wave's frequency. Clearly, this is a more sophisticated broadcasting scheme than amplitude modulation.

What I have described so far is the way a monophonic signal or the monophonic "baseband" of a stereo signal is broadcast. For stereo transmissions, the left- and right-channel signals ("L" and "R") must be matrixed to obtain the sum (L+R) and difference (L-R) signals. The L+R, which is simply mono, is broadcast on the baseband, so that compatibility is maintained with nonstereo radios. The difference signal is amplitude-modulated onto a 38-kHz subcarrier. This generates a lower sideband extending from 23 (38-15) to 38 kHz and an upper sideband from 38 to 53 (38+15) kHz. The subcarrier is then removed ("suppressed"), leaving the two sidebands frequency-modulated on the main carrier. A pilot tone at half the subcarrier frequency (19 kHz) is added to trigger the stereo demodulators in stereo tuners.

There are, however, a couple of real drawbacks to stereo FM. One is that in a frequency-modulation system, noise increases with frequency at a rate of 6 dB per octave. The high-frequency pre-emphasis applied to the audio signal before it is broadcast partially compensates for this effect, but it cannot correct the disproportionate noise contribution of the stereo difference signal, which is carried in the range between 23 and 53 kHz. When a tuner decodes a stereo signal, it simply dumps the extra noise from up there down into the audio range. For this reason, a tuner's stereo signal-to-noise ratio is always worse than its mono S/N.

The other big disadvantage of stereo FM is intimately related to the first: Because of the noise penalty, it takes more signal to get a given amount of quieting in stereo than in mono. Mono sensitivity is therefore always better than stereo sensitivity, which is the equivalent of saying that mono has more range than stereo. For that reason, almost all tuners are designed so that when the signal becomes too weak to sustain adequately quiet stereo, they switch into mono. Some tuners also include a blend option that enables you to trade some separation at high frequencies for lower noise, so that you can get listenable stereo on stations that would otherwise force you to revert to straight mono. ■



B Y

M I C H A E L

R I N G G U S



B Y

D A V I D

R A N A D A

HIGH FIDELITY VIDEO

MOST OF US TOLERATE VIDEO NOISE LEVELS, RESPONSE rolloffs, and distortions of various kinds in our TV sets and VCRs that, if translated into comparable sonic degradations, would make our music unlistenable. After all, having bright lights on while viewing is equivalent to running the vacuum cleaner while listening. Just as the latter destroys any sense of sonic realism, the former prevents full attainment of a high fidelity video image.

There's an oxymoron for you! How can any television image be genuinely realistic when the screen is flat and life is three-dimensional? Like photographs or films, TV pictures are only approximations, but they, too, can serve compelling artistic goals. For viewers who watch nothing but flatly lit sitcoms or soap operas, hard-sell commercials, and made-for-TV movies, a first-class video system may not be a good investment. But a well-mastered videodisc of a first-rate film or musical program seen on a high-resolution monitor or a large-screen projection television can have considerable visual and emotional impact—reason enough, I think, to seek the best possible video reproduction.

High fidelity video means performance up to the limits set back in 1958, when color TV was standardized in the U.S. The work of the National Television System Committee has been criticized often since then, but the simple truth is that few home components deliver performance that comes close to taking full advantage of what the NTSC video system can provide. In contrast to the audio field, where psychoacoustic considerations are only now becoming influential in the design of equipment, there is a long, detailed, and rigorous record behind the compromises in the NTSC system. The members of the committee did their job extremely well. Only very recently have a few high-resolution home monitors explored the outer limits of the NTSC format, making its true faults apparent, and even the best home VCRs have quite far to go before they reach that territory.

How will we know when they've gotten there? What are the criteria for judging video quality? Audiophiles speak of imaging, frequency response, and total harmonic distortion. Videophiles, too, have their argot. Most of these video terms will be explained in depth in future installments of this column, but here is a simple-language overview:

Detail. Are the edges of objects crisply defined? Are the tiniest features sharp? Are details preserved at the screen's edges as well as at its center?

Color accuracy. Are all the colors—not just the flesh tones—accurate portrayals of those originally picked up by the camera? (It's possible, but very rare—except in expensive studio monitors.) Do large expanses of color come out pure? What shade of white is used to generate a black-and-white picture?

Geometric distortion. Are circles truly circular and straight lines really straight? Do objects change shape as they move across the screen? Are parts of the image warped or otherwise misshapen? Is the pic-

ture correctly proportioned and centered on the screen? Is the image cut off at the edges before it should be?

Brightness-related distortion. Does the presence of one very bright spot on the screen cause the rest of the image to change shape? Do equally spaced gradations of gray actually appear that way? Is black truly black or merely very dark gray?

Noise. Is the screen filled with grainy snow or white or black streaks? Are large fields of color mottled?

Audio-related disturbance. Does the picture create interference with the sound channels, or vice versa?

Video fidelity has traditionally been evaluated by these criteria, which often masquerade under their jargonistic equivalents (resolution, chroma error, signal-to-noise ratio, etc.). The new technologies in future products and features probably will require additional methods of measuring performance. Such innovations certainly will be covered here, especially if they directly affect picture or sound quality.

Unfortunately, some of the most interesting developments in video do not necessarily advance the cause of video fidelity. They are instead used for convenience features. For example, the ability to store images in inexpensive integrated-circuit memories is not being employed to reduce picture noise or distortion. Rather, it is being applied to picture-within-picture TV sets and VCRs having visually perfect freeze-frame and fast-scan, nice features of probably limited use to most people. What good are the best efforts of television and film directors and cameramen if their work can be perfectly frozen or scanned but cannot be watched without a haze of video noise obscuring a picture that already is cut off at the sides by a too-narrow TV screen? (Moviehouse viewing is often no better, what with scratched and spliced 16mm prints poorly projected and loudly played over antiquated speaker setups.) To my mind, advanced technology should first be put to use to improve picture quality.

Fortunately, ideas for such improvements are in the advanced research stage. Digital television and VCRs promise the same freedom from signal degradation during reproduction, transmission, and copying as has been provided by digital audio products. And high-resolution analog video systems are near the point of international standardization, opening the way for correct wide-screen home playback of Cinemascope and Panavision films. But these technologies are still under development: We might have to wait for years. Meanwhile, if you have become acclimated to video reproduction of only average quality, you might be astounded at how good the present NTSC system can look. Noticeable improvements to picture quality are possible *today*, but they will come about only when there is sufficient demand for them—a demand that will arise from an awareness of the problems and the possibilities of video, to which this column is dedicated. ■

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Improving on the sonic performance of the Denon DCD-1800 was no easy task, considering that reviewers in the U.S., West Germany, and Japan claim "never to have heard a better sounding CD player." Yet Denon set out to build players that exceed our original performance level *and* make them more affordable.

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Better still is Denon's DCD-1100. This full-sized machine has the same high-performance DDAC, the same Real Time phase correction, and adds wireless remote control with a 10-key pad for direct track access.

The deluxe DCD-1500 uses two separate 16-bit DDAC converters (one for each channel), and computer-analyzed linear-phase filtration for perfectly flat frequency response. Its wireless remote even features volume adjustment.

Now, no matter how much or how little you plan to spend for a CD Player, you can own one from the first name in digital audio. Denon.



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In its glowing review, *Video Review* states that the Pioneer® Foresight™ 70 system “will probably serve as a benchmark for A/V systems of the future.” Here’s how they came to that conclusion.

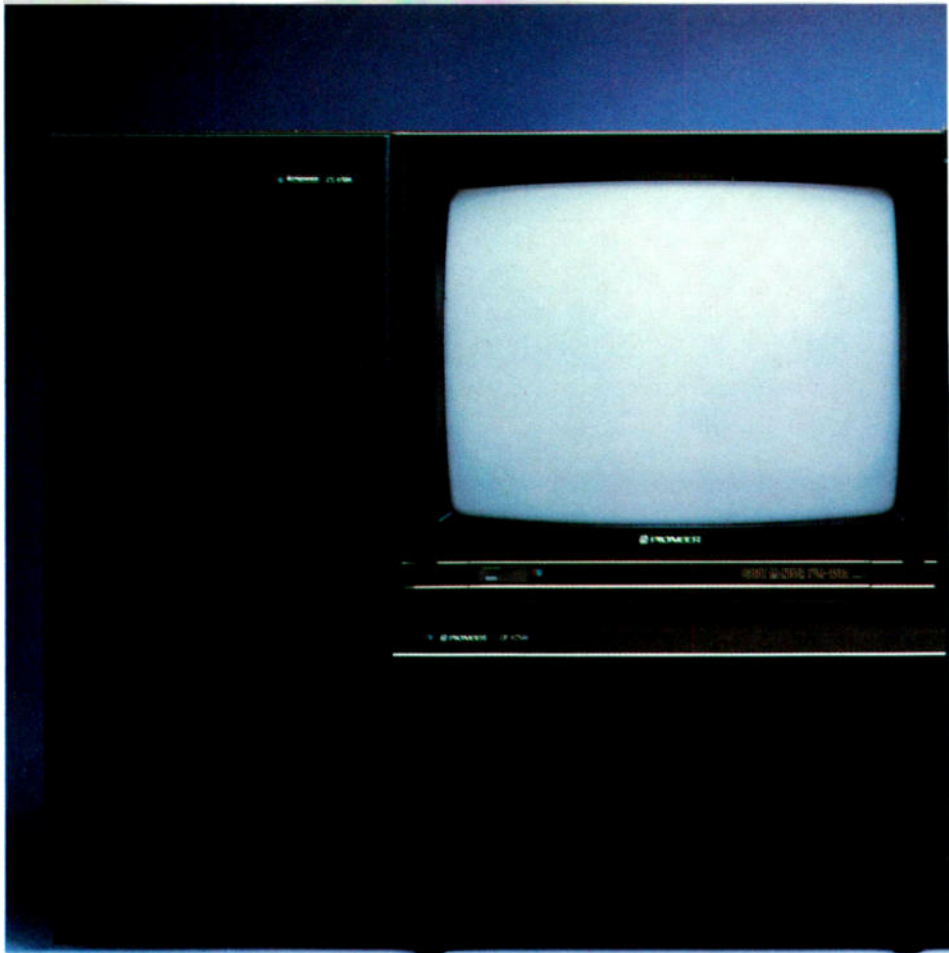
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All the video and audio technologies—the monitor, VCRs, double audio-cassette deck, TVAM/FM tuner, LaserDisc, CD, even the analog turntable—are controlled by one fully integrated remote control.* It’s so well thought out, it’s the first remote with a built-in LCD readout. So you can get all the information you need without having to turn on your CRT.

But the uniqueness of the Foresight 70 isn’t

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Video Review boasts that “the picture detail is nothing short of superb.” And for good reason. The comb filter in our monitor produces the exceptional frequency response of 5.0 MHz. This is far beyond the highest broadcast bandwidth, and results in 400 horizontal and 450 vertical lines of video resolution. The fact is, LaserDisc, delivering more than 350 lines of resolution, is the only video source that begins to let you fully appreciate the superb detailing.

VIDEO ISN’T JUST A MATTER OF LINES.

Did you ever notice that in most video systems, as you increase contrast the shapes distort? On

*except for the VHS Hi-Fi.



the Pioneer monitor, a highly regulated switching power supply makes that problem a thing of the past. Did you ever notice that on most video systems, there's a loss of detail around the edges of objects?

Our new contour-correction system solves that classic video problem, too. Did you ever notice that as you brighten the picture, the color saturation changes?

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With 0.09% distortion, our amplifier is as clean as digital sound itself.

If you're impressed by this, consider our 3-band tuner with a signal-to-noise ratio of 75 dB on the FM section. It's a tuner with built-in MTS decoding that delivers broadcast stereo or SAP or

both. It also allows you to split audio/video reception to receive FM simulcasts.

Consider a double auto-reverse audio-cassette deck with a dynamic range of 110 dB (with dbx). Consider a digital 8-mm VCR that delivers 88 dB of dynamic range on 6 stereo tracks, to provide a total of 24 hours of continuous digital music on one cassette about the size of a standard audio cassette.

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Consider a system that provides Surround Sound in four different processing modes: simulated and expanded stereo, theater, and stadium. It lets you tailor the audio ambience to the musical source, to give you the kind of audio depth and realism you've simply not heard at home before.

Last, consider a system that was designed to add luxury to your room. With components beautifully fitted and housed in rosewood cabinetry. (Even the extra set of Surround Sound speakers are in rosewood.)

FIRSTS, BETTERS, BESTS.

Given all the new technology operating in the Foresight 70, combined with such a high level of video and audio excellence, it's easy to understand why *Video Review* came to the

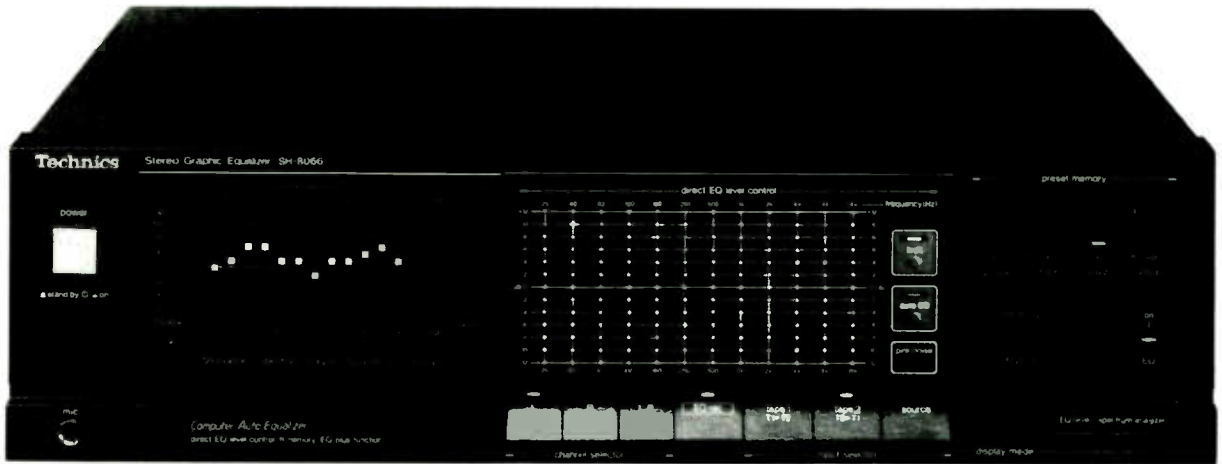
conclusion: "It's the kind of system that everyone's been talking about, but few manufacturers have been able to execute with such skill."

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PHOTOS BY NICK BASTIEN

THE TECHNICS SH-8066 GRAPHIC EQUALIZER/ANALYZER GIVES YOU FINGERTIP CONTROL OF YOUR SYSTEM'S RESPONSE. REPORT BEGINS PAGE 28.

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



ADVENT PRODIGY LOUDSPEAKER



JVC R-X370VB AM/FM AUDIO-VIDEO RECEIVER



ADS ATELIER P-4 TURNTABLE



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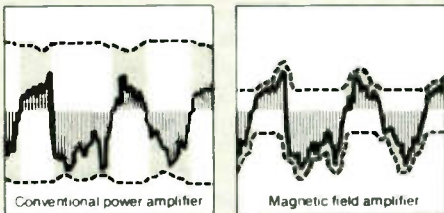
SONY D-7 PORTABLE CD PLAYER

MOBILE MUSICALITY.

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

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

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



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

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

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

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

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

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

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

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

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

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

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

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

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

Power Output Stereo Mode: (continuous RMS power output per channel, both channels driven, at 13.8 VDC input), 120 W into 4 ohms, 20 Hz to 20 kHz with no more than 0.15% THD.

Power Output Bridged Mono Mode: (Referenced to 13.8 VDC input), 240 W into 8 ohms, 20 Hz to 20 kHz with no more than .15% THD.

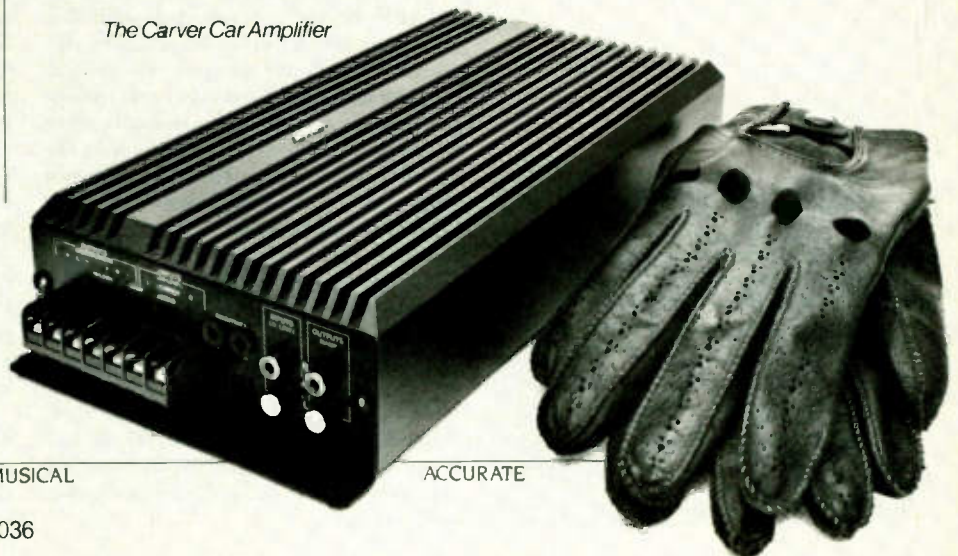
Input Sensitivity: Variable 250mV to 4V

Signal to Noise Ratio: (Referenced to 120 W, A weighted into 4 ohms) Greater than 100 db

Crossover: 115 Hz, 18 dB/octave

Weight: 4.7 lb.

The Carver Car Amplifier



CARVER

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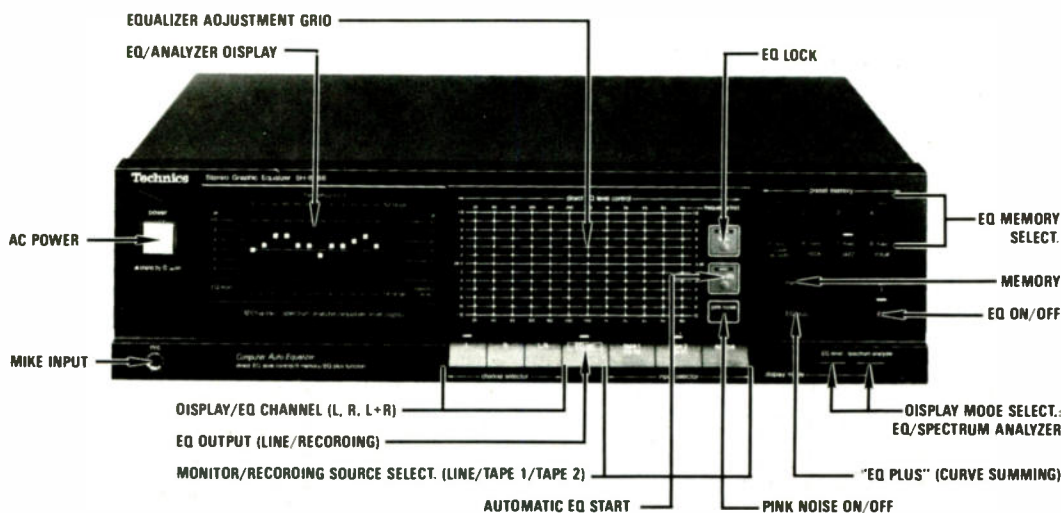
MUSICAL

ACCURATE

Carver Corporation, P.O. Box 1237, Lynnwood, WA 98036

Distributed in Canada by Evolution Audio

Technics SH-8066 Graphic Equalizer/Spectrum Analyzer



DIMENSIONS: 17 BY 4 1/4 INCHES (FRONT), 10 1/4 INCHES DEEP PLUS CLEARANCE FOR CONNECTIONS. **AC CONVENIENCE OUTLET:** ONE UNSWITCHED (150 WATTS MAX.). **PRICE:** \$450, INCLUDING RP-3800E MICROPHONE AND STAND. **WARRANTY:** "LIMITED," TWO YEARS PARTS AND LABOR. **MANUFACTURER:** MATSUSHITA ELECTRIC INDUSTRIAL CO., LTD.; U.S. DISTRIBUTOR: PANASONIC COMPANY, DIVISION OF MATSUSHITA ELECTRIC CORPORATION OF AMERICA, 1 PANASONIC WAY, SECAUCUS, N.J. 07094.

A MORE DESCRIPTION OF THE TECHNICS SH-8066's basic functions gives you no inkling of how special the unit is. Simply put, it is a 12-band graphic equalizer with separate sets of controls for each channel (the bands are an octave apart above 250 Hz, two thirds of an octave apart below that point). It also includes a pink-noise generator, a real-time spectrum display, and the ability to perform automatic analysis and correction of room response (via a supplied microphone). There are eight equalization memories (three of them preprogrammed, five for user storage) and a summing control that will let you combine curves.

These last few features already place the SH-8066 beyond the run-of-the-mill, but even they don't hint at what makes this equalizer/analyzer unique: the central touch-sensitive band-level control panel that lets you literally trace a response curve with your finger and immediately hear the result. The response obtained is shown graphically on the combination equalizer-level/spectrum-analyzer display. We found this level-setting faculty utterly uncanny the first time we tried it, in spite of being briefed by the product literature. Generally, if you know how the response curve should look for a given effect, you can create at least a rough approximation of the sound quality you want with a single motion of your hand. And even after the novelty wears off, the utility of the finger-controllable panel, for any relatively unfussy cut-and-try equalization task, remains.

For more precise adjustments, you can touch individual points on the control grid to achieve 2-dB increments of cut or boost, to a nominal maximum of 12 dB in either direction. The spacing between columns (representing the individual control bands) is wide enough for a finger, but the steps within each are so close together that a fingernail is needed if you want ultraprecise touch control; otherwise, you can move your finger until the illuminated display at the left shows you've reached the desired increment and then "let go."

Storing several "handmade" EQ curves is easy. The SH-8066 has, in effect, nine memories—the ninth being the settings you used when you last turned the unit off, which are restored when it is turned on again. When you switch off the SH-8066, it actually goes into a standby mode, retaining the information in the six programmable memories (the present status and the five user-programmable settings). If you plug the equalizer into a switched convenience outlet, turning off the host component will cut this standby power and erase the information, as will a power outage. There is no battery backup, and in fact, the standby mode is rated to draw about 3 watts, which would be a lot for a battery pack to handle for any length of time.

The equalizer can be hooked up in two ways, as suggested by the owner's manual (which is distinctly above average in its brief, clear, and simple explanations for the entry-level user). If you will be using it full-time (as

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The tweeters and midranges in these speakers are made of polycarbonate which combines low mass with

a high amount of internal damping. This results in wide, flat frequency response and superb off-axis dispersion for excellent sound reproduction of the mid to high frequency signals. This advanced design plus the addition of ferrofluid-filled dome tweeters also results in greater power handling. For example, the Phase Linear 6" x 9" handles 110 watts continuous, 250 watts peak power!

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GRAPHITE™

What you've been listening for.

a speaker equalizer, say), you may prefer to put it between preamp and power amp or at the equivalent jumper point on an integrated amp or receiver. When you want, you still can bypass the SH-8066's circuitry by means of its own front-panel controls or by turning it off. The other hookup method is the conventional one through a tape monitor loop.

Either way, you probably will want to piggyback your tape deck or decks on the SH-8066 so that you can equalize signals for recording. The owner's manual even includes recommendations for pre-equalizing tapes intended for playback on a car stereo system. And if you have two decks but no dubbing switch (or only a one-way switch) on your amp or receiver, the equalizer supplies it for you. In two respects, however, the SH-8066 may disappoint recordists: The automatic equalization function can't be used to compensate for incorrect bias or other misrecorded characteristics (because the built-in pink-noise generator is defeated unless the microphone is plugged in), and there is no provision for monitoring from the copy during deck-to-deck dubbing.

The touch control and neighboring display can be set for left channel, right channel, or both. In the last mode, the two channels are set identically, a useful feature that helps preserve accurate, stable imaging. You can introduce a difference by setting one side at a time; if you then revert to the two-channel mode, the display will show both, with the right-channel indicators dimmer than those for the left. When you switch the display to the spectrum mode, you can see either of the channels alone or the average of the two in each frequency band. The display then appears as a bar graph rather than isolated lights floating above the base line, and an extra-wide bar appears at the right of the display to show overall signal level.

To measure room acoustics, you plug in the mike, turn on the pink-noise generator, and watch the spectrum display. If you want, you can flatten response automatically at the touch of a button. The SH-8066 takes 16 sets of readings, averages them, derives the reverse setting, and enters it into Memory 5. If you want the average of a greater number of samples—including a series of listening positions—you can move the first result to another memory position and combine it with a later curve (or the sum of two or more later curves) by using the curve-adder function. Technics recommends that a high-frequency rolloff of 2 dB per octave be introduced above 2 kHz. We found it easiest to program this curve into one memory position and then add it to the automatic equalization as the last step.

Plots of the three preprogrammed curves (labeled for rock, jazz, and vocal) are shown in our data column. Frankly, we weren't impressed by how they sounded. This sort of equalization is precisely what one wants to do oneself. That's what a program equalizer is for: Its user is no more likely to accept an EQ setting supplied by the

manufacturer than one supplied by the record producer or whatever other signal-source arbiter may be involved. Which is to say that we satisfied our own taste better with our own curves—a conclusion that should surprise nobody. Perhaps Technics's curves are best used as starting points for user-customized EQ.

The nominal band-center frequencies and level increments are quite close to what Diversified Science Laboratories actually measured (an unusual occurrence, in our experience). The bands are placed somewhat closer together in the bass than in the treble, and the Q (that is, the ratio between the amount of boost or cut and the width of the affected frequency band) is greater in the bass. The intent doubtless is to give you more control in the frequency region where vagaries of speaker performance and room acoustics most demand it.

Still more surprising is the shape of the "families" of measured curves obtained by testing individual bands at all possible settings. While their symmetry and regularity are admirable, most striking is the similarity of the shapes of the peaks and dips at all boost or cut settings. This is a direct result of the unit's constant-Q filter design. A frequency band in a typical equalizer has more or less constant width as the amount of EQ is varied. But with the SH-8066, each band's control influences an ever wider frequency range as the control is moved away from "flat," thus preserving the shape of the peak or dip. This can be useful, for instance, when you want to make different, moderate adjustments in adjacent bands. With the usual design, the lesser of the two tends to be swamped by the other. Here, the constant Q helps preserve such subtleties. However, it also makes for a less smooth overall curve, as is demonstrated by the preprogrammed settings. This is particularly apparent in the bass, where the Q values are greater. (In general, if very smooth curves and precise control are your objectives, a sophisticated parametric might be a better choice than any fixed-band graphic equalizer—but it usually will come at a higher price and, for most home users, a considerable penalty in operating ease.)

Tests with the lab's calibrated pink-noise generator showed the spectrum analysis functions to be accurate, though not astoundingly so. The 8-kHz band, for example, tends to read one segment (2 dB) high, while the 100- and 160-Hz bands read one to two segments (2 to 4 dB) low. Unfortunately, this inaccuracy, plus a tendency of the instantaneous level to bounce about with pink noise (particularly noticeable, as always with such devices, at low frequencies), does influence the automatic speaker EQ.

Nonetheless, we got surprisingly good repeatability in that function with a single microphone position: The resulting curves matched each other (except, sometimes, for overall level, in which they could be as much as 4 dB apart) in most bands. And they sel-

OUTPUT AT CLIPPING (at 1 kHz)	8.6 volts
MAXIMUM INPUT LEVEL	≥ 5.8 volts (see text)
AUDIO GAIN	+ 1/4 dB (open circuit)
S/N RATIO (at 0.5 volt; A-weighted)	
worst case (see text)	74 dB
all controls flat	100 dB
HARMONIC DISTORTION (THD; 20 Hz to 20 kHz)	
at 2-volt output	≤ 0.021%
FREQUENCY RESPONSE	
	+ 0. - 1/4 dB, 16 Hz to 25.9 kHz
	+ 0. - 3 dB, < 10 Hz to 87.5 kHz
EQUALIZER ACTION (controls at max. & min.)	
PREPROGRAMMED EQUALIZATION OPTIONS	
CHANNEL SEPARATION (at 1 kHz)	83 dB
INPUT IMPEDANCE	20K ohms
OUTPUT IMPEDANCE	1,100 ohms



THE SH-8066 COMES WITH A MICROPHONE AND STAND THAT CAN BE USED WITH THE EQUALIZER'S BUILT-IN PINK-NOISE GENERATOR TO ANALYZE ROOM RESPONSE.

dom differed by more than 4 dB in those bands where a match wasn't achieved. More important, the results sounded good—which hasn't always been our experience with automatic speaker equalization. We started with good loudspeakers, and the equalization made little response alteration except in the bass, where it evidently took care of room modes. Interestingly, we preferred the sound without the recommended treble rolloff. When we repeated the room-EQ test with speakers that are much smaller and far less accurate, the results were similar but not as positive. Differences between trials increased somewhat, and occasionally the audio quality with the automatic settings struck us as distinctly poorer than that of the already marginal unequalized sound.

Of course, nobody says you have to accept the automatically determined settings as is. Again, the point of a user-adjustable equalizer is user adjustment. With a little fine-tuning, we were able to improve the

output from the little speakers, though we never made them sound great. The whole automatic adjustment process takes less than a minute (the actual time varies considerably, for reasons that escape us), so you can try (and reject) a lot of the analyzer's suggestions in relatively short order, even if you plan to touch up the final choice before storing it.

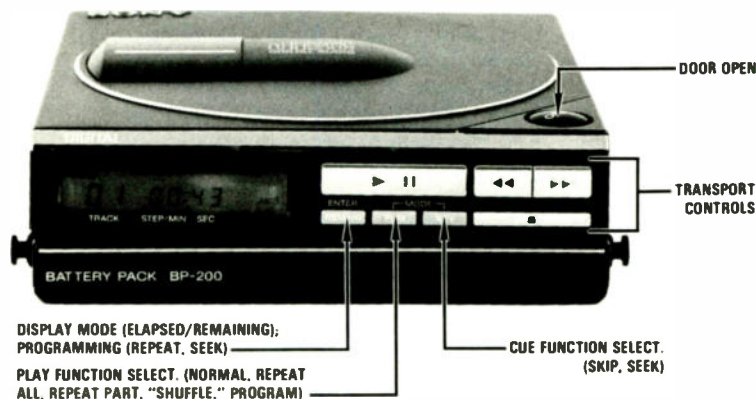
Output of the pink-noise generator, incidentally, measures 225 millivolts—call it a quarter-volt—and Technics recommends that you feed no more than 1 watt of it to your speakers lest its high energy at high frequencies (relative to overall level) burn out a tweeter. One watt of pink noise into an average bookshelf speaker is annoyingly loud anyway. Line-output level is limited by clipping at a little less than 10 volts, but is more than high enough to be of no concern. The worst-case 1-kHz input overload level (defined as producing no more than 1-percent total harmonic distortion plus noise at the

output) occurs with the 1-kHz control set to -2 dB—and, again, happens at a voltage too great to be of any concern. The worst result in the signal-to-noise (S/N) test, occurring with the six lower-frequency controls at the bottom of their range and the other six at maximum, also is at least acceptable.

In testing equipment like the SH-8066, however, it often strikes us that the point for most users may not be performance itself, though this model is at least as good in that respect as you have a right to expect, given the variety and usefulness of its features and the relatively moderate price. Considering how much you learn about how frequency response affects sound, and the enjoyment that can be derived in the process, perhaps the biggest dividends of the investment are to be found in the equalizer's educational value. But to whatever end, the Technics SH-8066's unique ability to accept a response curve traced on the front panel is at the heart of its value and fascination. ■

T E S T R E P O R T S

Sony D-7 Portable Compact Disc Player



DIMENSIONS: 5 BY 1 1/2 INCHES (FRONT), 5 1/2 INCHES DEEP. PRICE: \$300, INCLUDING ACCESSORIES. WARRANTY: "LIMITED," ONE YEAR PARTS, 90 DAYS LABOR. MANUFACTURER: SONY CORP., JAPAN; U.S. DISTRIBUTOR: SONY CORPORATION OF AMERICA, 1 SONY DR., PARK RIDGE, N.J. 07656.

SONY'S SECOND PORTABLE COMPACT DISC player, the D-7, is the first to officially bear the trademarked designation "Discman." Whether the name will catch on the way "Walkman" did remains to be seen. But judging from the popularity of the CD system, and from the D-7's performance, convenience, appearance, and price, Sony should be prepared for the word to become an almost generic term, like "xerox," "kleenex," "q-tip"—and "walkman." For in a very small space, the D-7 manages to incorporate the sound quality of a typical home CD player, all the standard cueing and scan-

ning features, 16-selection programmable playback, and an unobtrusive, easy-to-understand LCD readout.

The D-7 provides an astonishing degree of control using only seven pushbuttons on the front panel. Once the master power switch on the side of the unit is turned on, the large play key serves as the pause control on alternate pushes. The stop key also turns off the power, which can be reactivated by pressing the play key. The two track-skip buttons (Automatic Music Sensor, or AMS, as Sony calls them) also serve as scan controls when the "KEY" mode switch has been

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For outstanding video sound, nothing competes with the TX-RV47. For the first time, a true theater experience is possible to achieve at home. Dynamic Bass and Stereo Image Expanders boost low end response and greatly increase sound field spatiality. Monophonic video sound can be dramatically improved with our Simulated Stereo control. Finally, an innovative 4-Channel Matrix Circuit, which when used with two additional rear speakers, effects a "surround sound" experience from any stereo video soundtrack.

Onkyo's acknowledged leadership in amplifier design forms the foundation of the TX-RV47. It features True Low Impedance Drive Capability and Delta Power, insuring maximum dynamic range from any source. Superb FM performance and tuning convenience are Onkyo hallmarks that are also standard.

The TX-RV47 offers full input selectivity. There are 8 in all, allowing connection of 2 stereo VCRs, cable TV/FM, additional audio/video source, and full complement of audio products, all controlled by a full function wireless remote.

The TX-RV47 goes beyond conventional audio/video control to reach a new level in media system performance. Discover the audible—and affordable (under \$500)—difference today at your Onkyo dealer.

Artistry in Sound

ONKYO

200 Williams Drive, Ramsey, N.J. 07446

pushed. Two scan speeds are provided: The faster (available when the unit is in pause) mutes the output, whereas the slower one does not. The other mode control (labeled "PLAY") is used to choose standard playback, repeat playback of a selected segment of a disc, Shuffle Play (in which the tracks on a disc are played in random order), or programmed-memory playback. The enter/remain key enables you to choose the beginning and end points for repeat playback, to enter a track selected with the AMS buttons into memory, or, while the unit is playing, to display the remaining number of tracks and the total remaining time. The LCD otherwise shows the currently playing track and its elapsed time. It also has indications for playback mode, AMS/scan modes, and battery condition.

Unlike its predecessor (the Model D-5), the D-7 comes supplied with everything one needs for stationary or portable operation, including a rechargeable lead-cell battery pack (giving more than 4½ hours of playback time from a full charge), an AC power adapter/charger, a soft carrying case (with a rubberized exterior for a modicum of additional shock protection), a carrying strap that snaps onto the battery module, and a patch cord to connect the player's fixed-level line output to a component system. Most interesting of the accessories is the player-size battery pack: It snaps directly onto the bottom of the D-7, adding only ½ inch to the player height and approximately doubling its weight (the battery pack weighs 1 pound 3 ounces). Earlier portable-CD battery packs were either larger and heavier snap-ons or equally unwieldy carrying cases with rechargeable cells built in. An alternative battery case for the D-7, the EBP-380, holding eight alkaline AA cells that can power the player for three hours, is available for \$20. Additional BP-200 lead-cell packs also are available for \$45 each. No headset is supplied, but the D-7's jack is of the miniphone variety and will take most headphones directly or through an adapter.

Like the D-5, the D-7 exhibits a slight high-frequency attenuation (both channels are down by ½ dB at 7 kHz and by more than 1 dB at 20 kHz). The rolloff is easily heard on white or pink noise in a matched-level comparison with a player having measurably flatter response, but is not usually detectable with music, depending on how much sustained treble energy it contains. Also potentially audible is the unusually large pre-emphasis error, which computer calculations show could produce a total rolloff of more than 2 dB at 20 kHz when playing a pre-emphasized disc. Keep in mind, however, that these deviations are noticeable as such only in direct comparison with a player having flatter response. When used alone, the D-7 sounds just fine. Some might even prefer the high-frequency droop, as it may help tame edgy-sounding recordings.

The rest of the measurements made by Diversified Science Laboratories fall right

into line with data for current home players. Tests for output-level linearity, channel separation, distortion, and defect-tracking ability yielded consistently fine figures, or better. At 1.62 volts, the line-output level is a little lower than that of most home players (typically about 2 volts), but the difference should be of no consequence. The noise level is a bit high compared with that of many home units, but still inaudible in use. Also of absolutely no musical significance are the turn-on thump heard through headphones and the fact that the headphone volume control does not fully attenuate the output when turned all the way down.

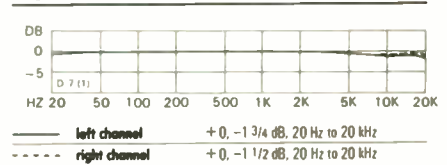
The characteristic that makes the D-7 such an intriguing product—its portability—is one not amenable to lab testing. So we suited up for the cold New York winter and took the Discman for a walk. The D-7 proved far more comfortable to carry than any of the other portable CD players we've examined, mainly because it is the smallest and lightest of them all, especially when configured for portable use. But even though it is relatively lightweight, the D-7 still feels massive. Slung over the shoulder, it forms a distinctly bulky presence, being larger and heavier than most Walkman-type portable cassette players. On the other hand, the D-7's sound quality is obviously better than that of the best portable cassette units. At the very least, there is no wow and flutter, no matter how much the Discman is jostled or vibrated when walking.

Naturally, there are limits to how much abuse the D-7 can withstand. We found that rapid descents via stairways into the New York subway system often would momentarily jolt the laser off track. When this happens, the sound mutes for a fraction of a second and usually picks up very close to where it left off. Subway rides, despite relatively high vibration levels, disturbed playback not at all. This bodes well for using the D-7 in a car, though digitally accompanied jogging is out of the question. We also found that the player is far less susceptible to mistracking if strapped on beneath a coat or a jacket. The extra layer of clothing evidently damps excessive player vibration and prevents the package from swinging away from the body and then hitting the hip, which seemed to cause most of the mistracking we heard in portable use.

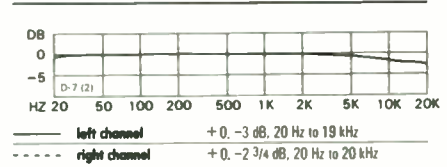
Wearing the D-7 does pose a few difficulties attributable to the control layout. Specifically, when the Discman is worn over the right shoulder in the position that permits reading of the front-panel labels, one has to reach back around the player to get at the volume thumbwheel. And the headphone cord emerges from near the volume control, possibly leading to encumbering entanglements. When the unit is worn over the left shoulder, these problems disappear. For large or gloved fingers, the thumbwheel may not project far enough (particularly when the carrying case is used), and it is located too close to one of the strap hitching posts

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

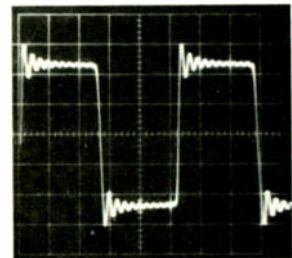
FREQUENCY RESPONSE WITHOUT DE-EMPHASIS



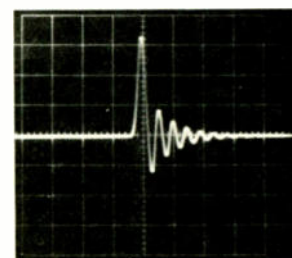
FREQUENCY RESPONSE WITH DE-EMPHASIS



CHANNEL SEPARATION (at 1 kHz)	88 1/2 dB
CHANNEL BALANCE (at 1 kHz)	±0 dB
S/N RATIO (re 0 dB; A-weighted)	
without de-emphasis	91 1/2 dB
with de-emphasis	98 dB
HARMONIC DISTORTION (THD + N; 40 Hz to 20 kHz)	
at 0 dB	≤ 0.21%
at -24 dB	≤ 0.059%
IM DISTORTION (70-Hz difference; 300 Hz to 20 kHz)	
0 to -30 dB	< 0.01%
LINEARITY (at 1 kHz)	
0 to -70 dB	no measurable error
at -80 dB	+ 1/2 dB
at -90 dB	+ 4 1/4 dB
TRACKING & ERROR-CORRECTION	
maximum signal-layer gap	800 μm
maximum surface obstruction	≥ 800 μm
simulated-fingerprint test	pass
MAXIMUM OUTPUT LEVEL	
line output	1.62 volts
headphone output	2.70 volts*
OUTPUT IMPEDANCE	
line output	440 ohms
headphone output	28 ohms
SQUARE-WAVE RESPONSE (1 kHz)	



IMPULSE RESPONSE



*Into an open circuit. Output is 1.42 volts into a 50-ohm load.

for easy manipulation. Finally, the other player controls are not accessible without the lid of the carrying case falling all the way open, a condition easily remedied with a rubber band. All this means is that you should "try on" a D-7 before you buy it to make sure that you'll be comfortable with

the way the controls are arranged.

But these matters need not concern you if you intend only to take advantage of the unit's small size and easy transportability. Sitting on a tabletop, attached to a component stereo system, the Sony Discman can hold its own in operating convenience and

sound quality against all but the full-bore ultraprogrammable, remote-controlled home Compact Disc players. With its battery pack removed, the already diminutive D-7 becomes an even more elegant, compact, and appealing demonstration of digital audio's sonic superiority. ■

T E S T R E P O R T S

Advent Prodigy Loudspeaker



DIMENSIONS: 13 1/2 BY 22 INCHES (FRONT), 8 1/2 INCHES DEEP PLUS CLEARANCE FOR CONNECTIONS. **PRICE:** \$299 PER PAIR. **WARRANTY:** "LIMITED," FIVE YEARS PARTS AND LABOR. **MANUFACTURER:** ADVENT, DIVISION OF INTERNATIONAL JENSEN, INC., 4138 N. UNITED PARKWAY, SCHILLER PARK, ILL. 60176.

WHAT ADVENT ALWAYS HAS DONE BEST is to make affordable loudspeakers that sound better (sometimes much better) than their prices would lead you to expect. The Prodigy follows in that tradition. It looks like a grown-up version of the Baby Advent (test report, June 1985), finished in black except for a cap and a front-trim piece of walnut-stained hardwood. The enclosure itself is made of particleboard, and the front baffle is inset slightly so that the dark-brown cloth grille mounts flush with the rest of the speaker's front.

Behind the grille are an 8-inch acoustic-suspension woofer centered on the lower part of the baffle and, above it and slightly to the left, a 1-inch dome tweeter. Diversified Science Laboratories' near-field measurements of the drivers' responses suggest that the crossover is in the vicinity of 2 kHz. Amplifier connections are made to color-coded spring clips in the back panel.

Advent's instructions are refreshingly specific on the subject of placement, recommending that the speakers be 12 to 18 inches off the floor and one to six inches from the wall behind them. DSL therefore performed its tests with the speaker on a 12-inch stand three inches from the wall. The resulting one-third-octave, room-corrected response curves are notably smooth and extended both on- and off-axis. Indeed, the similarity of the plots in the extreme treble is remarkable, with only a few dB of loss apparent off-axis. This indicates that the tweeter has very wide, smooth dispersion. The response does roll off in the deep bass, below 60 Hz or so, but this is to be expected from a speaker of the Prodigy's compact dimensions.

The speaker's impedance ranges from lows of 5.6 ohms at 20 and 150 Hz to a peak

of 23.6 ohms at the bass resonance frequency, 63 Hz. As our data column shows, the average is comfortably above 8 ohms, and we would expect any decent amplifier to perform well with the Prodigy. Difficulty might arise in some cases if a pair were operated in parallel with a set of low-impedance speakers, but we would expect it to be the exception rather than the rule.

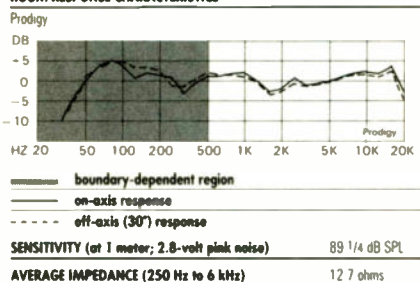
Sensitivity is about average, and in our 300-Hz pulse power-handling test, the speaker accepted without audible distress the full output of the lab's amp, equivalent to 27 dBW (496 watts) into 8 ohms, producing a calculated peak sound pressure level (SPL) of 116 1/4 dB. So the Prodigy should have more than enough dynamic range for any reasonable music lover.

The distortion measurements largely support this conclusion, particularly at moderate levels (90 dB SPL or less), where total harmonic distortion (THD) averages well under 1 percent from 100 Hz up. But at 100 dB SPL, the average distortion tops 2 percent, suggesting that the speakers may be uncomfortable if driven to high levels with continuous tones. Fortunately, music typically contains little material of this nature.

We set up the Prodigies in our listening room according to Advent's directions, a few inches from the wall behind them on stands. The resulting sound was clean, very smooth, and a little on the warm, mellow side. We found this balance quite agreeable, particularly on recordings that can sound rather edgy when played through some other, brighter speakers. As the response curves imply, the extreme bottom of the audio range is missing, but this is not an issue for most music. Clarity and stereo imaging are good, although the razor-sharp focus characteristic of speakers that excel in these qualities is not quite there.

By any standard, the Prodigy is a good speaker, but its price and appearance make it an excellent value besides, altogether worthy of the Advent name and tradition. ■

ROOM RESPONSE CHARACTERISTICS



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Yamaha's newest high-end CD player has a split personality. In its CD-2000M version, with rack-mount adaptors and balanced line outputs with XLR connectors, it fits right into recording studios and broadcast applications.

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tures, both have some unexpected ones. Like variable output level to correctly match the output level with other system components, and act as a remote volume control. Gold-plated connectors. And full-control wireless remotes.

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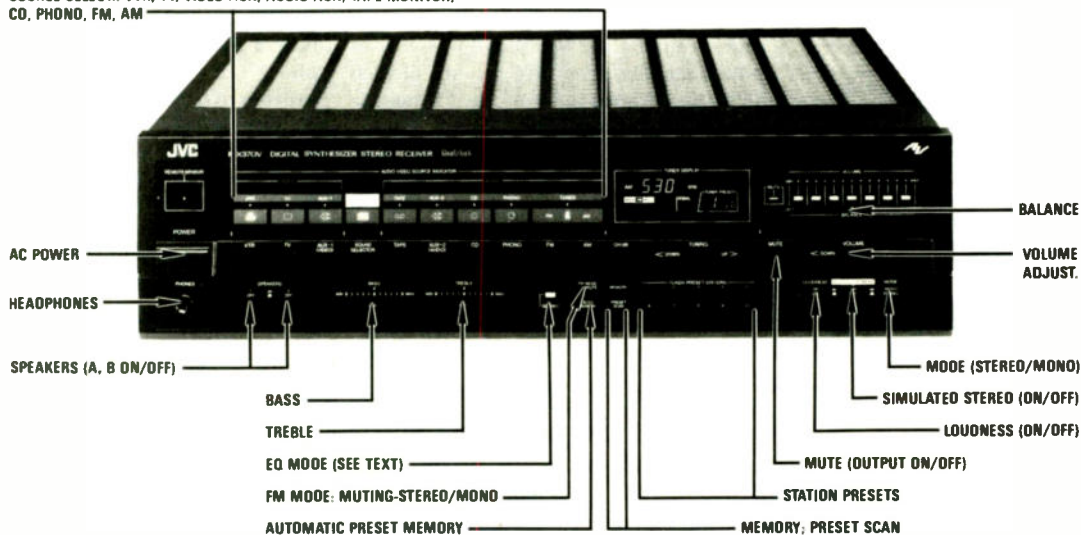
*Suggested Retail Price.

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

 **YAMAHA®**

JVC R-X370VB AM/FM Audio-Video Receiver

SOURCE SELECT: VTR, TV, VIDEO AUX, AUDIO AUX, TAPE MONITOR, CD, PHONO, FM, AM



DIMENSIONS: 17 BY 4 1/4 INCHES (FRONT), 12 INCHES DEEP PLUS CLEARANCE FOR CONNECTIONS. **AC CONVENIENCE OUTLETS:** TWO UNSWITCHED (150 WATTS MAX. TOTAL). **PRICE:** \$350, INCLUDING RM-370 WIRELESS REMOTE CONTROL. **WARRANTY:** "LIMITED," TWO YEARS PARTS AND LABOR. **MANUFACTURER:** VICTOR COMPANY OF JAPAN, LTD., JAPAN; **U.S. DISTRIBUTOR:** JVC COMPANY OF AMERICA, 41 SLATER DR., ELMWOOD PARK, N.J. 07407.

IT SEEMS THAT NO ONE DEFINITION OF AN "audio-video receiver" will serve for more than a few of the available models. Anything called a receiver should embody the functions of tuning, processing (volume and tone controls in an audio-only receiver), and source switching. But an audio-video receiver covering all three for picture signals will probably duplicate some capabilities already present in the systems for which they are bought. Such units are accordingly rare. The most popular combination of functions seems to be that embodied in the JVC R-X370VB.

Although it has neither TV tuning nor video processing, the R-X370VB does include picture and stereo-sound connections and switching for a video recorder (inputs and outputs), "TV" (inputs), aux (inputs), and monitor (picture output only). Actually, the video (or, more correctly, audio-video) aux is labeled Aux 1; an input in the audio-only group is Aux 2. Also among the audio selectors is the monitor switch for the receiver's single tape loop. If you're using the receiver for audio purposes only, you can sim-

ply ignore the video functions. For video, you press one of the three video selectors (TV, VTR, or aux). For a simulcast (or any other application in which the audio derives from a different source than the video), you then use the audio selectors and press FM (or whichever audio source you need). This leaves the picture source unchanged but overrides the previous choice for the audio. It's very neat, and (best of all) it works so intuitively that you tend to remain unaware of how clever the switching really is.

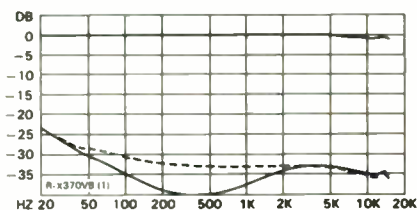
Another wrinkle is associated with the preamp-out/amp-in jumpers on the back panel. They're labeled "S.E.A."—JVC's designation for its own graphic equalizers—though other brands and other types of processors can be put in the loop. From the front panel, you can switch the audio-tape output to either precede or follow the processor loop, so that either the signal to be recorded or that from playback is altered. We hope to see more of this sort of wiring, because the function so often is omitted from all but the most expensive processors.

The receiver does contain one audio processing mode best used in conjunction with video signals. That feature (somewhat misleadingly labeled "acoustic expander") introduces a gradually increasing interchannel phase shift with rising frequency to simulate stereo from mono sources or to exaggerate stereo effects. As measured at Diversified Science Laboratories, it introduces no phase

FM TUNER SECTION

All measurements made with QSC off.

FREQUENCY RESPONSE & CHANNEL SEPARATION



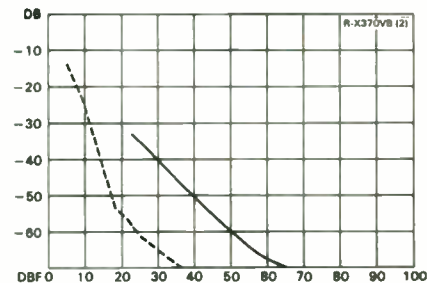
Frequency response

— left channel	+0, -1 1/2 dB, 20 Hz to 15 kHz
- - - right channel	+0, -1 dB, 20 Hz to 15 kHz

Channel separation

	≥ 32 1/2 dB, 250 Hz to 15 kHz
	≥ 23 dB, 20 Hz to 15 kHz

FM SENSITIVITY & QUIETING



stereo quieting (noise)

mono quieting (noise)

Stereo sensitivity (for 50-dB noise suppression)

39 3/4 dBf at 98 MHz, with 0.56% THD + N
(39 1/2 dBf at 90 MHz, 38 3/4 dBf at 106 MHz)

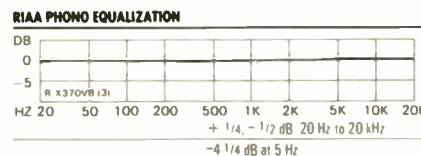
Mono sensitivity (for 50-dB noise suppression)		
	17 1/2 dBf at 98 MHz	
Muting threshold	23 dBf	
Scan threshold	35 1/2 dBf	
Stereo threshold	23 dBf	
Stereo S/N ratio (at 65 dBf)	69 1/2 dB	
Mono S/N ratio (at 65 dBf)	74 dB	
CAPTURE RATIO		
	1 dB	
SELECTIVITY		
alternate-channel	58 1/4 dB	
adjacent-channel	63 3/4 dB	
HARMONIC DISTORTION (THD+N)		
	stereo	mono
at 100 Hz	0.43%	0.11%
at 1 kHz	0.32%	0.12%
at 6 kHz	0.32%	0.13%
STEREO PILOT INTERMODULATION		0.32%
INTERMODULATION DISTORTION (mono)		0.06%
AM SUPPRESSION		64 dB
PILOT (19 kHz) SUPPRESSION		71 1/2 dB
SUBCARRIER (38 kHz) SUPPRESSION		93 1/2 dB

AMPLIFIER SECTION

RATED POWER		17 dBW (50 watts)/channel
OUTPUT AT CLIPPING (at 1 kHz; both channels driven)		
8-ohm load	17 3/4 dBW (60 watts)/channel	
4-ohm load	18 1/2 dBW (71 watts)/channel	
DYNAMIC POWER (at 1 kHz)		
8-ohm load	18 3/4 dBW	
4-ohm load	19 1/2 dBW	
2-ohm load	see text	
DYNAMIC HEADROOM (re rated power; 8-ohm load)		+1 3/4 dB

HARMONIC DISTORTION (THD; 20 Hz to 20 kHz)	
at 17 dBW (50 watts)	≤ 0.152%
at 0 dBW (1 watt)	≤ 0.066%

FREQUENCY RESPONSE	
	+0, -1/4 dB, < 10 Hz to 25.4 kHz
	+0, -3 dB, < 10 Hz to 85.6 kHz



difference at 20 Hz, a 90-degree offset at 620 Hz, and about 180 degrees (the maximum) at 10 kHz. The owner's manual (which is decidedly below the standard of JVC's best) claims that it "turns mono sound into believable stereo and stereo into incredible stereo." That wording is a mite hyperbolic, but we recognize the utility of such a feature under some conditions, especially with mediocre mono video sound.

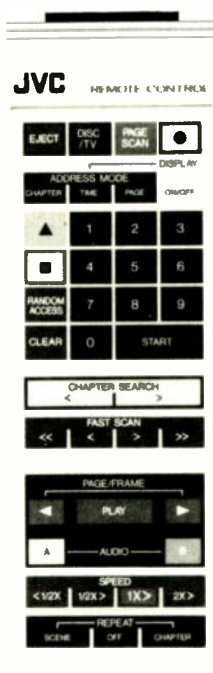
The tuner section is more than minimally accoutred. In addition to ten presets (each of which can memorize one frequency from each band), it provides automatic preset memorization (which stores "receivable" stations, with switchable manual override, while scanning the band) and preset scan (which samples about five seconds of each memorized station in turn). The FM mute is tied to the stereo-reception mode (on for stereo, off for mono), but there is a separate mono/stereo switch that affects the entire preamp section. Using it, you can get mono-only reception with muting, but (as with many other moderate-price receivers) you

still can't get stereo reception while the muting is defeated. The supplied AM loop antenna must share a ground connection with the phono wiring, whose signal leads plug in several inches away, an inconvenient arrangement for both inputs.

Tuning (which is manual only, aside from the presets and the preset scan) proceeds in half-channel (100-kHz) steps on the FM band and in full-channel (10-kHz) steps for AM. During the process, the readout panel shows both the tuned frequency and the signal strength—the latter both in graphic form (a sort of three-position semaphore arm whose angle suggests input level) and numerically, in nominal dB. When you tune a memorized frequency, the semaphore remains, but the digital readout switches to the memory number.

The numerically displayed signal-strength steps are only a few dB apart for weak signals, although the readout shows a 5-dB increment for each step. For example, a 37 3/4-dBf input shows "20 dB" on the readout, while a 41-dBf input reads "25 dB." At an indicated 40 dB (47 1/2 dBf), the semaphore switches from its low position (3 o'clock) to its middle one (2 o'clock); at 60 dB (61 1/2 dBf), it moves to high (1 o'clock). Even using the numerical readout, we found that the display's sharp switching action limited its usefulness as an aid to orienting a rotating antenna, although the many, closely spaced steps toward the bottom end of the scale compensate for this problem to some extent.

The tuner section's basic performance is typical of today's receivers. We would expect no better of an audio-only model at this price, and much the same can be said of the phono preamp. The amplifier section supplies more than minimal power for such a receiver, though distortion is a little higher than usual and contains greater quantities of the upper harmonics than we're used to seeing. With 2-ohm loads, the R-X370VB seemed to go into compression on the pulses used for the dynamic power test. With no unequivocally visible clipping denoting overload, the lab would state only that the dynamic power into that load is no more than 18 3/4 dBW (75 watts). The receiver uses



THE R-X370VB'S VERSATILE WIRELESS REMOTE CONTROL CAN ALSO BE USED WITH CERTAIN JVC VIDEO COMPONENTS.

TONERARM/CARTRIDGE MATCHING GRAPH

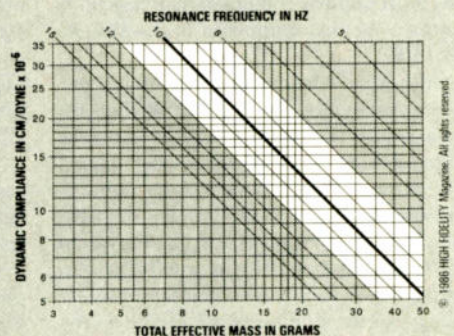
By means of this nomograph, you can quickly and easily determine the compatibility of any cartridge and tonearm we have tested. Ideally, the arm/cartridge resonance frequency (indicated by the diagonal lines) should fall at 10 Hz, but anywhere between 8 and 12 Hz will assure good warp tracking and accurate bass response. (It is usually okay to let the resonance rise as high as 15 Hz, although we don't normally recommend this.)

Begin by looking up the weight and dynamic compliance shown in the cartridge report and the effective mass listed in the turntable or tonearm report. Add the weight of the cartridge to the effective mass of the tonearm to get the total effective mass. Then find the point on the graph where the vertical line for the total effective mass intersects the horizontal line for the cartridge's dynamic compliance. For a good match, this point should fall in the white region, between the 8- and 12-Hz diagonal lines.

You can back-figure compliances and effective masses for cartridges and tonearms tested before we began reporting these figures directly (in January 1983). For cartridges, look up the vertical resonance frequency (measured in the SME 3009 Series II Improved tonearm) and the cartridge's weight. Add 15 grams (the SME's effective mass) to the cartridge weight to get the total effective mass. Then find the intersection of the vertical line representing that mass with the diagonal line representing the measured resonance frequency. Now you can read off the compliance from the horizontal line passing through the point of intersection.

For tonearms, look up the vertical resonance frequency as measured with the Shure V-15 Type III cartridge. Find the intersection of the diagonal line for that frequency with the horizontal line representing the Shure's dynamic compliance of 22.5×10^{-6} cm/dyne. Reading down the vertical line on which the point of intersection lies will give you the total effective mass of the arm with the Shure V-15 Type III mounted in it. Then subtract 6.3 grams (the weight of the V-15 Type III) to get the tonearm's effective mass.

Because of differences in measurement techniques, manufacturers' specifications for compliance and effective mass often differ from our findings and may therefore yield inconsistent results if used with this graph.



a series hookup for dual speaker pairs. This protects the amplifier from low-impedance loads but at a potential price in fidelity if you decide to use both speaker pairs at once.

This receiver really comes into its own, however, when it is used in conjunction with video equipment—and, most especially, with any of the JVC monitor/receivers (11 models are listed in the literature that accompanied our test sample) that can be controlled from the supplied RM-370 wireless remote. The hand unit requires three AAA cells (the receiver itself needs two AA cells to retain its preset memories) and is quite light and comfortable to hold despite its 8-inch length. The pressure-sensitive controls (whose labeling can be changed somewhat via a stick-on overlay, depending on which of two groups of receivers your model belongs

to) encompass not only all the major faculties of the receiver but also TV channel selection and VCR recording, play, pause, and fast-wind functions.

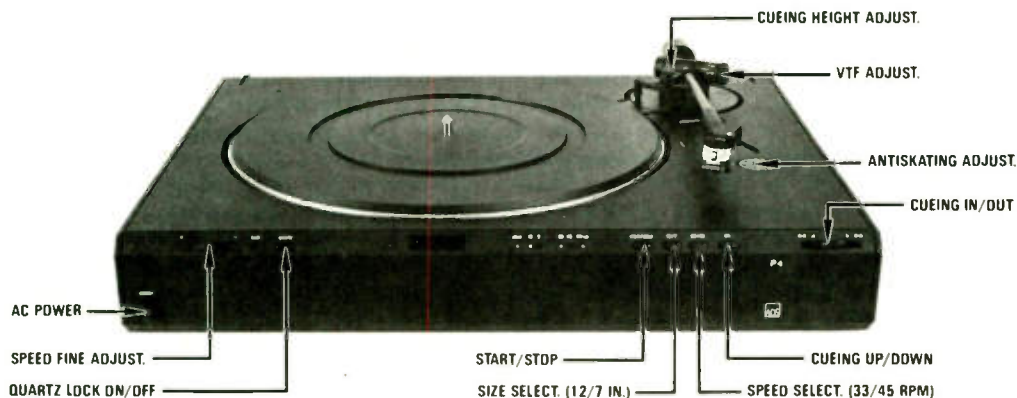
Thus, with an all-JVC system of appropriately chosen models, you can run almost the entire works from your listening/viewing easychair. You can change radio stations, adjust volume (or mute it altogether—JVC doesn't misuse the term to mean an output reduction of only 20 dB), play a Compact Disc, switch to television or videotape, or do nearly anything else except alter the audio-mode settings or tone-control adjustments. But whether you go all-JVC or use this receiver in a mixed-brand system, its control scheme strikes us as admirably thought-out. And in performance, you won't find it easy to do better for this type of receiver. ■

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

	sensitivity	S/N ratio
aux input	28.0 mV	84 dB
phono input	0.36 mV	72 1/2 dB
PHONO OVERLOAD (1-kHz clipping)		130 mV
INPUT IMPEDANCE		
aux input	46k ohms	
phono input	50k ohms, 120 pF	
OUTPUT IMPEDANCE (to tape)		
from aux input	265 ohms	
from tuner section	2,300 ohms	
from phono input	685 ohms	
DAMPING FACTOR (at 50 Hz; re 8 ohms)		50
CHANNEL SEPARATION (at 1 kHz)		57 dB

T E S T R E P O R T S

ADS Atelier P-4 Turntable



DIMENSIONS: 17 1/4 BY 14 1/4 INCHES (TOP), 4 1/4 INCHES HIGH WITH COVER CLOSED; ADDITIONAL 10 1/4 INCHES VERTICAL CLEARANCE AND 1/2 INCH AT BACK REQUIRED TO OPEN COVER FULLY. PRICE: \$499. WARRANTY: "LIMITED," ONE YEAR PARTS AND LABOR. MANUFACTURER: MADE IN GERMANY FOR ANALOG & DIGITAL SYSTEMS, INC., ONE PROGRESS WAY, WILMINGTON, MASS. 01887.

ALTHOUGH IT WILL FIT NICELY INTO ANY system, the P-4 automatic turntable clearly is designed primarily for use with ADS's own Atelier line of components, whose size and styling it matches perfectly. The look is clean, subdued, and rather European (very nice, in our opinion), and the performance is just what you'd expect from ADS, which is to say, quite good indeed.

The core of the design is a brushless DC direct-drive motor that can be quartz-locked exactly to either 33 or 45 rpm. Front-panel LEDs indicate the current speed and whether or not it is locked, and there is a built-in strobe you can look at to determine whether the speed is accurate. Or if you prefer, you can defeat the servo control and manually adjust the speed within a range of approxi-

mately ± 4 percent of its nominal setting.

The company says that it paid particular attention to keeping the turntable quiet and free of feedback. Achieving the first goal mainly requires a good motor, but the design of the suspension system also is important here, as it is in rejecting feedback and external shock. In the P-4, the motor and tonearm are mounted on a rigid subchassis that is attached to the base by four tuned shock mounts. Although it is not as effective as some of the softly sprung subchassis suspensions we have encountered, it is distinctly better than most other relatively stiff systems. We were not able to induce acoustic feedback under any remotely reasonable conditions, and the suspension was better than average (though less impressively so) in

SPEED ACCURACY (105 to 127 VAC)	
no measurable error at either speed	
SPEED ADJUSTMENT RANGE	+3.8% to -4.2%
WOW & FLUTTER (ANSI weighted peak)	
average	≈ ±0.050%
maximum	≈ ±0.065%
TOTAL AUDIBLE RUMBLE (ARLL)	≈ -70 1/2 dB
EFFECTIVE TONEARM MASS	≈ 19 grams
VTF-GAUGE ACCURACY	
within 0.1 gram from 0.5 to 2.5 grams	
TOTAL LEAD CAPACITANCE	135 pF

its handling of strong jolts to the base or the table on which it was placed.

The tonearm is a rigid aluminum tube, dynamically balanced in all planes, which means that, theoretically, you should be able to play records with the turntable on its side or upside down. Practically speaking, it relieves you of having to worry about getting the unit accurately leveled (a necessity with static-balance arms). You simply balance the arm and dial in the desired tracking force, which is applied by a spring. As Diversified Science Laboratories' measurements show, the spring is very accurately calibrated. The counterweight is elastically decoupled from the arm tube to damp resonances and comes with two accessory weights that can be screwed into it to balance heavy cartridges. In practice, you almost have to use at least one of these weights (which is for pickups

weighing between 2 and 6 grams), and in most cases, you will get best results with both of them in place. DSL needed both to balance the Shure V-15 Type III cartridge we use for our testing.

Cartridges mount in the conventional way to a detachable headshell. ADS provides a cartridge alignment gauge, and the height to which the lift raises the arm is adjustable by means of a simple thumbscrew. The company says it has taken great pains to ensure that when positioned properly in the arm, the cartridge will be in correct geometrical alignment with the record for minimum distortion due to lateral tracking-angle error. We found setup straightforward, though not as easy as it would have been with a P-Mount design. The offsetting advantage is that many good pickups are available that do not provide for the P-Mount standard, making conventional tonearms, such as that on the P-4, more versatile.

Antiskating compensation is adjusted by setting a dial on the top plate to the right of the tonearm, calibrated for both spherical and elliptical styli. The force itself is applied by a motor attached to the tonearm. This same motor moves the arm in and out above the record surface during cueing, which is controlled by a rocker at the far right of the front panel. Pushing the rocker to the left or right raises the arm and moves it in the designated direction. The speed of the arm's motion is determined by the amount of pressure on the rocker: very slow for a light push, faster for a hard one. When the arm reaches the desired point, you release the rocker and press the lift button to lower the stylus back into the groove. This kind of system tends to be slower and perhaps a little less precise than one in which you raise the arm and move it by hand (which you still can do with the P-4), but it enables you to perform the entire cueing procedure with the dust cover down—a real convenience sometimes.

In fact, all of the operating controls are outside the dust cover for easy access. They include speed and disc-size (7 or 12 inches) selectors with associated LED indicators

that tell you the current settings. There also are arm-lift and start/stop buttons. The latter is for starting the automatic play cycle—turning the platter, raising the arm and cueing it to the record's outer groove, and returning the arm to its rest at the end of the side and shutting off the motor—or for halting play, returning the arm, and stopping the motor. The entire system works very well, our only reservation being that we could find no way to spin the platter without activating the automatic start sequence. So to clean a record before playing it, you must hit START and then LIFT to keep the stylus off the disc while you wipe it.

As we've said, the P-4's performance is of a high order. Speed is dead-on when the quartz lock is engaged, the wow and flutter figures are very low, and the rumble measurement is among the best DSL has obtained using a lacquer test disc. This last prompted the lab to repeat the rumble test with a Thorens Rumpelmesskoppler, which links the stylus to the platter by means of a precise, low-friction bearing, to see if the measurement was being limited by the disc. And indeed, the figures did improve by a couple of dB. Tonearm lead capacitance is about right for today's cartridges and phono preamps, but the arm's effective mass is on the high side (at least in the configuration we used for the test), which means that you probably will get best results with a light-weight or low- to medium-compliance pickup (or one with a damping system).

If you own or are planning to buy an Atelier system, we see little reason to look beyond the P-4 for a turntable. It gives you first-class performance (particularly for an automatic), good looks, easy operation, and, through its on-board microprocessor, an interface for ADS's remote control system. Plus you can stack it on top of your other components. But there is no reason to exclude the P-4 from mixed-brand systems. The same virtues (except, perhaps, stackability) pertain, making it a serious contender against all comers among high-quality automatic turntables. ■

T E S T R E P O R T S

Tatung VRH-8500U VHS VCR

DIMENSIONS: 17½ BY 4½ INCHES (FRONT), 14½ INCHES DEEP PLUS CLEARANCE FOR CONNECTIONS. **PRICE:** \$600. **WARRANTY:** "LIMITED," ONE YEAR PARTS, 90 DAYS LABOR. **MANUFACTURER:** TATUNG CO., TAIWAN; **U.S. DISTRIBUTOR:** TATUNG COMPANY OF AMERICA, INC., 2850 EL PRESIDIO ST., LONG BEACH, CALIF. 90810.

THE TATUNG VRH-8500U IS THE FIRST NON-Japanese videocassette recorder we've tested. It is instead from Taiwan, which (along with Korea) is responsible for an ever increasing share of the electronic entertain-

ment products available in the U.S. Unlike other VCRs we've reviewed recently, the VRH-8500U provides neither Hi-Fi nor stereo edge-track audio recording capability, but these omissions are reflected in its



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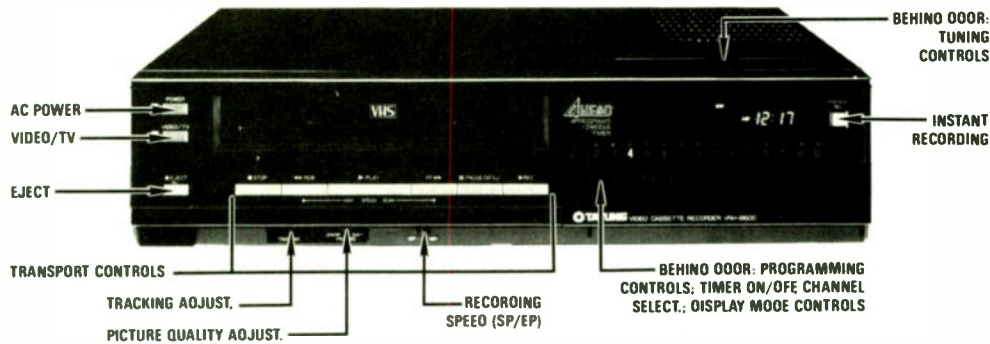
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relatively low price. It records at the two outer VHS speeds—SP and EP—and will play back tapes recorded at the intermediate LP speed as well. There are four video heads on the rotating drum: one pair for EP and a separate pair for SP. This approach permits full utilization of the tape at the faster speed, for better response and lower noise.

Video special effects are confined to forward or backward scan at seven times normal speed (for as long as you press **FAST FORWARD** or **REWIND** while in the play mode) and still-frame/frame-advance (activated by **PAUSE** and repeated presses thereof). If you hold down **PAUSE** during playback, the picture keeps advancing frame by frame, giving a (very) slow-motion effect. Outside of a few noise bars and (occasionally) a slight amount of "tearing," these features perform their functions reasonably well.

Modes are displayed on a fluorescent indicator, and a motorized system aids in loading a cassette through the front doors (which automatically turns the deck on). You select recording speed with a small, rather hard-to-reach slide switch beneath the transport controls. Playback speed is chosen automatically, but during neither recording nor playback is there any indication of the speed being used—a minor inconvenience. Detented sharpness and tracking wheels are to the left of the recording-speed selector (and are even more difficult to manipulate than the speed switch when the deck is flat on a table).

The tuner covers 105 channels, including VHF Channels 2 through 13, cable Channels I through W, and all 70 UHF channels (14 through 83). Fourteen channels can be logged into memory; the deck comes with all VHF channels pretuned and the two extra slots assigned to the UHF band. You can reassign the presets with controls hidden under a door on the top cover. For each preset, there's a tiny thumbwheel and an even smaller three-position switch that sets the thumbwheel range to the low-VHF, high-VHF, or UHF band. (Tuning provides a small screwdriver for operating the switches.) Each wheel has a little indicator that gives some idea of where you are in the range. As delivered, the presets were very accurately tuned.

Controls for setting the clock and the two-week/four-event programmer lie behind a door beneath the display. The channel up/down buttons on this panel also

serve as a local means of changing channels. A wireless remote enables you to switch channels from your armchair, turn on the recorder, operate its transport controls, and switch the RF output between tape and antenna. In playback, the deck automatically switches to output from the tape.

Counter mode is determined by four buttons on the subpanel. One shows the time, the second toggles a conventional tape counter and an elapsed-time indicator, the third (**COUNTER MEMORY**) causes the deck to stop at zero during fast-wind, and the fourth resets the counter to zero. An "instant recording" button to the right of the display starts the recording process immediately and begins a 30-minute countdown to stop. Each press of the button (within 10 seconds) increases the time-to-completion by 30 minutes, to a maximum of four hours. You can increase the time period to as long as 4 hours 59 minutes by pressing **MIN +** or decrease it by pressing **MIN -**. Instant recording has priority over all other modes and will initiate recording when the power is off, provided the deck is plugged in and a recordable cassette is loaded.

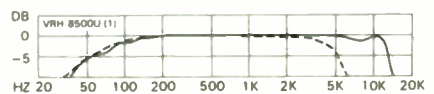
A pair of F connectors on the back panel serve as the VHF/cable RF input and the RF output (direct from the RF input or from the VCR remodulated onto Channel 3 or 4) for feeding a conventional television receiver. Screw terminals serve as the input for a 300-ohm UHF antenna feed. There is no decoder loop, so if you have a pay-TV descrambler, it will have to go in either the feed to the deck (in which case you will not be able to view one channel while recording another) or the feed from the deck (in which case you will not be able to record pay-TV channels). Direct audio and video inputs and outputs are arrayed along the top center of the back panel. Inserting a plug into the audio or video input jack switches the deck from tuner mode to direct-input mode (which means you can't connect a direct video input and still record a broadcast without reaching around in back and removing the cable).

In Diversified Science Laboratories' tests, the VRH-8500U's tuner performed admirably. Video response is almost perfectly flat to the color-burst frequency (3.58 MHz), implying a horizontal resolution of approximately 300 lines when connected directly (not mediated by tape) to a good mon-

VCR SECTION

Except where otherwise indicated, the recording data shown here apply to both speeds: SP and EP (SLP). All measurements were made at the direct audio and video outputs, with test signals injected through the direct audio and video inputs. The 0-dB reference input level is 10 dB above the voltage at which the automatic level control (ALC) produces 3 dB of compression at 315 Hz. The 0-dB reference output level is the output voltage from a 0-dB input.

RECORD/PLAY RESPONSE (-20 dB)



SP	+0, -3 dB, 79 Hz to 12.5 kHz
EP	+0, -3 dB, 70 Hz to 4.6 kHz

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

SP	49 dB
EP	47 dB

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

SP	≤ 4.0%
EP	≤ 6.4%

FLUTTER (ANSI weighted peak; R/P)

SP	±0.17%
EP	±0.27%

SENSITIVITY (for 0-dB output; 315 Hz)

	1,370 mV
--	----------

AUDIO OUTPUT LEVEL (from 0-dB input; 315 Hz)

	0.42 volt
--	-----------

AUDIO INPUT IMPEDANCE

	48k ohms
--	----------

VIDEO RECORD/PLAY RESPONSE

	SP	EP
at 500 kHz	+1 1/2 dB	+1 1/2 dB
at 1.5 MHz	-2 dB	-6 3/4 dB
at 2.0 MHz	-5 1/2 dB	-11 3/4 dB
at 3.0 MHz	-12 1/2 dB	-14 dB
at 3.58 MHz	-17 1/2 dB	-
at 4.2 MHz	-23 1/4 dB	-23 1/4 dB

SHARPNESS CONTROL RANGE

at 500 kHz	+ 1/2, -1 1/2 dB
at 1.5 MHz	+3, -5 1/2 dB
at 2.0 MHz	+3, -6 1/2 dB
3.0 to 4.2 MHz	no measurable effect

LUMINANCE LEVEL

SP	3% low
EP	6% low

GRAY-SCALE NONLINEARITY (worst case)

	≈ 20%
--	-------

CHROMA LEVEL

SP	≈ 3/4 dB low
EP	≈ 1 dB low

CHROMA DIFFERENTIAL GAIN

	none
--	------

CHROMA DIFFERENTIAL PHASE

	none
--	------

MEDIAN CHROMA PHASE ERROR

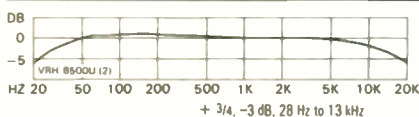
	none
--	------

*Too unstable to measure reliably

TV TUNER SECTION

All measurements were taken at the direct audio and video outputs.

AUDIO FREQUENCY RESPONSE (mono)



AUDIO S/N RATIO (mono; A-weighted)

best case (no color or luminance)	43 dB
worst case (multiburst pattern)	26 1/4 dB

RESIDUAL HORIZONTAL-SCAN COMPONENT (15.7 kHz)

	-53 1/2 dB
--	------------

AUDIO OUTPUT LEVEL (100% modulation)

	0.41 volt
--	-----------

AUDIO OUTPUT IMPEDANCE

	15 ohms
--	---------

VIDEO FREQUENCY RESPONSE

at 500 kHz	+ 1/4 dB
at 1.5 MHz	+ 1 1/4 dB
at 2.0 MHz	+ 1 1/4 dB
at 3.0 MHz	- 1 1/4 dB
at 3.58 MHz	- 3/4 dB
at 4.2 MHz	- 12 dB

LUMINANCE LEVEL

	1% high
--	---------

GRAY-SCALE NONLINEARITY (worst case)

	≈ 5%
--	------

CHROMA DIFFERENTIAL GAIN

	≈ 20%
--	-------

CHROMA DIFFERENTIAL PHASE

	≈ ± 5°
--	--------

CHROMA ERROR

	level	phase
red	-1 dB	+ 6°
magenta	-1 dB	+ 6°
blue	-1 dB	+ 4°
cyan	-1 dB	+ 8°
green	-1 dB	+ 7°
yellow	-3/4 dB	+ 7°
median error	-7/8 dB	+ 6°
uncorrectable error	± 1/8 dB	± 2°

itor. Luminance level (brightness) is just about right on the mark, and gray-scale linearity is much better than average. The chroma differential gain and phase (variation in color saturation and hue with changes in scene brightness) shown in our data column occur only at the highest luminance level, where they are least important, and chroma level (color saturation) is closer to standard than we usually find. Although there is a slight chroma phase (hue) error, it is sufficiently uniform that it can be corrected almost perfectly by a slight touch-up of a monitor's tint control.

The tuner's audio response is quite good, although not stellar. Response droops gradually above 8 kHz and below 40 Hz. Noise is reasonably low with normal pictures, and the horizontal-scan whistle is well suppressed. The maximum audio output level seems to be controlled by the deck's automatic level control (ALC) but should be adequate for driving an external amplifier.

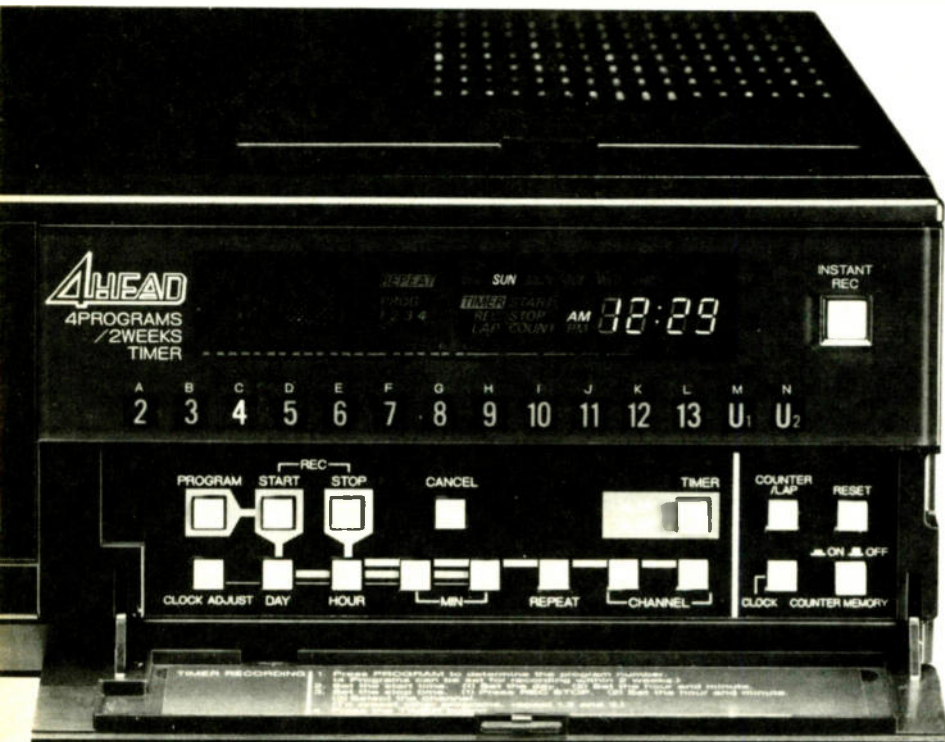
The VCR's audio performance is substantially better at the SP speed than at EP, as is to be expected with edge-track recording. At the faster speed, response holds up well to 12.5 kHz, whereas at EP, it is confined pretty much to the voice band (-3 dB at 4.6 kHz). Both flutter and distortion are lower at SP, and the hiss is subjectively much less annoying at that speed than the 2-dB measured difference between the SP and EP signal-to-noise (S/N) ratios would imply. Output level from the tape is virtually the same as that from the tuner—probably because of the "tight" ALC used to prevent overload.

Video performance at standard speed

also is measurably and visibly better than that at EP. Horizontal resolution is greater than 160 lines at SP (based on a -6-dB criterion) and a bit less than 120 lines at EP, and the difference is clearly evident in the picture. Turning up the SHARPNESS improves the resolution noticeably at both speeds, and luminance noise is low enough on this deck (with high-quality tape) that you can do this without burying the screen in snow. Reducing the SHARPNESS also has a substantial effect, but we see little point in doing so unless the tape you are playing (or the broadcast you have recorded) is well below par.

Chroma noise is somewhat worse at EP than at SP, but with a good tape, it is not bad at either. Chroma differential gain and phase are low enough to be lost in the residual chroma noise at both speeds, so they are reported as being essentially nonexistent. Chroma phase error also is indistinguishable behind the noise, and the chroma level is only slightly (and negligibly) lower than standard. Luminance level is likewise close to standard at both speeds, and the gray scale is reasonably linear.

The outstanding element of this VCR is its video tuner, which is more sensitive and generates less snow than many others we've seen, even in models costing substantially more. Video recording performance at the standard speed also can hold its own against that of many more expensive decks, and audio performance at that speed is quite good for a monophonic edge-track recorder. If VHS Hi-Fi sound quality is not that important to you and you're not mad over video special effects, the Tatung VRH-8500U is well worth your consideration. ■



CONTROLS FOR SETTING THE VRH-8500U'S CLOCK AND PROGRAMMING ITS TWO-WEEK/FOUR-EVENT TIMER ARE BEHIND A FLIP-DOWN DOOR AT THE BOTTOM RIGHT OF THE FRONT PANEL.

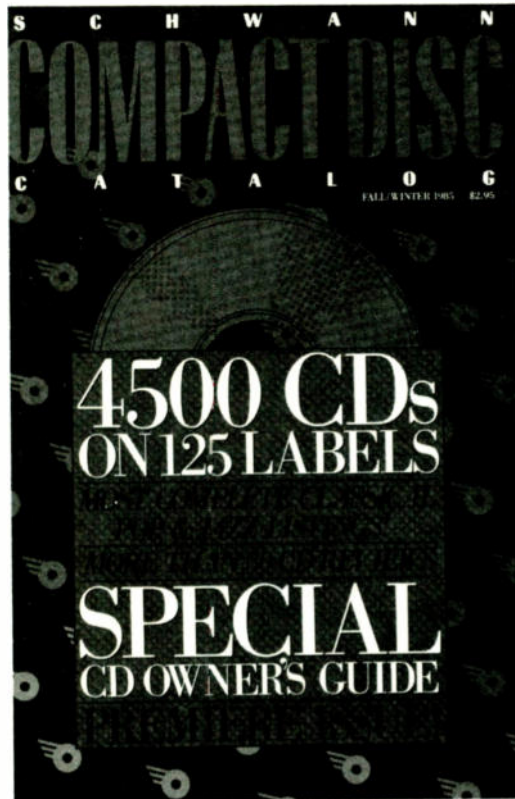
ABOUT THE dBW

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

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

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BY ROBERT LONG AND E. BRAD MEYER

The latest, greatest audio and video components, as seen at the Winter Consumer Electronics Show

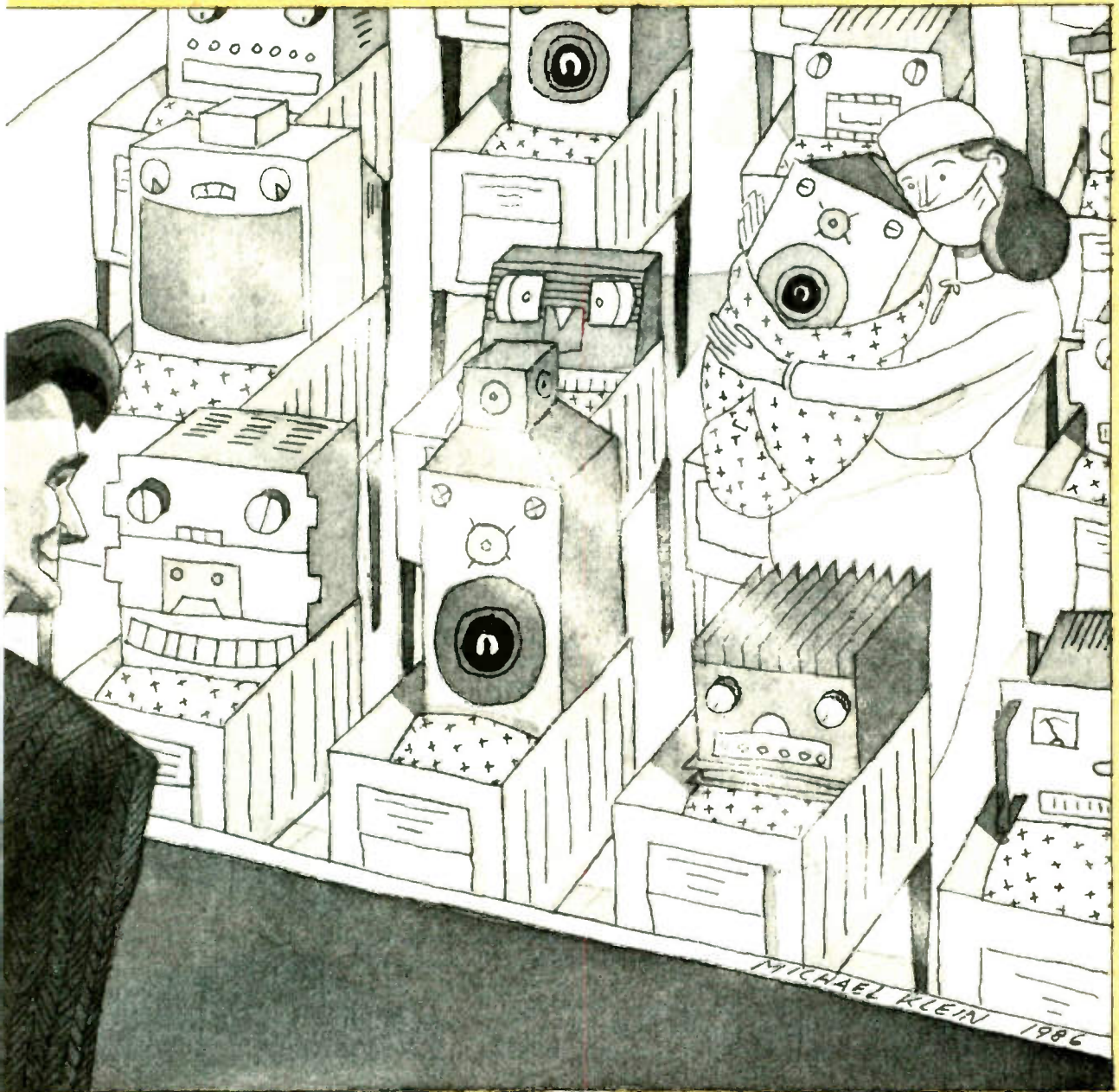
THE LATEST WINTER CONSUMER ELECTRONICS Show, held in January in Las Vegas, proved to be another CD and video extravaganza. These product categories dominated the proceedings, the presence of home computers having diminished in proportion to the collapsed market for those devices. In the two fields, it seemed that more Compact Disc players were introduced than any other product, while video had the most interesting new technology on display, although much of it in prototype. Most surprising, perhaps, was 8mm video's popularity with manufacturers, if not yet consumers. Also startling was the improvement in stereo FM sound quality provided by a new system of FM broadcasting. I'll let our correspondents Robert Long and E. Brad Meyer give you the details.

David Ranada



THE

ILLUSTRATIONS BY MICHAEL KLEIN



NEW ARRIVALS

DIGITAL DOMINATION?

THE COMPACT DISC'S ULTIMATE STATUS among the audio media will depend on whether shoppers can find the music they want—which for some titles is about as likely as breaking even at a Las Vegas slot machine. The continuing shortage in manufacturing capacity means that some new titles—and an increasing number of old ones—are selling out their first runs and vanishing into unavailability. Particularly hard hit are small, high-quality labels like Sheffield and Reference Recordings, who said at the show that their manufacturers have reneged on contracts, leaving them with lots of unfilled orders for CDs amid dwindling demand for LPs. It would be a terrible loss if labels like these were to go under, taking with them some of the finest-sounding master tapes ever made, because some large record companies take over pressing capacity with huge orders for the latest hits.

The problem won't go away immediately, though help may arrive within a year or so. Already, 3M has a new CD plant on line, and other facilities are being planned or built by Denon, Capitol-EMI, CBS, and Philips/Du Pont. Lesser-known companies like Laser Video, Shape, Laser Logic, Praxis Technologies, and Usine de Disques Compacts (the last two in Canada) may open plants by early 1987. Worldwide production capacity is expected to rise from today's 50 or 60 million discs per year to 250 million by 1990. (For more details on the CD availability scandal, see "Unquiet on the Western Front" on page 63.)

Work also is proceeding on incorporating graphics (text or pictures) in the digital bit stream of a Compact Disc. There already is an industry standard for the encoding scheme, and many of this year's high-price CD players have output jacks to feed the graphics signals to external adapters that will send the information to your TV. The decoders themselves, however, were nowhere to be seen at the show, and no one announced any CD-graphics software.

Though each Compact Disc can hold many megabytes of data just in its sub-codes, don't confuse this technology with CD-ROM, an incompatible CD format designed for computer data. CD-ROM systems are scheduled to reach the market this year with prices between \$700 and \$1,500. I played with one of the several systems on display at the show: For users who need rapid access (no more than a few seconds) to large amounts of fixed data—say, the *Encyclopaedia Britannica* on a single disc—CD-ROM is mouth-watering indeed. *E.B.M.*



PORTABLE CD PLAYERS

IT APPEARS THAT BUYING A COMPACT DISC player is not much of a gamble at this point. The disc shortage is a sure sign of the medium's success. Every major manufacturer now sells a line of players; debut entries at this CES came from a phono cartridge maker (Shure), two well-known electronics companies (Proton and Tandberg), and a high-end outfit (PS Audio). Those audiophiles who look for signs of the end of the analog world can point to one-brand systems from Pioneer and others incorporating a CD deck as standard equipment, with a turntable as an option. But the big trend in CD players is toward small, relatively inexpensive models, either portables or AC-powered "transportables." Almost a quarter of all players sold in the U.S. last year were portables, and that market share is expected to grow to a figure between 33 percent and an incredible 50 percent in 1986.

It all began with Sony's D-5 (\$300). Originally intended as a specialty item for the upscale Walkman market, it sold briskly for months before a single carrying case or battery pack arrived on these shores. Obviously, people were using the D-5s at home in place of larger and more expensive tabletop units; the small player was less convenient at times and lacked some features, but the sound quality was good and the price was right.

The \$300 Technics SL-XP7 (test report, January) is smaller and lighter than the Sony D-5, especially when the battery packs are used. It can also be programmed to play tracks in random order. Models similar in appearance to the Technics—but without programmability and costing \$50 less—will hit the stores soon bearing Matsushita's Panasonic and Quasar brand names.

At the CES, Sony struck back with the

D-7, the smallest and most shock-resistant player on the market; even with its battery pack, it is smaller than the original D-5. (Sony also introduced a more convenient power supply for the older model.) The D-7 is priced at \$300, while the D-5 will continue to be discounted to less than \$200. (For a test report on the D-7, see page 32.) Resembling the D-7 but lacking programmability is Pioneer's PD-C7 (\$299; AC adapter extra), which can be used by itself or slipped into a boom-box system. Boom boxes with built-in CD decks were introduced by Fisher, Magnavox, Panasonic, Sanyo, and Toshiba.

The lowest list price for a portable was \$229 for the Sanyo CP-10, with 16-selection programming. The Hitachi DA-1000 (\$300) has a music-scan mode that plays the first few seconds of each cut, and it can repeat either whole discs or programmed segments. New portables also were shown by Magnavox and Hitachi.

Reflecting the increasing use of portable Compact Disc players at home is the design of Toshiba's XR-P9 (\$300): Its AC adapter holds the player at a 45-degree angle, allowing easy access to top-mounted pushbuttons. Included in the purchase price are an infrared remote control and a matching infrared receiver that attaches to the top of the unit. The XR-P9 has 16-selection programmability that, like the remote control, works only with AC power. Toshiba also showed a small AC-only play-



PANASONIC SL-NP3 PORTABLE CD PLAYER



PIONEER PD-C7 PORTABLE CD PLAYER



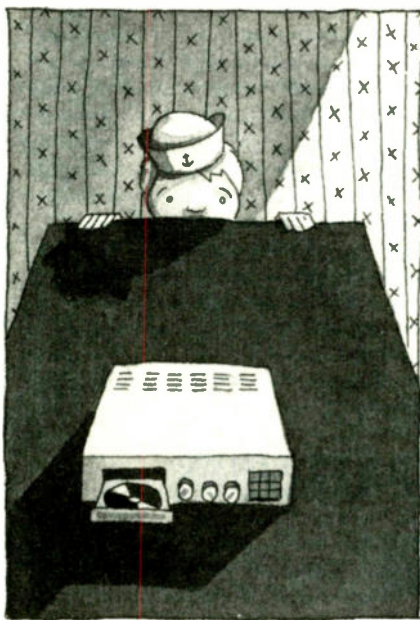
SANYO CP-10 PORTABLE CD PLAYER

er, the XR-J9. At 8 by 1 3/4 by 5 1/2 inches, it's about the size of a large paperback book. The XR-J9 has a regular 1/4-inch headphone jack and lists for \$200, which should translate to a discount price of close to \$150, barring further strengthening of the yen against the dollar.

Portable-CD owners who buy battery packs will sooner or later think of using their players in the car, partly because built-in units are both expensive and theft-prone. But driving with headphones on is dangerous, and in many states, illegal—better to connect the player to the existing car system. There are several ways to do this. Jensen makes a CD-adaptable in-dash receiver with input jack and patch cord. Concord and Sparkomatic offer similar units with dual cords that also power the portable. (Unfortunately, input connectors and voltages are not completely standardized, so this method will not work with all players.) Philips solves the problem of where to stash the player with a car receiver that accepts the company's own portable CD-10 (\$399) in a DIN-size slide-out tray.

Two devices, each costing only \$20, allow the use of any portable Compact Disc or audio cassette player in the car. One is the Sparkomatic CDA-50 adapter, an FM converter that takes the audio signals from a headphone output and broadcasts them to the car's receiver. The other is the clever Recoton CD-20 Car Cassette Adapter, an audio cassette shell with a patch cord coming out of a rear corner; inside is an equalization network and, where the pressure pad usually sits, a tape head. The adapter goes into the car's tape deck (the cord is flexible so that it won't break if the tape transport swallows the entire cassette), and the internal head feeds the signal magnetically to the car's playback head and thence to your electronics.

With any of these installations, you have the problem of getting the CD out of its jewel box and into the player—not an easy task with two hands, much less with one hand on the steering wheel. The answer: Sony's trunk-mounted Disc Jockey, a programmable ten-CD changer with a separate 3/4-inch-thick wired remote control that fits in a DIN-size slot. You can Velcro the remote onto the dashboard or use it free-standing and hide it away when you leave the car. One of the Disc Jockey's features would be welcome in any car-CD installation: a two-position switchable compressor circuit that limits the CD's excessive (for the car) dynamic range. The Disc Jockey costs \$995 and requires an external power amplifier and speakers. A separate tuner module is available at \$130; the compressor works with its output as well. *E. B. M.*



TABLETOP CD PLAYERS

DESIGNERS OF FULL-SIZE COMPACT DISC players, unwilling to cede the entire market to small machines, have added new features at all prices. Virtually everyone is now using digital filtering in tabletop decks. The filters in new models from Technics and Hitachi have much less ripple than previous designs, with response variations held to less than 0.01 dB. Philips's new decoder chips still use four-times oversampling, but they now have full 16-bit digital-to-analog conversion.

Presumably using the new Philips chips, Magnavox's CDB-650 player (\$430) also has a "lifetime memory" based on semiconductors called EAROMs (electronically alterable read-only memories) that can store more than 700 selections. A button labeled FTS, for Favorite Track Selection, enables you to store five selections in any order along with the disc's catalog number (already encoded in the area inside the music tracks). Any time you reload the disc, a push of the FTS button gives you your pre-selected program. The EAROMs retain their information even if the player is unplugged for months or years. A feature that the CDB-650 shares with many other new models is a so-called record-pause mode that automatically inserts four seconds of silence between preprogrammed selections, facilitating dubs onto cassette decks whose track-search features demand the spaces.

The new home CD changers offer programmed playback from a much larger selection of music, but compatibility problems are already emerging. Record companies might issue multiple-disc sets—all of Beethoven's symphonies, for example—in a magazine that would slip into the player, eliminating the need for handling the discs themselves. But that presu-

poses a standard magazine. The first home changer was Pioneer's PD-M6 (\$499), with a one-inch-thick magazine holding six discs. (Playing a single disc requires that you put it into a special one-CD holder.) Sony's car player accepts a differently constructed ten-disc magazine, and Mitsubishi's new changer, the DP-309 (\$450), has a five-disc magazine sized to match VHS videocassettes, on the assumption that some people will already have storage facilities for them.

In a different category altogether is the Nikko NCD-600, which stores as many as 60 discs in its magazine and accepts add-on modules for a total of 240 CDs. But only five selections can be programmed for automatic play—unless you connect the NCD-600 to an external computer, in which case your preselections are unlimited. The Nikko's versatile pitch controls, and its \$4,400 price tag, reveal it as a professional model intended for studio use by disc jockeys and sound-effects technicians.

Remote control is spreading to lower-price Compact Disc players. The NAD 5330 and the Sharp DX-620 list for \$348 and \$290, respectively, while a new Sanyo player is priced at \$249. Technics's top-of-the-line model, the SL-P500 (\$575), adds remote-controllable volume to the usual functions.

The decline in prices of basic CD players has been slowed (and in some locations, stopped) by the weakening dollar. Symphonic offered the lowest price of any player at the CES in Chicago last summer—\$179—and reportedly would have gone to \$159 in January if the yen had not risen. Nevertheless, many suppliers say that prices of \$129 or \$139 will be common by summer, with occasional specials for less than \$100! *E. B. M.*



PIONEER PD-M6 CD CHANGER



SANYO CP-710 CD PLAYER



TECHNICS SL-P500 CD PLAYER



HIGH-END CD PLAYERS

FOR THOSE WILLING TO PAY MORE, SOMETIMES much more, the high end of the CD market seems healthy. Tandberg's TCP-3015A player (\$1,295) has no internal feedback and no coupling capacitors, and it wins this show's ergonomics award for its generously large and accessible pushbuttons. PS Audio sells its CD deck for the same price; it's basically a Philips-built transport with modified electronics. The proliferation award goes to Yamaha for introducing seven new separates plus three other players designed for its one-brand systems. The company's CD-2000 (\$995) has a variable output with a front-panel fluorescent indicator showing its setting; the



HITACHI DA-003 TWO-PIECE CD PLAYER

similarly priced CD-2000M has 600-ohm balanced outputs and extra shielding for broadcast use.

The British company Cambridge Audio makes a \$2,400 CD player that occupies two boxes, one for the playing mechanism and one for its power supply. A newly introduced third box, costing \$600, contains three cumulative error counters showing different types of both corrected and uncorrected tracking errors. (One of my own discs, then being used as a demo for its fourth CES, showed eight corrected and no uncorrected errors in about 90 seconds of play.)

Sony introduced a CD deck last year with an optional outboard D/A converter and filter; the total price of that system was more than \$2,000. Hitachi's new high-end model, the DA-003, also has an outboard converter, but the price for both boxes is less than \$1,000. The connectors and digital coding have been standardized, so the various outboard converters and digital player outputs *should* be compatible. Signals from these outputs could be routed—before digital-to-analog conversion—through future digital signal processors for equalization, compression, reverberation, four-channel synthesis, audio measurement and analysis, and so on. *E.B.M.*

CD ACCESSORIES

NOTHING INDICATES THE SUCCESS OF the Compact Disc medium better than the mad rush of accessory companies to market a host of not-necessarily-relevant products. CD cleaners continue to proliferate, amid claims and counterclaims as to whose disc-wiping method is best. The latest accessory from Audiosource is the Laser Lens Cleaner. For \$26.95 you get a CD with a soft brush cemented to the underside. Loading it into a player causes the disc to spin, removing dust and smoke particles from the lens to prevent mistracking. The company says the device will not damage the player optics.

Most CD owners have something of a storage problem. The plastic jewel boxes protect the discs well, but they don't use the space on most existing shelves efficiently. Interlocking CD cases enable you to stack two layers on shelves with one-foot vertical spacing, but many of these products have separators, reducing horizontal packing density and preventing the insertion of multiple-disc boxes. Besides, many shelves are too deep for the 5½-inch cases. For a different approach, Geneva has introduced a 12-inch-square flat case holding four jewel boxes. The cases will fit perfectly on shelves designed for your LP collection; the only drawback is that by looking at the spines of the cases, you can read only half of the CD spines. *E.B.M.*



SIGNET SK-314 CD CLEANING SYSTEM

FM BREAKTHROUGH

THE MOST IMPORTANT NONDIGITAL, NON-video new technology at the show wasn't yet available in a product. But NAD's demonstration of CBS's technique for reducing stereo FM noise was so persuasive that it left little doubt in the minds of audio journalists that FMX will soon be appearing everywhere—at least, we all hope so.

Frankly, when I first heard about FMX (whose name is meant to suggest extended-range stereo FM), I didn't believe it. In the summer of 1984, the CBS Technology Center let it be known that it had a way of quadrupling the prime coverage area of stereo FM stations—essentially a method of creating stereo reception with as little noise as mono. But I wouldn't learn how CBS achieved this until January 1986, so back in the summer of 1984, FMX sounded like another case of "repealing the laws of physics." Well, I was wrong.

In recent years, manufacturers and the audio press have been crowing about tuner circuitry that nibbled another 6 dB or less from the noise of stereo FM reception. FMX will knock off about 23 dB of noise, according to NAD; it certainly sounded that good. That's a staggering improvement in our usually incremental world. And it won't improve just fringe-area reception, but will deliver stereo signal-to-noise ratios in the 90-dB range for listeners reasonably close to the transmitter, thus rivaling Compact Discs in this respect. In short, we're looking at a truly significant advancement in an area that sorely needs it, the swift passage of audio technology having left FM broadcasting bobbing helplessly in its wake.

The secret is the use of companding. An FMX transmitter broadcasts a compressed version of the difference (L-R) signal via a second 38-kHz stereo FM subcarrier modulated in quadrature (90 degrees out of phase) with the normal stereo subcarrier. An FMX receiver contains two phase-lock decoders: One picks up the normal difference signal, while the other picks up the compressed version. To aid perfect decoding, the control signal for the FMX expander derives from the uncompressed difference signal, except at very low signal strengths, where the difference signal begins to be swamped by noise. The newly re-expanded difference signal is matrixed with the baseband (L+R) signal to create stereo with a dynamic range far outstripping that of normal stereo FM. Conventional tuners without FMX circuitry simply lock onto the normal difference signal and ignore the compressed one, making the system entirely compatible with existing tuners and receivers. (Old designs without phase-locking may, if they're out of alignment, suffer some degradation of channel separation by partially picking up the second subcarrier modulation. How serious a problem this is

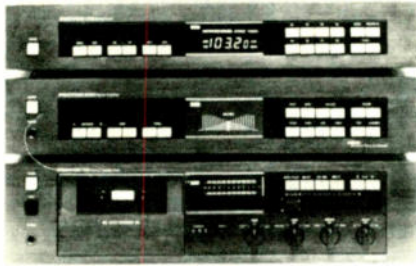
remains to be heard.)

Compatibility is only one of FMX's attractive features. Another is its appeal to broadcasters, whose incomes (whether from commercial sponsorship or noncommercial fund-raising) are functions of their geographic and demographic coverage. Because the cost to a radio station of going FMX is expected to be low (less than \$5,000) and the potential income enhancement so high from the expanded coverage area, I can easily believe the stations' reputed eagerness to acquire encoders. Furthermore, the system faces no competition, Dolby FM having been neither as compatible with existing broadcast techniques nor nearly as dramatic in the expected coverage increase or noise reduction. All of which makes it unlikely that the proposal will boil down to a hardware/software chicken-and-egg game like that of the late (and occasionally lamented) quadriphonic systems. And because FMX in no way violates the FCC's stereo-broadcast regulations, the system requires no further "rule making," thereby avoiding the tedious delays that have attended stereo AM and stereo TV. In fact, by alleviating FM picket-fencing in moving cars—which, based on NAD's demonstration, it does very effectively—and extending stereo FM's range, FMX could do more to hinder the spread of stereo AM than the FCC's reluctance to pick a standard for it.

Only two questions remain: How many FMX models will come on the market, and when? Tandberg, for one, has expressed interest in being among the leaders, and Apt says it will offer FMX in its first tuner, the T-1 (see "Audio System Components," below). Mass-market products are likely to lag behind; one reason is that ICs for FMX are under development but not yet ready. The first NAD model, scheduled for late spring or early summer, will be built from discrete components and therefore will probably cost more than the company's later IC-based models—which may end up priced only a few dollars higher than otherwise comparable non-FMX units. Whether the new technology catches on in a big way will be indicated by the number of FMX-equipped components shown at the next CES. R.L.

AUDIO SYSTEM COMPONENTS

BUT LET'S RETURN TO MORE IMMEDIATELY usable wares. The relatively small specialist audio companies (the majority of them American in management, if not always in manufacturing) invariably seem to have the most interesting equipment, and the line that especially captured my attention in Las Vegas (though it wasn't displayed on the show floor itself) was McIntosh's.



PROTON 430R TUNER (TOP), D-530R INTEGRATED AMPLIFIER, AND 730R CASSETTE DECK

It's fashionable in some circles to speak of McIntosh as a grand old company that time has passed by. But its current, 7000-Series styling (still incorporating its classic and proprietary black-glass panels) gives a proud face to a growing number of products designed for the very latest needs. There is, for example, the MC-7270 power amplifier (actually introduced last fall, at \$2,295), whose Power Guard design aims to prevent distortion from averaging more than 0.3 percent even for transient overloads of 10 dB—that is, instantaneous input high enough to demand 2,700 watts (24¼ dBW) from its rated 270-watt (14¼ dBW per channel) circuitry! By the time you read this, McIntosh will have brought forth a new tuner, the MR-7082, for somewhere below \$1,500 (\$1,250 has been suggested tentatively, but the price hadn't been set when I inquired). It incorporates a number of convenience features (station presets and memory search, for instance), plus many that are geared for performance. Among the highlights: a wideband AM section, an "audio processor" that simulates stereo from mono AM stations or FM ones too weak to deliver full stereo with low noise, and (perhaps most intriguing) signal-locked, digitally displayed tuning together with analog (knob-controlled) manual tuning.

The latest models in Tandberg's current line, emphasizing discrete components (including polypropylene capacitors and metal-film resistors) throughout the no-feedback circuitry, are distinguished by "A" suffixes. In addition to the TCP-3015A CD player (the company's first), the newly introduced units are the TPA-3016A power amplifier (\$2,995), with dual-mono MOSFET circuitry rated at 220 watts (23½ dBW) per side, and the "minimalist" TCA-3018A preamp (\$1,595).

PS Audio added two preamps: The Model 4.5 and Model 5.0—at \$850 and \$499, respectively—are otherwise almost identical. The less expensive version gets by without dual-mono internal circuitry and a phase-inversion feature. Both units have switchable moving-coil phono gain and remote power supplies; as in the much admired Model IV, their line amps can be defeated for direct feeds to the output.

New to me was the Meitner Audio PA-6 preamp, which comes with a wired remote

(avoiding what Meitner sees as the limitations of infrared). Internal controls are FET switches (no mechanical contacts) and voltage-controlled amplifiers. Two phono-input modules are available: the Trans-Impedance Interface for low-output moving-coil pickups and the Negative Impedance Interface, which is said to correct response and phase errors of moving-magnet designs.

Counterpoint had an unusual hybrid (tube and transistor) power amplifier, the SA-20 (\$1,995), which was made even more interesting by its power ratings. Amps putting out as much as 200 watts (23 dBW) continuously into 8 ohms and 1,000 watts (30 dBW) peak into 2 ohms are fairly rare among high-end units. The peak-current spec is 45 amps.

The aforementioned Apt T-1 tuner is rare in having knob-based digital tuning along with switchable analog fine-tuning. It includes the AM band as well as FM, with eight presets, wide/narrow IF bandwidth switching, and Apt's virtually unique and valuable image control. It will cost \$600 and is expected toward the middle of this



SHERWOOD S-2730CP RECEIVER



PIONEER SX-1500 RECEIVER



TECHNICS SA-290 RECEIVER



SOUNDCRAFTSMEN PM-840 POWER AMPLIFIER



ROTEL RX-870 RECEIVER



DENON PMA-900V INTEGRATED AMPLIFIER

DENON PMA-900V INTEGRATED AMPLIFIER

year. And if you covet the Accuphase T-106 tuner but don't need its AM tuning, there's now an FM-only version: the T-107 (\$700).

Both NAD and Proton made an issue of superior transient headroom by urging more elaborate testing of power amps' short-term power capabilities, a characteristic made important by wide-range digital recordings. Proton's D-1200 "professional" power amp (\$599), for example, carries per-channel ratings of 100 watts (20 dBW). But its "IHF dynamic power" (presumably derived from the IHF dynamic headroom test, as are the dynamic power figures in our own test reports) into 8, 4, and 2 ohms is 600, 1,000, and 1,500 watts (27%, 30, and 31% dBW), respectively. A full "power envelope" rating (NAD's term) would require additional figures or curves for other tone-burst durations—particularly longer ones, since both NAD and Proton contend that typical musical transients last closer to 200 milliseconds than to the 20 milliseconds of the IHF-mandated tone burst. I wonder whether the extra information may be too much for some prospective buyers already overburdened with specs.

Ortofon—which last year took over U.S. distribution of Dual products, beginning with turntables—has added what it calls the New Tech line of Dual separates. The CV-440 remote-control Class A integrated amplifier is typical of those units I've seen so far, and its high-tech appearance and specs do arouse interest. I say that because Dual once before tried to market here some of its then-extensive European line of electronics, which I believe failed because of both its DIN-spec-based mediocrity and its uncompromisingly European look. This bid seems much more promising. It will be interesting to see how its fortunes develop.

Don't be surprised, incidentally, if you see some familiar names in unfamiliar places. Canon is moving into audio componentry to complement its VHS Hi-Fi equipment, with the AM-10 integrated amp, featuring a built-in five-band equalizer, and the SP-10 surround processor. And Clarion, usually thought of as a car stereo company, has introduced semipro multi-track recording mixers. Threshold showed a prototype of a PWM (pulse-width modulation) power amplifier, which, though it presently has some drawbacks in audio use, is being incorporated into NMR (nuclear magnetic resonance) body scanners because it can deliver the pulses of current and voltage suitable for atom-zapping.

Perhaps the Kenwood room at the show summed up the current situation most graphically. The casual passerby might never have recognized it as belonging to a major home audio concern because the overt emphasis was entirely on satellite TV reception and car stereo. It doesn't mean that Kenwood has retreated from high fidelity—only that its R&D labs, after many audio innovations, have their concentration focused elsewhere at the moment.

R.L.

ACCESSORY COMPONENTS

ALTHOUGH YOU MAY NOT HAVE NOTICED any references to remote control in the foregoing discussion, it definitely seems to be the coming thing for audio systems. Most schemes for controlling an array of stand-alone components, particularly when they derive from different manufacturers, have proven limited, impractical, or expensive. However, a single company's component line, which can be designed as a system, can be much more amenable to remote control, and now full-scale componentry is enjoying remote (usually wireless) control more and more frequently. It was a major point of Proton's new offerings, for instance, and the company specifically suggests the 430R tuner, D-530R integrated amp, and 730R cassette deck as the elements of a completely "remotable" system.



LUXMAN RC-401 REMOTE CONTROL COMMAND SPLITTER (LEFT) AND RC-402 TRANSMITTER

Several firms exhibiting at the CES showed their solutions to the problem of remote-controlling unrelated components. Revox, which previously has offered remotes for its own products, introduced the B-206 transceiver (\$95), which can pass on to the intended components the signals from any remote control unit. The B-206's infrared receiver (or receivers, in a multi-room system) is set up within a line of sight from the listening position and is "hard wired" (using small three-conductor cable) to an infrared transmitter placed in front of the equipment. Thus, a mixed-brand system of remotely controllable components, even out of sight in a closet or in another room, can be run with one or more hand-held controls from an easy chair.

Kyocera's Full System Remote Control works similarly in that receivers can be placed in different rooms, but only two RS-103 remote sensors can be attached to the



PARASOUND CA-215 INTEGRATED AMPLIFIER (TOP) AND VSE-1 VIDEO SOUND ENHANCER

RC-101 controller (which also includes a sensor), and the latter must be attached to Kyocera's own matching components (including three receivers, two cassette decks, and a CD player). The Luxman audio-video remote system is somewhat more complex in that it actually controls RF (radio frequency) signals themselves, rather than merely ordering otherwise standard components to do so. But it achieves much the same purpose and in some cases may be used with equipment other than Luxman's own.

Nikko's NPS-1R regulates fewer functions of an audio-video system, but does so in a way that makes the brand and design of the components virtually immaterial. A rack-mountable main chassis is hooked up between preamp and power amp. Volume, balance, treble, bass, and a 20-dB muting function can be varied from the Nikko hand control and will influence any signals passing through the chassis. The hand unit also will turn on or off any equipment powered from the three AC outlets at the back of the chassis. Source selection, tuning, and the like are handled by the individual components in the normal manner; the controls on the Nikko chassis add their effect to whatever adjustments have been made at the system preamp.

In the C-34V (\$2,195), McIntosh, too, addresses the problems of controlling an audio-video system. It handles all the system's audio signals with seven-position electronic source selection, five-band tone controls, a variable-ratio compander, and a built-in wideband Power Guard monitoring amp rated at 13 dBW (20 watts) per side. The preamp is a modernized version of the C-33 (test report, July 1982). The C-34V's tone controls and compander can be switched into the recording output. The companion MVS-1, due in March, at less than \$300, handles the video switching. Scheduled for April is an infrared remote-control system that can include multiroom slave units.

I'm not sure what it implies for future products and their controls, but two companies are utilizing fiber optics in audio. Onkyo's C-700 CD player does so to carry digital signals from one part of the chassis to another with no danger of imposing digital interference on the audio output circuits. Alpine's application links an elaborate cassette changer, designed to sit in an automobile trunk, with the controls at the dash. Again, the main purpose seems to be to avoid interference—in this case, ignition noise leaking into the unit's control signals, rather than into the audio itself.

In signal processing, the preemptive interest at the moment is in surround sound, particularly for recovering Dolby Surround encoding from stereo movie soundtracks, although most of the processors shown also have settings for music-only enhancement. A surprise entry into this field, and a major one, was Shure's, last fall, with the HTS-



SANSUI SE-99 EQUALIZER/ANALYZER



DENON AVC-500/II AUDIO-VIDEO CONTROL CENTER



PARASOUND PVA-1 AUDIO-VIDEO PROCESSOR

5000 processor (\$599, including a remote control). It used some rather sophisticated proprietary technology (a delta-modulation digital delay line, for example), and in terms of possible recommended hookup options, it set new standards as the most comprehensive of the available devices.

The Shure HTS-5000 and Fosgate Model 3601 both have front-center outputs—as do the theater systems for which the Dolby matrix was designed—to help achieve good centering of dialogue and other on-screen sounds, which usually are carried in this channel. Surround Sound's SSI-360II (\$390) has a center output, a crossover for a subwoofer output, and a 45-watt (16½-dBW) back-channel amplifier (for which SSI introduced a tower speaker, the SSI-2000).

Marantz has added the AVS-351 surround-sound processor (\$300) to its line, with 20 watts (13 dBW) per channel in the back amp. And a number of companies have included surround elements (but not necessarily the official Dolby Surround decoding) in their one-brand audio-video systems. The most impressive one I saw at the show was the Sansui AV-5000 (\$5,000). But Cinemasurround, as Sansui calls it, also is obtainable in two new Super Compo systems, both of which sell for less than \$2,000.

Parasound (which has branched out in several directions, including mixers and other PA/disco equipment) introduced two interesting processors for the audio-video environment. The PVA-1 (\$480) incorporates a surround-sound decoder and stereo synthesizer, a video enhancer (with controls for saturation, hue, and sharpness), dubbing controls, an audio equalizer, and a 25-watt (14-dBW) back-channel amplifier. A wireless remote control handles seven functions. The simpler VSE-1 (\$130), which is designed more specifically for video audio, has the decoder and synthesizer, a 12.5-watt (11-dBW) amp, tone controls, and DNR noise reduction.

Three of Geneva's add-ons for stereo TV sound represent three stages of technical sophistication. For \$16, you can get the PF-900 to synthesize stereo from mono inputs. The PF-925 (\$70) also does that, but it further offers three inputs and can be switched to pass true stereo if and when it's available to you. The PF-950 (\$199) not only simulates stereo, but it decodes MTS stereo broadcasts from equipment with an appropriate multiplex output. In addition, Geneva has two units to improve stereo TV sound without involving your regular stereo system. The PF-960 (\$80) is simply an amplifier that hides behind the TV set and drives a pair of speakers; the PF-965 (\$130) boasts three-input switching, stereo simulation, and a headphone jack.

Audio Control has reworked its Richter Scale (a subwoofer crossover/equalizer/analyzer) as the Series III (\$349), with Linkwitz-Riley crossover-filter alignments of 24 dB per octave and a switchable infrasonic filter sloping at 18 dB per octave below 18 Hz. Sansui has added the nifty SE-99 equalizer/analyzer (\$699), with separate 12-band adjustments for each channel and 11 memories, five of which can be user-programmed. Settings can be made with either a light pen or a remote control, both of which are supplied, and the analyzer will calculate inverse functions of measured curves. Incorporated in the remote is a microphone that, in conjunction with the SE-99's pink-noise generator, permits room equalization.

R. L.



TELEVISIONS

THE SHOW BROUGHT NEWS IN BOTH big- and small-screen televisions. Mitsubishi's 35-inch direct-view set, the CK-3501R, offers an 86-percent increase in viewing area over a 26-inch model. The Mitsubishi will be available in April for about \$3,200. Kloss Video's Novabeam 100



PIONEER SD-P40 REAR-PROJECTION TV SET

front-projection set (\$3,500), available configured for diagonal screen sizes of 60, 78, or 120 inches, has a new detail-enhancing circuit called the Faroudja Image Processing System that improves the contrast of fine details without producing artificial-looking outlines around large objects. The Novabeam 100's remote control is unusually versatile, allowing you to adjust brightness, contrast, hue, color saturation, and convergence.

Fans of large-screen television who lack the room for a front-projection set usually have had to make do with the reduced contrast and resolution of the more compact rear-projection designs. But the new Pioneer SD-P40 (\$3,500), a 40-inch rear-projection set, offers very good detail and more brightness (300 footlamberts) than some front-projection models.

At the other end of the scale was a show-stealing 1-pound LCD color TV whose 3-inch picture offers much greater sharpness and contrast than previous LCD sets. The \$300 Panasonic Pocket Watch has a screen that pops up for ambient-light viewing or folds flat against an internal backlight. The Pocket Watch runs for more than six hours on six AA cells or for about 1½ hours with the backlight.

E. B. M.



PANASONIC CT-301E PORTABLE TV SET

DIGITAL VIDEO

ALTHOUGH THERE IS NO CURRENT PROSPECT for the direct broadcast of digital video signals, VLSI chips now exist to convert the picture to digital form inside a TV set. So far, this circuitry has been used mainly for gimmicks like picture-in-picture (PIP), in which a second program, usually from a second station or VCR, is displayed in a small portion of the screen. Sony's 27-inch digital Trinitron (\$1,700) has both PIP and two video tuners, so you can watch a second broadcast source without an external tuner or VCR.

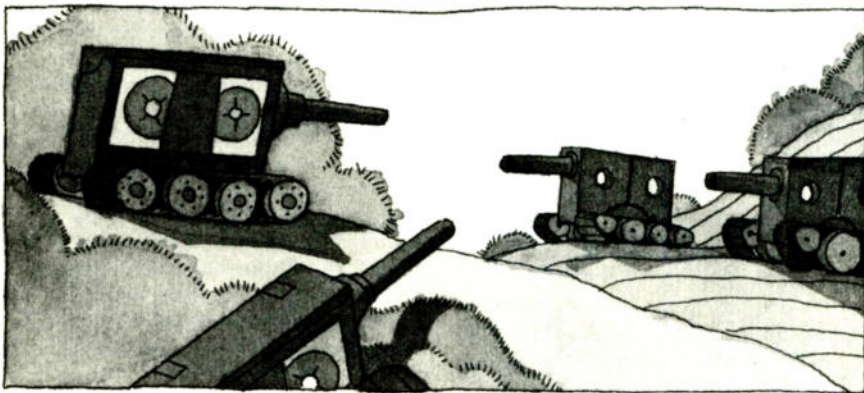
NEC's digital monitor, the DT-2680A (available in May), has three inputs for video signals (from VCRs or external video tuners) plus an RGB input for use with a home computer. With the remote control, you can select any of these inputs for PIP display in one corner of the screen. The NEC also contains digital memory to store and display as many as three still pictures at once. Toshiba has included similar digital circuitry in the first "digital" VCR, the M-6900. Its built-in digital memory is used to present flawless still-frame and slow-motion from either a tape or an incoming broadcast signal.

Hitachi showed a prototype TV set in which the digital circuitry is employed to enhance picture quality. Each horizontal scan line is stored and used to generate an

additional line containing a point-by-point average of the original scan lines above and below it. This process, known as scan doubling, blends the individual lines into one continuous 1,050-line display and paints a 525-line picture 60 times per second, twice as fast as usual. Hitachi's prototype failed to show off the technique to best advantage, but the idea holds great promise for better picture quality using existing broadcast standards and only a little additional circuitry.

Magnavox was demonstrating a Philips-engineered video noise-reduction scheme (using image-averaging over several frames) that will do wonders for picture quality if it ever gets incorporated into VCRs or outboard video processors. Also worth watching, literally and figuratively, is the Multivision MV-1001, a remote-controllable video processor incorporating digital PIP, freeze frame, and a 133-channel stereo television tuner. While waiting for the innards of the MV-1001 design to be transformed into integrated circuits, Multivision showed only a simulation of what the unit could do. But the projected list price of less than \$500, together with the MV-1001's ability to hook up to any TV set or monitor, means that if the device ever makes it to market, it's bound to be a hit.

E.B.M.



VCR FORMAT WARS

IF THE PURCHASE OF SOME ANALOG AUDIO hardware is beginning to carry the risk of obsolescence, the situation with video is much worse, thanks largely to the tape-format conflicts that have been confusing consumers for almost a decade. The absence of new Beta videocassette recorders at the CES led some impulsive journalists to declare that format all but dead. This is premature—but even if Beta does fade away, that will still leave VHS and 8mm slugging it out.

As VCR sales approach the saturation point in the American market, manufacturers are turning away from their strategy of

trying to pack in the most features for the least money and are beginning to pay long-overdue attention to picture quality. VHS HQ, that format's answer to Super Beta, was much in evidence at the show. Instead of raising the luminance-carrier frequency, as Super Beta does, VHS HQ uses a combination of vertical signal averaging to reduce chroma noise and an elevated white-clip level to sharpen edges. The technology will be appearing in new machines from NEC, Panasonic, JVC, Hitachi, Quasar, Marantz, Fisher, Toshiba, and Sanyo, whose new presence in the VHS camp makes it the only manufacturer of all three



JVC GR-C7 VIDEOMOVIE VHS HQ CAMCORDER



NEC V-10 VHS CAMCORDER



MITSUBISHI HS-F100R VHS CAMCORDER

home video formats. VHS HQ decks range from less than \$1,000 to \$1,800 in suggested retail price, and most also include VHS Hi-Fi sound. The first prerecorded VHS HQ videocassettes should appear in rental racks this summer.

Korean manufacturer Samsung showed a VHS play-only machine, the VT-503P (\$199); it's meant for use as a second home machine or as a rental unit. Because the deck only plays videocassettes and does not record them, do we have to call it a VCP?

The 8mm video format was everywhere, especially in the form of combination camera/recorders, or camcorders, many of which now appear in camera stores carrying brand names previously associated only with "chemical" photography: Canon, Kodak, and Polaroid, for example. Sanyo, Sony, Goldstar, Samsung, and Aiwa also debuted 8mm camcorders at the show, and National (Matsushita), Toshiba, and Hitachi

chi will offer them for sale in Japan this spring, presaging later introductions here. The 8mm transports are small. Sony even hid one in a TV set: The KV-25VXR (\$2,200) is a Trinitron XBR monitor/receiver with a built-in digital-audio-capable 8mm video recorder. Because the recorder fits into the bottom of the TV chassis beneath the picture tube, there are no external connections to make, and programming is easy with on-screen displays of instructions or error messages ("Please insert a tape"; "The timer has not been set").

VHS manufacturers, trying to offset the threat of 8mm, are beginning to include VHS HQ in their one-piece portables. NEC's V-10U has HQ circuitry plus automatic focus and white balance and a 6:1 zoom lens with macro capability. At \$1,695, it competes directly with Sony's high-end Video 8 unit, though because of the size of the standard VHS cassette, the NEC is larger and heavier.

JVC's answer to that size problem is to combine HQ circuitry with the VHS-C format, which uses a small cassette that is compatible with full-size VHS recorders by use of an adapter. The company's new GR-C7 Videomovie camcorder is almost as small and light as an 8mm model. To emphasize that the cassette can be played in a normal VHS deck, JVC has dropped the VHS-C designation and now refers to the tiny tape as a T-20. But thanks to the addition of the EP speed to the camcorder, a T-20 can now record for a full 60 minutes. The GR-C7, which uses a 1/2-inch CCD image sensor, has good low-light performance and better freedom from smear during panning than an 8mm unit to which we saw it compared. It is scheduled to go on sale later this year for less than \$1,500.

Home movies aside, no video format can survive without the rental of films, and here 8mm lags far behind VHS and Beta. About the only popular 8mm title that appeared at the show was *Beverly Hills Cop*. Hollywood producers are content to enjoy the fruits of the lucrative half-inch (VHS and Beta) business, so 8mm hardware manufacturers are pitching in. Kodak will offer 8mm duplicating equipment, and Sony Video Software Co. and Pioneer's LCD America will begin to copy movies in 8mm soon. *E. B. M.*



SANYO VHR-1300 VHS HQ VCR



NEC N-951U VHS HQ VCR



BLANK TAPE: VIDEO AND AUDIO

STRICTLY SPEAKING, 8MM VIDEOTAPE still isn't entirely off the ground yet, but judging from the CES it is now as out-of-fashion for magnetic-media companies to ignore the format as it is for them to not make computer floppy disks. Two former holdouts, 3M and Memtek, now are among 8mm producers. And two other companies, TDK and Polaroid, almost simultaneously announced that they would market the full range of 8mm lengths (30, 60, 90, and 120 minutes).

Most activity, however, centered around varieties of 1/2-inch Super High Grade videotape under one name or another. Maxell's is EX (though it is described as a premium-brand cassette with a standard-brand price). Fuji retains the Super HG Hi-Fi and Super HG rubrics but has improved the products with still finer Beridox parti-



TDK'S LINE OF 8mm VIDEOCASSETTES



FUJI'S SUPER HG HI-FI VIDEOTAPE

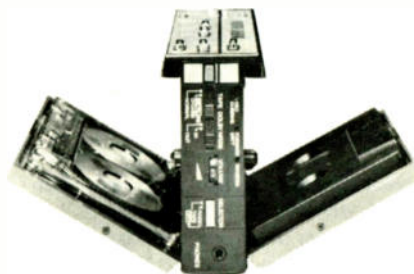
cles. BASF's improvements are designated Extra Quality, or (rather confusingly) EQ. Memtek likewise showed upgrades, from Pro Series to Pro Series Plus. And Konica has added both Super Hi-Fi and Super Pro to fill out its videocassette line.

Fuji has announced a Beta tape, called H-321B, that is formulated to withstand the rigors of in-the-field Betacam use, including electronic news-gathering. According to Fuji, the coating is so tough that it can take an hour of freeze-frame playback without noticeable picture-quality loss. Lengths of 5, 10, and 20 minutes will be available.

By the way, the only "introduction" I noticed in audio cassettes was TDK's improved SA-X dual-layered Super Avilyn formulation, claimed to be the quietest on the market. The less-premium SA tape also was said to be improved. Both are Type 2 chrome-compatible ferricobalts. *R.L.*

TAPE EQUIPMENT

NOTHING MUCH HAPPENED HERE. ONE reason is the anticipated arrival later this year of digital cassette (DAT) recorders—which are now, as they have been for several years past, the darlings of Japa-



PANASONIC RX-HD10 DUAL-WELL PORTABLE CASSETTE PLAYER

nese r&d labs. In Las Vegas, only one company—Onkyo—showed a digital recorder, and that prototype's chassis contained just the transport and its control circuits, the digital-audio encoding and decoding boards having been left behind in Japan. We were told that the Onkyo unit and several models from other companies are expected to debut at or before the Japan Audio Fair in October. We also learned that all units will be rotary-head (RDAT) models, for which a standard already is in place.

With all this work being expended on RDAT, it's no wonder that I saw no new open-reel analog gear and heard little about digital encoders for use with VCRs. These two categories presumably will be eclipsed in the market when home DAT equipment finally appears. (The 8mm video format offers a digital-audio option, but it's an analog-companded 8-bit system,



ONKYO'S PROTOTYPE DT-1000 DAT DECK



PIONEER CT-1170 DUAL CASSETTE DECK



SANSUI D-505 CASSETTE DECK



LUXMAN K-406 CASSETTE DECK



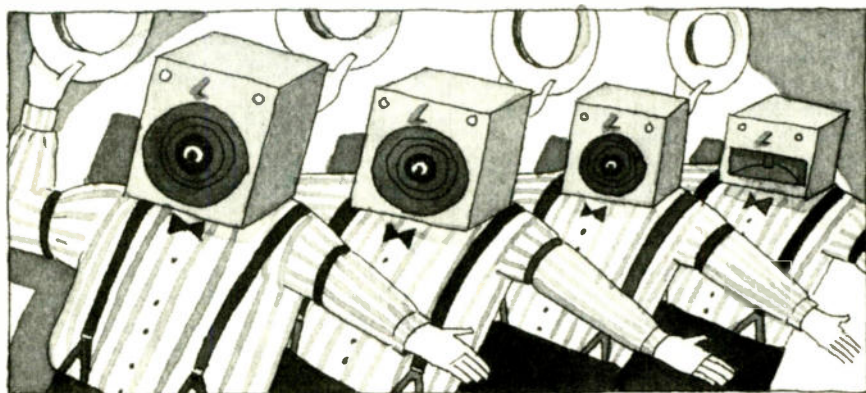
SHARP RT-W000BK DUAL CASSETTE DECK

on-board equalizers). But the deck does have one wrinkle that is both clever and, as far as I know, unique: When you adjust the sliders for best playback sound of the original and then switch to double speed to make a copy, the action of the equalizer automatically shifts up an octave (just like the sound from the double-speed tape) so that the copy is correctly equalized.

The most impressive showings in cassette gear were, as often has been the case, from Nakamichi, and they date from last fall. In October the company announced an inexpensive two-head deck for professional use, the MR-1 (\$499). In November came the CR-5A (\$850, with a wired remote control) and the CR-7A (\$1,350, with a wireless remote and some additional convenience features). Both have three discrete

heads, Dolby C, and manual override of automatically-sensed tape type for both bias and EQ. The big difference between them is the CR-7A's alignment system, which enables you to adjust not only bias and sensitivity, but also playback azimuth, via a front-panel knob.

There were a few new decks in the middle price range—say, \$200 to \$500—with good specs, Dolby C, and more than minimum convenience features. I noticed models from Sansui, Proton, and Dual. Luxman's K-406 also fits into this group, though it adds DBX noise reduction and Dolby HX Pro headroom extension. And while there was a scattering of less impressive models and the semiannual profusion of portables, the pickings were the slimmest in years. *R.I.*



LOUDSPEAKERS

suggesting that its audio quality may be inferior to that of any of the above.)

That leaves us magnetic-media enthusiasts with the good old analog cassette, which, like the LP, should coexist with DAT and the Compact Disc for many years by virtue of its enormous market penetration. Neither the LP nor the cassette is the sonic equal of the CD; however, some companies are beginning to combine CD player with cassette recorder, creating an ease of dubbing that seems calculated to make record-company execs reach for the Valium. (Parasound put both into a home component, Panasonic placed them in a three-piece "portable" ultra boom box, and Pioneer had a boom box with dubbing deck and room for a slip-in CD player.)

And while we're on the subject of dubbing, I'll mention only one dual-well cassette deck. Teac—among the most prestigious names in the field—introduced the W-880RX, with a built-in five-band equalizer. That in itself isn't news (dubbing boom boxes were among the vanguard in offering

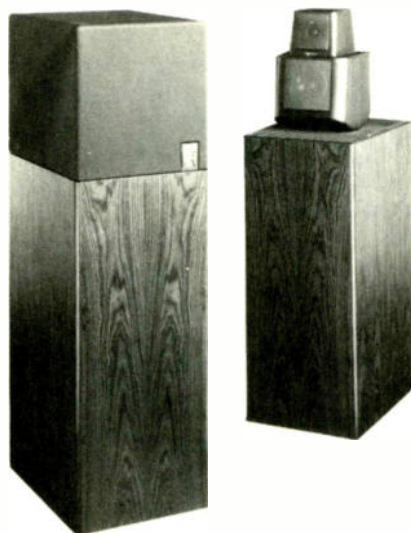
AS RECENTLY AS A YEAR AGO, CARRYING A Compact Disc into a CES exhibit room full of high-end equipment was more trouble than one's reputation as an audiophile was worth. Now I can carry around two or three sample discs and use them as reliable references for comparison almost everywhere—without getting out the portable CD player I keep stashed away

just in case. And only once was I haughtily dismissed as a tin-eared boor by an anti-digital demonstrator. Short listening tests with the discs formed the basis for any opinions expressed here about the sound of a new speaker.

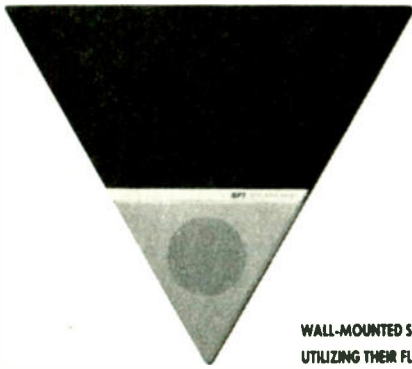
Innovations in loudspeakers appear at CES at a steady pace seemingly unrelated to developments in other component categories. Often as interesting as the debuting speakers are refinements of older ones, particularly if the speaker that has been modified was good to begin with. Two prime examples are a new crossover for the Snell Acoustics Type A-III, which reduces a slight lower-midrange thickness that was one of that model's few real faults, and a much-smoother-sounding reequalization and crossover redesign for DBX's flagship, the Soundfield One.

Worthwhile refinements also have been included in the latest version of the Acoustat Model One, a three-way system comprising two tall, narrow electrostatic panels and a common cone-subwoofer module. New transformer technology and a higher-resistance coating on the panels give the Model One a more even response. Price is \$1,250 complete.

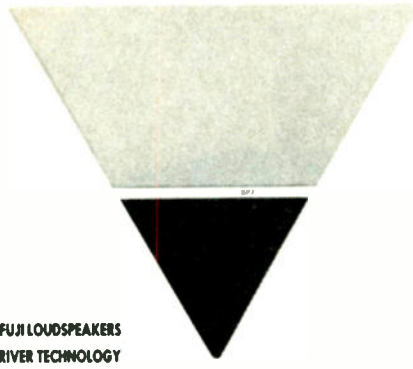
Most of the interesting new loudspeakers at this show were in the middle to up-



KEF MODEL 107 LOUDSPEAKER

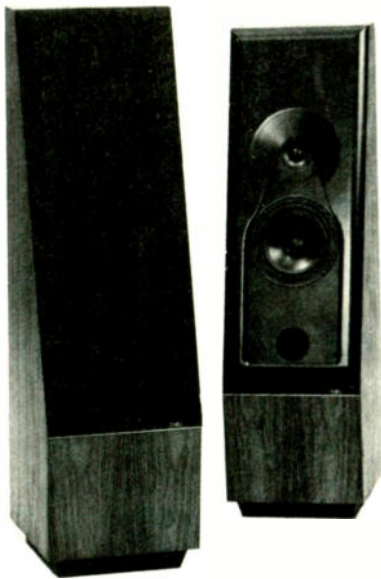


WALL-MOUNTED SAWAFUJI LOUSPEAKERS
UTILIZING THEIR FLAT-DRIVER TECHNOLOGY



per-middle price range (from \$500 to \$2,000). Many in this category seemed to have been designed primarily for smooth midrange and three-dimensional imaging. The most reliable method of achieving these goals is to move the speakers away from one or more room boundaries and put them in small boxes.

Following this trend, Snell introduced the Type Ci (\$1,800 per pair), designed to duplicate the sound of the larger Type A-III with small sacrifices in power handling and bass extension. The company also has a new low-frequency electronic crossover that can be set for 1st- through 4th-order



THREL CS-1 LOUSPEAKER

operation (that is, for attenuations of 6, 12, 18, or 24 dB per octave); output impedance is low enough to drive long cables of virtually any type. The projected price is \$525.

From Celestion comes the revision of the highly regarded SL-6, called the SL-6S. The speaker features a new cabinet and aluminum dome tweeter and a redesigned woofer. Price is \$850 per pair. Like many other two-way systems in which the tweeter is mounted directly over the woofer, the SL-6S had the best stereo image when heard from the level of the tweeter axis or below. Bass response was surprisingly smooth and full considering the cabinet's

compact dimensions. One way to place the seated listener below a speaker's tweeter axis is to provide a stand with a slightly tilted top; the Monitor Audio R-652 costs \$1,300 per pair, and the price includes tilting stands in matching wood.

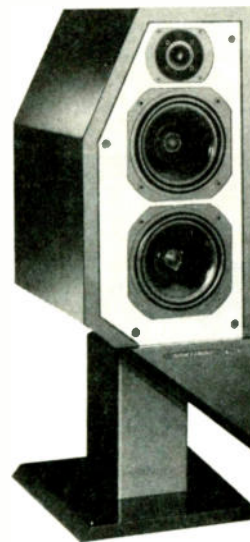
Sawafuji is the Japanese company that developed flat, square drivers known as Dynapleats. This year it introduced a ribbon tweeter whose magnets are made of a plastic called Teslan, said to combine mechanical stability and light weight with high field strength. The tweeter appears in the Dynawave series of boxed speakers selling from \$350 to \$600 a pair. Sawafuji's display seemed to imply that the company is more interested in selling drivers to other manufacturers than speakers to consumers. Another new ribbon tweeter appears in the improved Infinity EMIT, featured in the updated RS series. Replacing the older models RS-7b through RS-11 are the RS-1000, -2000, -3000, and -4000. These have curved front-panel edges with grilles mounted on 1/2-inch standoffs to avoid diffraction effects (\$140 to \$460 per pair).

DCM's new Time Frame TF-700 is a three-way system in a tall, shallow enclosure. Its frequency balance seemed to be rolled off gently at the top end, a characteristic that improves the sound of many CDs. Like other speakers designed for placement far from room boundaries, the TF-700 needed a separate subwoofer for best performance below 50 Hz, at least in the particular room where we heard them. An interesting approach to getting good bass from small speakers located in the middle

of the room came from a company called Man. The Man speakers (\$1,200 per pair) have two drivers mounted on a sloping panel on top of a tall cylindrical column. The back of the woofer feeds a transmission line whose exit is a ring-shaped opening at the bottom of the column.

The use of multiple drivers in each part of the frequency range to attain lower distortion has achieved its greatest success when the drivers have been arrayed in a vertical line. Kindel Audio uses this principle in their PLS-A (\$1,700 per pair), a two-way system with six 6-inch woofers next to a stack of sixteen 1-inch tweeters.

The new flagship of the KEF line—not counting the company's huge \$18,000 custom-built, internally quad-amplified studio monitors—is the Model 107. Midrange and tweeter are mounted in a separate pivoting



BOWERS ACTIVE ONE LIMITED LOUSPEAKER

subenclosure, as in KEF's Model 105. In each cabinet, two woofers are used in a coupled-cavity configuration similar to that in the company's Model 104/2 (test report, November 1985): They fire into an internal cavity whose only outlet is on top of the enclosure just below the midrange and tweeter cabinet. An associated electronic box called the KEF Universal Bass Equalizer, or K-UBE, offers continuously variable bass level, damping (Q), and bass extension, which can be set to 50, 35, 25, or 18 Hz. A

BOSTON ACOUSTICS A-40 (LEFT) AND A-60 SERIES II LOUSPEAKERS



K-UBE and two 107s cost \$3,900.

Ohm Acoustics showed the Walsh 5, the largest of its Walsh-driver models. Almost as big as the original Ohm F, it is far more sensitive, putting out 90 dB at the standard 1-watt-into-8-ohms input. The efficiency is partly the product of a large and heavy magnet assembly; price is \$4,000 per pair.

What must be the most elaborate small two-way speakers ever built are the Wilson Audio Tiny Tots. The WATT's, as Wilson calls them, are meant to serve as portable monitors for remote recording situations in which it isn't practical to take along their somewhat larger cousins, the Wilson Audio Modular Monitors (WAMMs). The WATT's, small and cheap only by comparison with that company's other loudspeakers, weigh over 60 pounds apiece (thanks to the generous use of sheet lead as a damping material in the enclosure) and cost \$4,400 to \$4,800, depending on finish. At the show they sounded bright on top but very delicate and airy, giving a pretty good replica of the amazing imaging for which the WAMMs are justly famous. *E.B.M.*



TURNTABLES AND CARTRIDGES

THE NEAR-UBIQUITY OF THE COMPACT Disc makes no impression on partisans of the analog disc, who are as adamant as ever in defense of its virtues. Like many technological products, the turntable has realized its greatest achievements in its declining years. Still, it is obvious to even the most deafened and footsore showgoer that the number of new developments in turntables and cartridges is small and dwindling fast.

Representing the Japanese high-tech approach to turntable design is the new Denon DP-59L, a quartz-locked direct-drive model with a 5½-pound platter and a



DENON DP-59L TURNTABLE

motor strong enough to bring it up to speed in just a third of a revolution. Speed is adjustable in 0.1-percent increments to ±9.9 percent of nominal values. The \$600 price includes an electronically controlled servo-tracking tonearm.

Micro-Seiki is one of the few Far Eastern companies still using belt drive for high-end models. Its new BL-99V has a vacuum hold-down platter and costs \$1,000 without tonearm. The unit weighs 35 pounds, plus 7 pounds for the outboard vacuum pump.

A familiar name that reappeared at this show was Dual (now being brought in by Ortofon), which introduced the CS-5000 (\$350), a faintly familiar-looking belt-drive turntable with gimbal-mounted arm. It runs at the three classic analog speeds, for those of you who still have 78s.

The simple-is-better school is represented by the Revolver, a British belt-drive model in which speed is set by the time-honored method of changing the belt's position on a pulley. The motor is exposed, so you don't have to remove the platter to perform this operation. The Revolver can be had without tonearm for \$335 or with a Linn LXX arm and a Linn Basik cartridge for \$450.

Cartridge introductions were few and far between, the major manufacturers apparently satisfied with selling last year's models until they can figure out what to do about the threat the CD poses to their business. In fact, the only new cartridge we noticed was Signet's TK-10ML Series II, a moving-magnet unit incorporating oxygen-free copper wire. *E.B.M.*

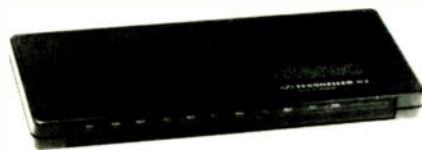


SIGNET TK-10ML SERIES II CARTRIDGE

MISCELLANEOUS ACCESSORIES

NATURALLY, THE MARKETING OF 8MM videocassettes by almost every major tape manufacturer has been accompanied by a rush to offer 8mm VCR cleaners or decks have been bought and extensively used—let alone sullied—at this early date in the format's history, the gold-rush mentality of the accessory companies occasioned some proportionally cynical comment amongst us industry-watchers at the CES. But that's one of the perils of industry-watching.

One of the companies in question is Geneva—or rather "The Geneva Group"—



SENNHEISER SI-2 INFRARED TRANSMITTER

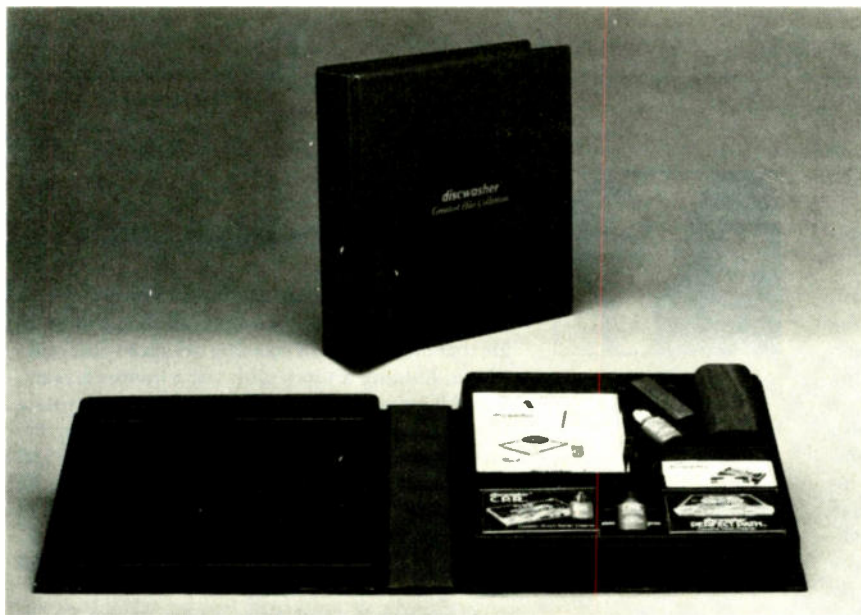
which last year spun off from Nortronics as a separate accessories firm. When you consider this metamorphosis, it's not surprising that the name encompasses so many familiar products—yet new accessories are quickly being added. An even more comprehensive line has been introduced by AM (AM Kemi a/s of Denmark), covering virtually every recognized base in the field—except that, in place of an 8mm cleaner, there's one for the European Video 2000 format, which is a rarity here (and in Europe, too). Particularly welcome, I'd say, is



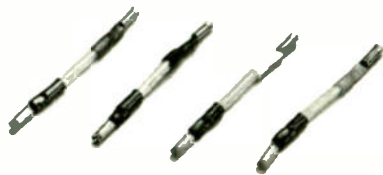
SENNHEISER HDI-2 HEADPHONE WORKS WITH SI-2 ABOVE.

AM's cleaner/demagnetizer housed in an audio cassette shell and designed specifically for automatic-reverse decks.

Oxygen-free interconnect cables, lauded for the purity with which they transmit electrical signals, are becoming ever more readily available, despite the continued lack of scientific evidence establishing their audible superiority. The theory (so-called) is that standard (oxygen-rich?) copper wire contains much higher percentages of impurities, which disrupt the electron flow—like "rocks in a stream," according to Scosche, one of the suppliers of a variety of oxygen-



DISCWASHER "GREATEST HITS" COLLECTION OF AUDIO ACCESSORIES



SIGNET SK-485 LC-OF HEADSHELL WIRES



SIGNET SK-481 INTERCONNECT CABLES

If one of your components blasts you out of your seat when switched in or overloads an input to which it's attached, you may want to try the DB Systems DBP-16 attenuator (\$11.95 per pair). Between its gold-plated pin connectors is a 12-dB pad yielding an input impedance of 13 kilohms and an output impedance of 2.5 kilohms. Gold-plating is, of course, *de rigueur* for connectors on high-performance signal cables. And among Memtek's new Memorex accessories is a gold-plated F connector for FM or TV antenna/cable use—the first of its sort I've seen.

Although they weren't new, the two versions of Nady's 49-VR wireless microphone for video cameras were new to me at the show and priced within the range affordable to home video recordists. They should

free cables. Another is Signet, which has added pin-terminated signal cables and interconnect sets to go between phono cartridges and headshell terminals, with gold-plated sheath terminals on each end.

A more surprising entrant into the arena of high-end wire is Tandberg. Known more for its expertise in equipment, the company says it has been doing research in transmission-line theory and dielectric adsorption. To prevent the latter, Tandberg's cables use a proprietary polyolefin insulation that, the company says, is less given to adsorption (and therefore signal degradation) than any other material currently in use. Among the details are locking gold-plated pin connectors and matched characteristic impedances to prevent internal signal reflections. The TIC-1 interconnect cables come in 1-meter (approximately 3-foot) lengths for \$125; Tandberg's Audio Transmission Speaker Cable costs \$150 for the 15-foot TSC-15 or \$200 for the 25-foot TSC-25.

KOSS'S NEW SST HEADPHONE LINE



bring about a vast improvement in sound quality over that provided by standard camera-mounted mikes, in a variety of taping situations. The lavalier version with body-pack transmitter costs \$160; the hand-held model with built-in transmitter is \$200. Sima and Azden introduced similar devices. Nady also showed infrared wireless headphones, which solve the problems of radio-frequency interference caused by some previous cordless models. The headset, with a sensor atop the headband, sells for \$60; many sets may be used simultaneously within the rated 35-foot range of a single infrared transmitter costing \$120.

Sennheiser's HD-540 headphones (\$159) have integral acoustical-silk damping and a new ear-cushion configuration. The design is said to prevent standing waves from building up between headphone diaphragm and eardrum. The company also introduced the HDI/SI-2 wireless headphone system. Connected to an audio signal source, the SI-2 transmitter (\$145) "broadcasts" the signal with infrared light. The HDI-2 rechargeable portable receiver/headphone (\$132) picks up the beam and relays the sound in stereo, mono, or two-channel mono.

And finally, as an inveterate recordist, I'm prompted to say (as I have in the past) that I'm glad Koss still makes headphones with big, cushiony earpieces to seal out ambient noise for monitoring purposes. Few companies do these days, and far fewer offer the audio quality and value of the Pro Plus line, which, we were told, has been sonically redesigned from last year. It reaches from the Pro-4X Plus (\$85) down to the K-6X Plus (\$30). Continuing the isolation tradition, but with less bulky designs, are the top two models of Koss's new SST line, the SST/7 and SST/6 (\$70 and \$60, respectively).

R.L.

MUSK TO OUR EARS



E D I T E D
B Y
G E O R G I A
C H R I S T G A U
A N D
T E D
L I B B E Y

ALTHOUGH I VOTED FOR HÜSKER DÜ'S *NEW DAY RISING* in my list of the Top Ten Albums of 1985 for the *Village Voice* Pazz & Jop Critics' Poll, I didn't have high expectations when my brother and I went to their gig at Irving Plaza recently. Hüsker's *Zen Arcade* was a critics' favorite in 1984; then again, *Flip Your Wig* also placed this year, an inferior follow-up to *New Day Rising* whose pop hooks jump out uncomfortably instead of hiding mysteriously in the din. I often hedge my bets around Bob the Big Cheese, *Voice* senior editor and originator of Pazz & Jop—and soon-to-be Even Bigger Cheese if the TV pilot is sold for *On the Record*, which would present him and L.A. critic Steve Pond in a record-review format intended as rock 'n' roll's answer to *It the Movies*.

But second-guessing critic relatives and their polls was an irrelevant pastime once we got indoors, for besides being a favorite among writer types, Hüsker Dü are more exciting than we can make them sound in print: loud, fast, furious, funny, and for real. This trio, started by guitarist Bob Mould and drummer Grant Hart in 1978, had scheduled a special early show for kids under drinking age, who were responding the way I thought only fans under the influence did. Or maybe I'm not giving the human spirit enough credit. Whether pogoing in place, mouthing every indecipherable word, or hurtling themselves toward the stage over the bodies of other kids, they were an intense crowd, absorbing every ounce of energy that lurched from the stage.

Hüsker Dü managed themselves and produced, designed, and put out their own records (distributed by the hardcore label SST, P.O. Box 1, Lawndale, Calif. 90260) until they signed a contract with Warner Bros. (*Candy Apple Greyships in March*.) Their music? Anywhere from the compassionate but ear-splitting plea "I Apologize" to "The Theme from *Mary Tyler Moore*," a tribute these Minnesota natives transform into a nervy piece of punk angst; try singing "Who can turn the world on with her smile?" through gritted teeth and you'll see what they're driving at. The bond I witnessed between the audience and the group wasn't just for show; as teenagers spilled out of the club, bassist Greg Norton stood in the stairwell, bracing himself to the praise with one foot pressed against the wall. "Great show," they said. "Great audience," he replied.

Confronted with such humility and talent, I now look forward to checking out another critics' fave, the Mekons. *Fear and Whiskey* (distributed by Dutch East India Trading, P.O. Box 570, Rockville Center, N.Y. 11570) is an eerie eulogy for disconnected youth: a girl whose father complains she has no respect, a war vet who cries, "It's hard to be human again." Real ghost-story stuff. Musically, these Brits sound like a cross between Television and the Raincoats; it's no surprise then that the group, currently an amalgam of seven or eight players, has been making records since 1977. A new one, *Crime and Punishment*, has just been released.

Georgia Christgau

"THE LADY REMEMBERS"

FOR A FRENCH GIRL BORN AT THE TURN OF THE CENTURY, there were enough wonderful things to do in life that the thought of standing out on a rock somewhere, holding a torch aloft for a hundred years, would have seemed quite horrifying. But one young lady named *Liberté* went ahead and did just that: She ascended her perch in New York Harbor in 1886 and has stood there ever since, torch in hand, for all the world to see. In honor of her 100th birthday, a lot of Americans are doing special things to celebrate—including making sure that she looks as young and pretty as the day she arrived.

Composer Richard Adler, widely known for his music for *The Pajama Game* and *Damn Yankees*, two years ago turned his thoughts to America's most beloved foreign visitor. With the encouragement of Lee Iacocca and the Statue of Liberty-Ellis Island Foundation, he set out to commemorate in music the gift of *Liberté* to the people of the United States. The result is a 43-minute symphonic tribute in seven movements entitled *The Lady Remembers*, which was premiered by Günter Herbig and the Detroit Symphony on the occasion of the statue's 99th birthday. This month, a recording of the work by the same forces is slated for release on RCA Red Seal (to be available in early May), in time to mark the statue's centennial celebration on the Fourth of July. The recording has been underwritten by Chrysler.

Mr. Adler gave titles to the first six movements of his score and attempted in the music of each one to reflect different aspects of *Liberté's* history, meaning, and promise. The sections, in order, are "The Gift," "The Assembling," "Illusion," "The Invitation," "Disillusion," and "The Seekers." In the finale, motifs from several of the preceding movements are woven together to form a powerful concluding tableau.

The suite-like arrangement of Adler's piece is nothing new: He used a similar approach in his *Wilderness Suite* of 1983, also recorded by RCA (with the Utah Symphony conducted by Charles Ketcham, ARL 1-4726). What is novel is that he has been able to spin off a pair of songs from *The Lady Remembers* that may well turn into hits on their own. The first, "Born to Liberty," is based on material from the section entitled "Illusion." The second, "The Names of the States," actually appears as a song in the suite's fourth movement, "The Invitation," and is performed on the new release by Julia Migenes-Johnson.

Red Seal plans to issue several other first recordings of works by American composers in the coming months. Due for fall release is John Corigliano's *Pied Piper Fantasy* for flute and orchestra, written for James Galway. In this performance, Galway joins the Eastman Philharmonia conducted by David Effron. The coupling is Corigliano's *Voyage*. Next year, Peter Schickele's String Quartet No. 1, subtitled *American Dreams*, will be paired with Ezra Laderman's String Quartet No. 6 on a disc by the Audubon Quartet.

Ted Libbey

CLASSICAL

A report from the trenches on the American market's battle for its share of Compact Discs



ILLUSTRATIONS BY GARY UNDERHILL

BY MICHAEL H. GRAY

Unquiet on the Western Front

scrambling for CD pressing time. For although the worldwide production capacity for records and cassettes, being virtually unlimited, created a buyer's market for these media, Compact Discs are still part of a seller's market—in

which the major players are not just the record companies but the 13 CD pressing plants that now supply the world's demand.

Four of these plants are in Europe, including the largest: the Polygram factory at Hannover, West Germany. Seventy-five percent of its product goes to Polygram's worldwide needs; 25 percent, to other contracted companies. Also on the continent are MPO in France, MCS in Switzerland, and Sonopress in West Germany. Across the Channel in England are the Nimbus plant at Wyastone Leys, near Monmouth, and the new Thorn-EMI facility under construction in Swindon.

By the end of 1985, seven plants were operating in Japan, five of which—Sony, Nippon Columbia/Denon, JVC, Toshiba, and Sanyo—were feeding output directly to associated record companies. The other two—Matsushita/Technics and ETA, Ltd.—were pressing CDs on a custom-order basis. Most Japanese plants are planning expansion this year, including JVC (which will significantly boost its 1985 production rate of 1.5 million discs per month), ETA, and Sanyo (which plans to double its 1985 capacity in 1986).

This leaves the United States, the largest single music market in the world, with just one operating factory, Sony's Digital Audio Disc Corporation in Terre Haute, Indiana, which sends almost all of its

IF YOU'RE AN AMERICAN CLASSICAL LABEL'S MARKETING chief, you go to sleep each night hoping that your company can squeeze just a few more Compact Discs out of your balky suppliers and that in the meantime your customers will continue to buy full-priced LPs. If you're a classical marketing executive in Japan, you shut your eyes thanking your bosses for building that CD plant your American colleagues wish *they* had built, the lack of which seems to cause all their restless nights. If you're a classical music buyer, you drop off each night wishing that soon you'll stumble on some of those new CDs you've read so much about, but that you never seem to be able to find at your favorite record store. And if you own that record store, you're not sleeping well at all, since the customers who used to hover over your LP browsers now want nothing but those Compact Discs you've had on back order for the last six months.

Just how bad—or good—is the classical CD situation? The answer largely depends on where you look, whom you ask, and what factors you choose to compare. The first, and best, place to look for problems is on the supply side. Large CD plants cost a lot of money, take approximately a year to build, and thereafter need months to achieve an acceptable ratio of usable to defective discs. American companies, CBS excepted, left those risks to the Europeans and the Japanese; as a result, the U.S. recording industry is now

Michael H. Gray is the music librarian of Voice of America.

current million-per-month output to CBS Records. The monthly yield of the Sony facility is expected to increase to 2.2 million CDs by the end of 1986. Plans have been laid for a plant at Capitol's Jacksonville, Illinois, record pressing center (annual production of seven million CDs is anticipated), and a Philips/Du Pont factory (one of seven projected worldwide) is scheduled for completion in North Carolina by year's end, with an annual capacity of twelve million to fifteen million discs. A pressing service for audio CDs is to be incorporated in 3M's CD ROM facility in Minnesota. (ROM stands for "read-only memory," a permanent memory that can be read back but not changed. There are extensive applications in computer software; the capacity of a CD ROM is equivalent to about 1,000 floppy disks.)

The number and capacity of the world's Compact Disc plants normally wouldn't be of much interest to consumers, except that now there are too few of the facilities, and consequently there are shortages of CDs almost everywhere. This seems to be less of a problem in Japan, where hardware and software industries have, since the introduction of the CD there in October 1982, worked assiduously to meet the demands of the market. By late 1985, it was becoming apparent that the CD had gained equal if not superior



status to the LP in Japan. As a result, the LP there is swiftly becoming a medium primarily for bargain-price reissues and boxed sets too bulky (and expensive) for the CD format.

One indication of Japan's current lead in the production and consumption of Compact Discs is the fact that only a quarter of the CDs newly released there in the last half of 1985 by CBS, RCA, and Angel could be found in the American catalog at the beginning of 1986. Even taking into account differing marketing and scheduling practices, and issues with strictly local interest in each country, the gap painfully illustrates that American companies are faced with far more limited resources than those available to their Japanese counterparts.

Another related concern of several American labels is competition from "gray market" Japanese and European CDs that some retailers import directly and put on the shelf long before the product slated for



American release is available through approved channels. CBS has had particular difficulty with this practice because its Japanese affiliate, CBS/Sony, is way ahead of it in remastering and reissuing highly desirable material from the extensive Columbia stereo catalog. For example, CBS/Sony CDs of most of Bruno Walter's late-Fifties and early-Sixties work with the Columbia Symphony have been obtainable for more than a year on the gray market; CBS is only now releasing its own discs. A further complication arises from the fact that sometimes the remasterings are not the same (CBS says its producers have not always been satisfied with the work being done by the Japanese).

Most American buyers and record companies don't know what's going on in Japan and couldn't do much about it if they did, even though Japan has, by some estimates, one third of the world's classical record market and a CD sales profile (from a low of 1,000 copies per year for an average issue to over 10,000 annually for a hit) that shows that the nation plays ball in about the same sized park as the U.S. and Europe do. At the moment, American firms are struggling to meet demands for CDs that few of them say they can satisfy, but that Japanese concerns anticipated and built for.

Some American classical companies were apparently able to foresee what might happen with CD and prepared for it. If you don't own a CD plant, you find reliable suppliers who do and then plan your production and marketing to meet the inevitable snags, delays, and manufacturing shortfalls.

One way to be successful is to be small, and specialized, and to be there before the other guy. Labels like Telarc, Delos, and Pro Arte, which fit this definition and also are all-digital and, except for Pro Arte, all-CD (Telarc still presses LPs, but sells ten times as many CDs and plans to discontinue LP production), have found that by spreading production among several different suppliers, they can reduce delays caused by hang-ups at any one location.

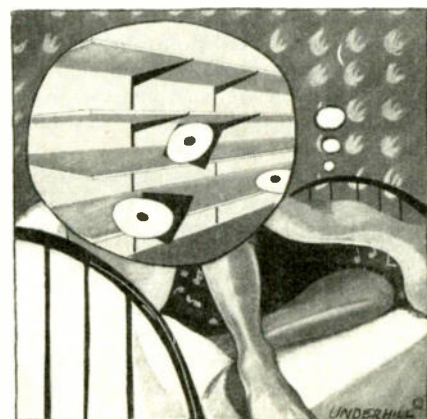
Telarc, with 16 to 17 new issues this year, buys CDs from Matsushita (its key supplier) as well as from Sanyo and Polygram (for sales to European markets, which so far have lagged behind the company's U.S. sales).

Most of Delos's 36 CD titles introduced this year will be pressed by long-time supplier Sanyo, which helped the label set up distribution in Japan; this output will be supplemented by custom orders placed with ETA and MPO and by production at 3M and two as-yet-unnamed European factories.

Pro Arte, like well-connected Delos, relies on extensive personal contacts with its suppliers. The company will get about a million Compact Discs this year from JVC, its primary presser (also the main source for Motown, Warner Brothers, and RCA Japan). JVC will market Pro Arte CDs in Japan, and Pro Arte will handle some JVC releases here. Additional discs from three more companies will expand Pro Arte's catalog by some 55 to 60 new titles, mostly classical, this year. (Using multiple suppliers to spread production is a strategy not confined to small companies. Now that EMI has belatedly decided to climb on the CD bandwagon, the firm uses five different plants: its own Toshiba site in Japan, Polygram, MPO [mostly for Pathé recordings], CBS, and Nimbus.)

Being small can bring big benefits in the domestic market. Last year, Pro Arte sold more than 10,000 copies of its best-selling CD. Delos sold more than double that number of its top title, while Telarc, a regular on *Billboard's* "Top Compact Discs" classical chart, sold between 20,000 and 50,000 copies of most of its 1985 releases.

Most small U.S. companies, however, don't have the time or ability to canvass potential CD producers to ensure an ample stock. Vanguard gets almost all of the 1,000 to 2,000 copies it sells annually of most of its classical CDs from its Japanese licensee, King Records, which produces additional discs beyond its own needs for Vanguard to sell Stateside. Musicmasters, the retail label of the Musical Heritage Society, managed to secure production of its Compact Discs at ETA. On the other hand, MHS's mail-order business obtains its CDs either as finished discs from its approximately 30 licensed sources or buys into pressing runs of its partners to split costs and ensure a share of the final product. Being a small label can also mean getting caught out in the cold by the CD crunch, which is what happened to Moss (CONTINUED ON PAGE 88)



THE CD SPREAD

MINI-REVIEWS OF THE LATEST COMPACT DISCS

BY ROBERT E. BENSON, IRVING KOLODIN, NOAH ANDRÉ TRUDEAU, JAMES WIERZBICKI, AND BILL ZAKARIASEN

NEUMANN DIRECTS SUK

THE GREATEST WORK OF ITS KIND TO COME from Czechoslovakia outside of Dvořák, the *Asrael* Symphony of Josef Suk has finally received an up-to-date CD recording to replace the long-unavailable 35-year-old Supraphon LP version. This superb new performance appears on the same label and, as before, features the Czech Philharmonic Orchestra. Václav Neumann is at the helm this time, and his conducting seems to possess all the breadth of vision and power needed; in fact, his interpretation sounds virtually identical to that of the late Václav Talich in his pioneering effort.

The sprawling yet amazingly cohesive five-movement design is one of Mahlerian grandeur, purpose, and expression. Suk dedicated the *Asrael* to the memories of his mentor, Dvořák, and his wife, Otilie, who was Dvořák's daughter. (Their deaths occurred within weeks of each other in 1904.) It is one of the most deeply felt and communicative works in or out of the repertory. Those listeners who are unfamiliar with it are due for a shake-up. Spectacularly wide-range sound makes it all the more commendable. Playing time: 57:54. (Supraphon CDS 7404. Distributed by Intersound.)

B.Z.

SLOW START TO A MAHLER CYCLE

WITH THE CURRENT PROLIFERATION OF MAHLER symphonies on Compact Disc (complete cycles exist or are under way with Abbado, Bernstein, Levine, Maazel, Sinopoli, Solti, Neumann, and Tennstedt, and some individual symphonies are led by others), Denon's projected series with Eliahu Inbal and the Frankfurt Radio Symphony Orchestra is outclassed. On the first discs to appear, offering Nos. 1 and 2, the playing is cautious; moreover, the strings sound thin, and Inbal's frequent grunting is a distraction. The same conductor and orchestra have recorded Bruckner's Fourth in its original version for a Teldec disc (CDT 42921), with outstanding results: rich orchestral sound, good presence, and wide dynamic range,

very different from the distant pickup and shallow sound of these Denon recordings. The glories of Mahler's symphonies are not experienced here, but we can always hope that future releases in the series will be more effective. Playing time for Symphony No. 1: 54:55. (Denon CD 7537.) Playing time for No. 2: 85:02. (Denon CD 7603/4.) R.E.B.

A STRAVINSKY PAIRING FROM BERNSTEIN

THE *FIREBIRD SUITE* (1919 VERSION) AND THE *PULCINELLA SUITE* (1947 VERSION) constitute the third release in the Stravinsky series that Leonard Bernstein and the Israel Philharmonic Orchestra embarked on for Deutsche Grammophon in 1983. Like its immediate predecessor (offering *Pétrouchka* and the *Scènes de ballet*, on Compact Disc as 410 996-2), this is a concert recording. While there is no objectionable audience noise, the performance does show the strains of battle. Intonation in the brass is certainly flawed by the time we get to Kashchei's infernal dance, and here and there in the *Pulcinella* Suite one notices slightly anticipated—or delayed—attacks in the strings. Furthermore, the sound quality is in no way brilliant: Dynamic range is so limited that a listener has to remind himself this really is a Compact Disc. There's something to be said for the energy of Bernstein's readings and the enthusiastic response he draws from the orchestra, but in general this is not a recording destined for the top of the charts. Playing time: 44:58. (Deutsche Grammophon 415 127-2.)

J.W.

DOMINGO SHOWS HOW IT'S DONE

NO MATTER WHAT THEY SAY ABOUT THE CUDLY guy with the beard, Plácido Domingo still gets my vote for the world's champion tenor, and he has never sounded so good—so completely in control of vocal production, diction, dramatic nuance, lyric line, and everything else that matters—as in these excerpts from the bread-and-butter Italian repertory: Verdi's *Aida*, *Nabucco*, *Il Trovatore*, and *Don Carlos* and Puccini's *Manon Lescaut* and *Turandot*. The *Don Carlos* items come from a

new release, and the others are drawn from complete recordings of the respective operas issued by Deutsche Grammophon between 1982 and 1985. I had sampled most of the material when it was released on LP, so the quality of these performances came as no surprise; hearing the music on Compact Disc was nevertheless, as they say, a mind-expanding experience, rather like being allowed to eavesdrop—if only for a few minutes—from the optimal seat of an acoustically perfect opera house. Playing time: 58:55. (Deutsche Grammophon 413 785-2.)

J.W.

MENDELSSOHN IN NEED OF MAGIC

MUSIC FROM MENDELSSOHN'S MAGICAL SCORE for the Shakespeare play *A Midsummer Night's Dream* is found on three new recordings conducted by James Levine, Peter Maag, and Árpád Joó. None of them has exceptional merit. All contain the familiar excerpts (Overture, Scherzo, Song with Chorus, Intermezzo, Nocturne, Wedding March); Maag and Joó offer two brief additional selections.

The Chicago Symphony Orchestra plays with precision for Levine, but the magic is missing, and Deutsche Grammophon's engineers offer thin strings and orchestral textures very unlike the rich natural sound of this magnificent ensemble. The well-filled CD also contains excerpts from Schubert's *Rosamunde*, but the performance lacks the grace and richness of Colin Davis's on a recent Philips CD, which also includes the composer's Symphony No. 9. Playing time: 64:02. (Deutsche Grammophon 415 137-2.)

Maag's 1958 recording of *A Midsummer Night's Dream* with the London Symphony Orchestra has been recognized as one of the finest, but on this new one, with the Tokyo Metropolitan Symphony Orchestra, he is a bit wayward in the Overture, distorting the line of the music. The Japanese ensemble, however, performs very well. Playing time: 44:43. (Denon CD 7564.)

Joó's version is distinctive for its utilization of two boys as soloists instead of two sopranos, but some of the playing by the Phil-

harmonia Orchestra is untidy. Engineering, by Harold Lawrence and Bob Auger, is excellent, but the CD is recorded at a low level. Playing time: 48:56. (Sefel CD 5025. Distributed by Intercon Music Corp.) *R.E.B.*

KARAJAN'S SIBELIUS

THESE ARE ANALOG RECORDINGS—THE Fourth and Fifth Symphonies dating from 1965, the Sixth and Seventh from 1968—yet I find the overall sonic picture preferable to that of most of Herbert von Karajan's recent digital releases: The warmth, depth, and concert-hall perspective found here are missing in many of his newer recordings. These performances with the Berlin Philharmonic Orchestra are models of power and expressiveness. Let's hope that Deutsche Grammophon will continue to explore its catalog for other equally distinguished additions to the CD medium. Playing time for Symphonies Nos. 4 and 6: 65:21. (Deutsche Grammophon 415 108-2.) Playing time for Nos. 5 and 7: 55:09. (DG 415 107-2.)

R.E.B.

KORNGOLD'S "ROBIN HOOD"

HAD RICHARD STRAUSS LIVED MORE OF A *Kinderleben* and less of a *Heldenleben*, he might have managed the musical mix of innocence and fantasy that Erich Korngold created for the 1939 Errol Flynn classic *The Adventures of Robin Hood*. This is a thoroughly satisfying compilation of cues and themes from the film score, played with the right amount of bravura by the Utah Symphony Orchestra. Varujan Kojian's direction is literal and a bit small-minded; I miss the rollicking sweep that Charles Gerhardt brought to his RCA recording of portions of the score. Digital sound is full but understated. Nonetheless, highly recommended. Playing time: 42:41. (Varèse Sarabande VCD 47202.) *N.A.T.*

"SUPERGIRL" SOUNDTRACK

I LIKED THE ANALOG LP RELEASE OF THIS MUSIC (Varèse Sarabande STV 81231). I love the CD incarnation. Suddenly, details of the scoring (performed by the National Philharmonic Orchestra) emerge like magic from the vinyl murk, as composer Jerry Goldsmith and orchestrator Arthur Morton strut their stuff. Every effect is precisely achieved with minimum instrumentation, and the whole is spiced with offbeat sounds. In short, this is what contemporary film scoring is all about. The Varèse Sarabande folks have done a masterful job of transferring the original analog recording made by Eric Tomlinson. Playing time: 40:56. (Varèse Sarabande VCD 47218.) *N.A.T.*

PREVIN'S RACH 2, HIS BEST YET

ANDRE PREVIN HAS A SPECIAL WAY WITH RACHMANINOFF'S Symphony No. 2, and this, his third recording of it, is his finest. Directing

the Royal Philharmonic Orchestra, he is unhurried and reflective in the first and third movements (and what a beautifully played clarinet solo we find in the latter), and he builds the finale up to a wonderful climax with plenty of support from the brass. Telarc's sound is luxurious, if perhaps a bit diffuse, the same engineering approach heard on its fine recent Tchaikovsky Fifth with the same performers. Playing time: 62:45. (Telarc CD 80113.) *R.E.B.*

TWO FROM CINCINNATI

MOSS MUSIC'S *AN INTERNATIONAL SALUTE* WAS recorded in September 1983, Telarc's *Orchestral Spectaculars* in late spring 1985. It is interesting to note the difference in sonic approach of two companies recording the same orchestra—in this case, the Cincinnati Pops under the direction of Erich Kunzel. Telarc has very close-up sound of great clarity and impact; Moss is more distant, with a bigger, broader, less-defined bass and more hall sound. Both approaches should satisfy the audiophile. The orchestra is in better form on the Telarc recording and gives particularly fine accounts of Dukas's *The Sorcerer's Apprentice* and Liszt's *Les Préludes*. On the Moss CD, however, the ensemble is taxed by the subtleties of Strauss's *Vienna Blood Waltz* and does not have a big enough sound for Tchaikovsky's *Marche slave* or Sibelius's *Finlandia*. (Additional selections: On Moss's *Salute*: Gould's *American Salute*, Liszt's *Hungarian Rhapsody No. 2*, and Chabrier's *España*. On Telarc's *Spectaculars*: Rimsky-Korsakov's "Procession of the Nobles" from *Mlada* and "Dance of the Tumblers" from *The Snow Maiden*, Weinberger's Polka and Fugue from *Schwanda the Bagpiper*, and Saint-Saëns's "Bacchanale" from *Samson and Delilah*.) Both CDs could easily have included more music. Playing time for *Salute*: 46:05. (Moss Music Group MCD 10017.) Playing time for *Spectaculars*: 51:18. (Telarc CD 80115.) *R.E.B.*

BACH, HANDEL FROM AUGER

THE HOMECOMING OF AMERICAN SOPRANO Arleen Augér, after a long career based mostly in Europe, was one of the highlights of musical seasons in many cities a few years ago. Not that her abilities were unknown here; she has, after all, 120 recordings to her credit. But it was gratifying to see in performance the woman whose singing has long been regarded as among the most sensitive and tasteful in the business.

The warmth and personableness of Augér's concert appearances—along with her extraordinary vocal agility, impeccable diction, gorgeous tone color, and all-around exemplary musicianship—are eloquently demonstrated in this grab-bag studio recording of both familiar and seldom-heard Bach and Handel pieces. (Sources for the selections are Bach's *Weichet nur, betrübte Schatten*, *Non sa che sia dolore*, and *St. Matthew Passion*, and Handel's *Rinaldo*, *Giulio Cesare*,

Messiah, *Atalanta*, *Samson*, and *Alexander's Feast*.) Augér places the emphasis equally on the supple, subtle shaping of phrases and the communication of the lyrics' emotional content; her interpretations are at once grand and intimate, and that rare combination of *affects* is wholly supported by the contributions of Gerard Schwarz and the Mostly Mozart Orchestra. All in all, this is one of the finest recordings I've come across in months. Playing time: 73:29. (Delos CD 3026.) *J.W.*

BAUMANN STARS IN TELEMANN

THE LONG-STANDING REPUTATION OF WEST German horn virtuoso Hermann Baumann rests at least in part on his skills with the valveless "hand horn." Although he uses modern equipment for these Telemann concertos—three works in D (for one, two, and three horns), one in E flat (for two horns), and one in F (for two horns)—his concern with "authenticity" in Baroque performance practice is nonetheless much in evidence. Attacks are forceful, tone color is extremely bright, and sound in general is as robust in the low register as it is in the high. Baumann is definitely the star, but in the concertos for multiple horns the British players Timothy Brown and Nicholas Hill easily match their guest in both technique and stylistic panache, and under Iona Brown's direction the Academy of St. Martin-in-the-Fields sounds infinitely lighter and more articulate than it ever did with Neville Marriner. On all counts, this is a superb recording. Playing time: 57:43. (Philips 412 226-2.) *J.W.*

MOZART BY PREVIN

IN THIS COUPLING OF MOZART'S PIANO concertos in C minor, K. 491, and in G, K. 453, the high level of musicality achieved by André Previn is remarkable, as is the fact that he triples in the roles of pianist, conductor, and composer of cadenzas. The participation of the Vienna Philharmonic Orchestra is a further plus. But another pair of hands—say, Daniel Barenboim's—might have brought a different kind of emphasis to the finale of the C minor Concerto, which is truly symphonic. The chamber music flavor of the somewhat earlier G major Concerto, however, is delightfully evident. Both cadenzas are clear-minded and properly economical. Playing time: 61:37. (Philips 412 524-2.) *I.K.*

NIN ET AL. BY DANIEL

THE SEVEN SONGS OF JOAQUIN NIN HEARD HERE round out a recital program that includes settings by Manuel de Falla and Enrique Granados. The selections are performed by Susan Daniel, an English mezzo, with Richard Amner at the piano (and tending to be overloud). Daniel's aspirations are worthy, but her voice is not yet equal to the demands put upon it. Playing time: 43:18. (Denon CD 7539.) *I.K.*

A Celebration of Three Modern Masters



Steve Reich

JURTESY NONESUCH

REICH:
The Desert Music.

Reich, chorus, members of the Steve Reich Ensemble and of the Brooklyn Philharmonic Symphony Orchestra, Thomas Rudolph Werner and Steve Reich, prods. Nonesuch 79101-1 (D). (D).

GLASS:
Mishima.

Kronos Quartet, instrumental ensemble, Riesman, Kurt Munkacsi, prod. Nonesuch 79113-1 (D). (D).

ADAMS:
Harmonielehre.

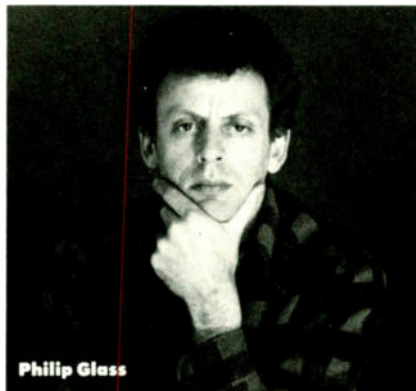
San Francisco Symphony Orchestra, De Waart, Robert Hurwitz, prod. Nonesuch 79115-1 (D). (D).

WITH THE FOUNDING FATHERS OF MINIMALISM—Steve Reich and Philip Glass—nearing their fiftieth birthdays, it is an appropriate time to examine how their music has matured in recent years, how their idioms have diverged, and how they have influenced a younger generation. Each has found a different way to enrich a once austere and impersonal language: Glass by capitalizing on his dramatic instinct to create a highly theatrical music of almost Romantic intensity, Reich by allowing the texts he has set to stimulate an expansion of his melodic vocabulary and timbral palette. Their younger disciple John Adams began his career with a Reichian stance, but has now turned to employing minimal gestures within a tremendously expressive, neo-Romantic context.

Three new releases, all on the Nonesuch label, present us with the three composers' most recent efforts. Of the elders' works, Reich's is the truly significant achievement. Set to texts by poet William Carlos Williams, *The Desert Music* (1984) is a gargantuan conception—50 minutes in length, scored for an orchestra of 89 and a chorus of 27. As such, it is Reich's most maximal composition to date, yet it has a comfortable affinity with his

earlier pieces in its canonic processes, rhythmic construction, and pulsing chords. Those familiar methods, however, are applied with a vastly expanded emotional range.

Capitalizing on the long-breathed melodic style of *Tehillim* (1981), Reich has taken that new lyric sense and combined it with a deft, assured orchestral technique. In effect, this is his first piece originally conceived for orchestra, and it is a dazzling debut, from its biting brass, dabs of winds, and persistent percussion to the newly prominent role of the strings. Michael Tilson Thomas, conducting members of the Brooklyn Philharmonic and of Reich's ensemble, provides a



Philip Glass

ROBERT MARTHORPE

performance of unremitting energy and astonishing precision. Those who are at all interested in Reich's music should add this recording to their collections: It is the summation of all his achievements to date.

Glass's score to Paul Schrader's film *Mishima* was "re-edited as a distinct musical entity" for the Nonesuch recording. Now cast as a 14-movement suite, it is a laudable if not consistently inspired addition to Glass's catalog. Never plumbing the emotional depths of his masterpiece, *Satyagraha* (1980) [see review in this issue], or attempting the epic scale of the soundtrack to *Koyaanisqatsi* (1983), *Mishima* at least avoids the trivialities that plagued *Glassworks* (1982). In truth, this score reveals a number of interesting developments in Glass's compositional method. While the scalar passages and the repeating arpeggios with shifting accents are familiar, Glass shows an interest in exploring the potential of a wider range of timbres, from strings, winds, brass, and harps to electric guitars, martial drums, wind chimes, and bells. And there are hints of change in the musical material as well: Though the rock-inspired movements are embarrassingly derivative, the more chromatic, almost late-Romantic writing in the string quartet

sections is genuinely moving. Here much of the credit must go to the Kronos Quartet, which contributes ineffably refined, deeply serious interpretations.

Those who have been watching Adams's development in *Harmonium* (1981) and *Grand Pianola Music* (1982) know that he has never been a slave to Reichian techniques. It is the hyperexpressive incandescence of the former piece, not the parodistic tone of the latter, that Adams has chosen to pursue in his new *Harmonielehre* (1985). Listening to this 40-minute orchestral work, named after Arnold Schoenberg's 1910 treatise on tonal harmony, it is fascinating to hear how Adams celebrates and absorbs the harmonic thought and emotional milieu of the turn of the century without undermining his existing style.

The opening of the first movement and much of the third relate to the familiar Adams manner: pulsing chords repeated over tonal planes, only to be suddenly juxtaposed with a distantly related sonority. Yet even these sections show an enrichment in their greater use of chromaticism and higher level of dissonance. The pounding E minor chords that launch the work suggest the austerity of Stravinsky's *Symphony of Psalms*; the turbulent, climactic power recalls Adams's



John Adams

HIGH FIDELITY ARCHIVES

own *Harmonium*; the perfumed orchestration hints at the impressionism of Ravel. The remainder of the first movement and all of the second speak a vastly different language: Now the minimal gestures retreat into the background, woven over with long, anguished lines. Redolent of late Mahler, early Schoenberg, and even Sibelius, this bitter-sweet, tortured chromatic writing shows Adams reaching closer to the neo-Romanticism of David del Tredici and Robin Holloway. His ultimate success may depend on whether he can avoid the occasionally saccharine

Format Key

- Ⓛ LP
- Ⓜ Cassette
- Ⓢ Compact Disc
- Ⓥ Videocassette
- Ⓦ Videodisc
- Ⓡ Open reel

RECORDING INFORMATION

- (A) analog original
- (D) digital original

Large symbol beneath title indicates reviewed format. Small symbols following catalog number of reviewed format indicate other available formats (if any).

Catalog numbers of all formats of a particular recording usually are identical except for differing prefixes or suffixes. Catalog numbers of formats other than the reviewed format are printed only if their basic numbers differ substantially from that of the reviewed format.

Arabic numeral in parentheses indicates number of items in multi-item set. Unless otherwise indicated, all multi-LP sets are in manual sequence.

banalities that intrude.


This may well mark the final collaboration of Adams, the San Francisco Symphony, and Edo de Waart (now that De Waart has been succeeded as music director by Herbert Blomstedt). It is a stunning achievement, both for accuracy of ensemble and sheer lushness of orchestral sonority.

Nonesuch has created three worthy releases, nothing less than a rededication of its long-standing commitment to new music in America. Clean surfaces, warm digital sonics, informative packaging, and a devotion to American composers: What more could one ask from a major record label?

K. Robert Schwarz

BRAMMS:

Concerto for Violin and Cello, In A minor, Op. 102.

Menuhin, Tortelier; London Philharmonic Orchestra, Berglund. EMI Angel DS 38226 (D).  YEHUDI MENUHIN AND PAUL TORTELIER, TWO pillars of 20th-century string playing, both around seventy years old, combine to bring us a thoughtful, cleanly contoured account of the Double Concerto. Paavo Berglund and the London Philharmonic Orchestra support the soloists' austere interpretation with unintrusive playing, in fairly moderate tempos. Balance between the orchestra and the solo instruments, especially the cello, has always been a problem in this work: Here, the performers and engineers have succeeded in achieving a concert-hall perspective, with the solos emerging as if from the orchestra.

The cadenzas at the beginning of the first movement set the tone of the interpretation. Tortelier's energy seems to be more inwardly directed than Menuhin's, but there is nothing wrong with contrasting styles playing off one another. Menuhin's rough and ready bow work takes a little getting used to;

still, I like hearing the rosin dust in string playing, and there is musicianship in every one of his phrases. Tortelier's passion shows in his care and in the way he manages to glide effortlessly over the most difficult passages, notably in the third movement. The performance overall lacks the urgency of the Jascha Heifetz / Emanuel Feuermann / Eugene Ormandy / Philadelphia Orchestra account (my favorite recorded Brahms), but the slackened pace does make possible a highlighting of the soloists' interplay with the orchestra.

Gary S. Fagin

BRITTEN:

Choral Dances from "Gloriana," Op. 53.



HOLST:

Choral Hymns from the "Rig Veda,"

Op. 26 (third group).

BLISS:

Pastoral.

 Minty, Hill, Pearce, Owen; Holst Singers and Orchestra, Wetton. Mark Brown, prod. Hyperion KA 66175 (A).  (Distributed by Harmonia Mundi, U.S.A.)



THE FIRST SIDE OF THIS WELL-FILLED cassette couples two obscure, utterly delightful works: Benjamin Britten's "choral dances" from the 1953 opera *Gloriana* and Gustav Holst's third volume of "choral hymns" from the Hindu *Vedas*. The Holst, sweetly harmonized and elegantly scored for women's voices and harp, surely must have been in Britten's mind when he composed his 1942 *A Ceremony of Carols*; the *Gloriana* excerpts, recorded in an alternate arrangement that adds interludes for tenor and harp to the original a cappella dances, provide American listeners with a tantalizing glimpse of Britten's only unrecorded opera. (An orchestral suite from *Gloriana*, briefly available in this country on Angel, is still available as a British import, EMI ASD 4073.)

Sir Arthur Bliss's 1928 *Pastoral*, which takes up all of the second side, is a tasteful but uninspired 30-minute cantata of the sort that British composers can, and do, turn out blindfolded and by the gross. Like the Britten and Holst works, it receives a lovely, fresh-faced performance from Hilary Davan Wetton and the Holst Singers and Orchestra, a London-based ensemble that deserves to be recorded with some regularity. Mark Brown's analog sound is a trifle soft-edged but perfectly acceptable.

Terry Teachout

FAURÉ:

Requiem (1893); Cantique de Jean Racine (orch. Rutter).

 Ashton, Varcoe, Scott; Cambridge Singers, City of London Sinfonia, Rutter. Jillian White, prod. Collegium COLC 101.  (P.O. Box 31366, Omaha, Neb. 68131.)

ROSSINI:

Overtures (8).

 Orpheus Chamber Orchestra. Steven Paul, prod. Deutsche Grammophon 415 363-4. 

Overtures: Tancredi; L'Italiana in Algeri; L'Innamorato; La Scala di seta; Il Barbiere di Sivi-

glia; Il Signor Buschino; La Cambiale di matrimonio; Il Turco in Italia.

ONE OF THE UNEXPECTED CONSEQUENCES OF the early-music movement has been an increased interest on the part of many of our best artists in working with authentic editions of classical and Romantic music. These two recent releases are a case in point. Both albums make use of new performing editions that restore the works to their original chamber-orchestra versions. In both instances, the exceptionally fine performances benefit immeasurably from the authenticity of the editions used.

Gabriel Fauré's Requiem is normally heard in a version for chorus and full orchestra prepared in 1900, apparently at the behest of the composer's publishers. (Fauré, who did not like orchestrating, may well have left the scoring of this revision to Jean Roger-Ducasse, one of his students.) John Rutter's new edition of the Requiem makes Fauré's second (and earlier) version, of 1893, written for a much smaller orchestra, generally available for the first time. (In its original form, dating from 1877, the Requiem was set to an organ accompaniment.) The textual differences between the two later scores, while significant, are not likely to be all that obvious to the casual listener. What *will* be obvious is the increased grace and intimacy of the chamber version, which clearly deserves to supplant the full-orchestra one as the "standard" edition of the work.

Rutter's performance is unusually simple and straightforward, his soloists attractive, his orchestra competent and well routed. Jillian White's closely miked recording is pleasantly transparent. The result is an unusually pure presentation of the Requiem, one worlds away from the obese heavings of, say, Daniel Barenboim's recording with the Orchestre de Paris (Angel S 37077). There have been better-played performances, to be sure, but this is perhaps the most wholly satisfying one ever to appear on record. The filler is a lovely account of the *Cantique de Jean Racine*, which, ironically, is performed in a tasteful but inauthentic orchestration by



THE ORPHEUS CHAMBER ORCHESTRA

CHRISTIAN STEINER/COURTESY DEUTSCHE GRAMMOPHON

Rutter for strings and harp.

Orpheus, the New York-based chamber orchestra that performs without a conductor, has recorded eight Rossini overtures for Deutsche Grammophon in performances based on the Fondazione Rossini editions of the composer's operas. These restore the original chamber-sized instrumentation: The superfluous brass and percussion parts added by 19th-century editors have been trimmed away, leaving Rossini's lucid, witty scoring to stand on its own. Once again, while other hands (notably Arturo Toscanini's and Sir Thomas Beecham's) have given us more characterful recordings of Rossini, the youthful high spirits of these outstanding players, combined with the delights of hearing the composer's original instrumentation, lend this album a very special charm of its own. There is a real chamber-music feel here: A conductor would have been as needless as a trombone section. Steven Paul's digital sound is exceptionally fine; Philip Gossett's English-language notes are remarkably informative. *Terry Teachout*

GLASS:

Satyagraha.

○ Perry, Cummings, Liss, McFarland, Reeve, Woods; New York City Opera Orchestra and Chorus, Keene. Kurt Munkacsi and Michael Riesman, prods. CBS Masterworks I3M 39672 (D, 3). ○ (3). □ (3).

PHILIP GLASS'S MUSIC MATURED AND DEEPENED immensely during the years that separated *Einstein on the Beach* (1976) from *Satyagraha* (1980). These scores are the first two portions of an operatic trilogy that reached completion in *Akhmaten* (1984)—a triptych dealing, respectively, with science, politics, and religion. Yet they could not be more different.

Einstein was essentially a collaborative effort, in which the contributions of designer Robert Wilson and choreographer Lucinda Childs were as important as Glass's music and text. A non-narrative work that viewed its subject as scientist, humanist, and musician against a backdrop of impending nuclear apocalypse, *Einstein* was devoid of libretto in a conventional sense, its text consisting of numbers, sight-singing syllables, and non-sense words. It was conceived with Glass's small ensemble in mind, and it didn't stray far from the familiar repeated arpeggiated patterns already the composer's signature at the time.

With *Satyagraha*, Glass brought the increasingly maximal traits of his music to fruition, exposing once and for all the irrelevance of the "minimalist" tag. Scored for conventional orchestral and vocal resources—strings, winds, organ, six soloists, and a chorus of 40—*Satyagraha* is an opera in a sense that *Einstein* never was. Set to a libretto in Sanskrit that consists entirely of extracts from the Bhagavad-Gita, it traces the development of Mohandas K. Gandhi's philosophy of nonviolent resistance during his years in South Africa (1893–1914). Its seven

scenes depict crucial episodes in the refining of the *Satyagraha* (truth/force) concept: the Indians' resistance to repressive South African racial laws, the burning of required identification cards, the great nonviolent march to the Newcastle coal mines. Towering above the action are three silent, watchful historical figures, representing the "past, present, and future of *Satyagraha*": Leo Tolstoy, Rabindranath Tagore, and Martin Luther King, Jr.

Glass's music for *Satyagraha* can seem deceptively simple: Each scene is essentially a gigantic *passacaglia*, a series of variations over a repeated chord progression. Yet within this basic structure, virtually nothing remains unchanged. Glass is constantly modifying the shapes of his melodic lines—themselves often simple scales or arpeggios—by shifting meters, by chromatic expansion, by new dynamic markings. Even more remarkable is his ineffably refined orchestral sense, which allows him to subtly alter timbres so as to complement the drama and avoid monotony. Especially prominent are the dark, ominous strings; the bright, buoyant flecks of wind color; the reedy organ. Glass's dramatic instinct enables him to build scenes toward climactic points by adding soloists, chorus, and instruments in a clearly directionalized manner.

Some have criticized what they perceive as Glass's lack of musical response to the inherent drama of his subject. They misunderstand both the spiritual basis and the artistic result. *Satyagraha* is not really a narrative work, despite the fact that it conveys history: It is a series of disconnected, ritualistic tableaux, more a mythic re-creation of vignettes than a progression of events or a study in character. Its prevailingly meditative, timeless, Zen-like acceptance is perfectly complemented by the mellow, blended orchestral timbres and by the great, static, repetitive blocks of music that depict these motionless scenes. Slowly revolving in cyclic manner, never succumbing to bombastic rhetoric, Glass's score is an achievement of unflinching vision and unflagging inspiration.

Because the music "makes special demands on performers for concentration, endurance, and rhythmic precision," producers Michael Riesman and Kurt Munkacsi decided not to employ conventional taping methods but to apply a technique almost never used in classical music: overdubbing. The recording was made in layers, one instrumental or vocal section at a time, with all synchronized by a series of computerized click tracks. (What remained for conductor Christopher Keene to do is not that clear.) The effect, unfortunately, is one of rather inhuman precision.

Moreover, the recording has a strident, harsh sound, all too apparent on the LPs, that comes close to being painful on the CDs, especially in the upper strings, winds, and keyboards. The shrillness undermines the opera's expressiveness and exaggerates the mechanistic aspect of the account to an

Critic's Choice

The most noteworthy releases reviewed recently

BRITTEN:

Choral Music.

Chance, Coxwell, Hayes, Salmon, Seers, Unwin; Westminster Cathedral Choristers, Corydon Singers, Best. □ Hyperion KA 66126, Jan.

CHOPIN:

Piano Music.

Perahia. □ CBS Masterworks IMT 39708, Mar.

DEBUSSY:

Préludes, Bk. 2.

Rodriguez. □ Élan 1206, Mar.

GINASTERA:

Piano Music.

Rodriguez. □ Élan 1202, Mar.

KHACHATURIAN:

Piano Concerto*.

PROKOFIEV:

Piano Concerto No. 3, in C, Op. 26**.

Kapell; Boston Symphony Orchestra, Koussevitzky*; Dallas Symphony Orchestra, Doráti**. □ RCA Gold Seal AGM 1-5266, Jan.

PISTON:

String Quartets Nos. 1 and 2.

Portland String Quartet. □ Northeastern NR 216, Feb.

SCHÜTZ:

"St. Matthew Passion," S.W.V. 479.

Hilliard Vocal Ensemble, Hillier. □ Angel EMI DS 38167, Jan.

STRAUSS, R.:

Güntram.

Tokody, Goldberg, Sólyom-Nagy, Gáti, Bándi, Gregor, others; Hungarian People's Army Male Choir, Hungarian State Orchestra, Queler. □ CBS Masterworks I2M 39737, Mar.

VERDI:

Don Carlos.

Raimondi, Domingo, Nucci, Ghiaurov, Ricciarelli, Valentini Terrani; Chorus and Orchestra of the Teatro alla Scala, Milan, Abbado. □ Deutsche Grammophon 415 316-1, Jan.

RECITALS AND MISCELLANY

GLENN GOULD:

The Glenn Gould Legacy, Vol. 2:

Haydn, Beethoven, Mozart.

Gould; Columbia Symphony Orchestra, Golschmann; Leningrad Philharmonic Academic Symphony Orchestra, Slovak. □ CBS Masterworks M3T 39036, Jan.

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extent that is hardly in keeping with the work's spirit and orchestration.

Tenor Douglas Perry adds a much-needed human element, contributing such a remarkable performance as Gandhi that the flaws of the recording pale in comparison. His pure tone, expressive yet not overburdened with vibrato, his refined modulation of timbre, his sense of direction in phrasing, and his ability to vary the interpretation on every repetition all combine to offer a revelatory listening experience.

It is a pleasure to welcome *Satyagraha* to the catalog after an unfortunate six-year delay. This recording may finally convince skeptics of what devotees knew all along: Glass is a composer who, when inspired, can create a work of true genius, one of the finest operas ever written in America.

K. Robert Schwarz

KODÁLY:

Missa Brevis.

VAUGHAN WILLIAMS:

Mass in G minor.

Ⓞ Newman; New York Choral Society, DeCormier. John McClure, prod. Vox Cum Laude VCL 9076 (D). ☎

BOTH OF THESE WORKS ARE FRANKLY CONSERVATIVE, but Zoltan Kodály's 1944 *Missa Brevis* is also frankly dull—there is none of the earthy Hungarian vitality of the *Psalms Hungaricus* in this blandly tonal piece of war work. The Vaughan Williams *G minor Mass*, on the other hand, is every bit as striking as that composer's *Fantasia on a Theme by Thomas Tallis*, which it strongly resembles in its highly personal use of modal harmonies and antiphonal textures; after six decades, it still comes across as one of Vaughan Williams's few absolutely first-rate efforts.

The New York Choral Society, an amateur ensemble led by Robert DeCormier, sings just a bit heavily for these works, though the coarsely blended sounds it produces from time to time are more troublesome in the Vaughan Williams, where 150 voices were used, than in the Kodály, recorded with only 65. Anthony Newman is the accomplished organist in the *Missa Brevis*. John McClure has recorded the group in a singularly unresonant and unflattering acoustic, which may account in part for the lack of blend and for some of the overly fast tempos in the Vaughan Williams.

Terry Teachout

MAHLER:

Das Lied von der Erde.

Ⓞ Ferrier, Patzak; Vienna Philharmonic Orchestra, Walter. London 414 194-2 (D). ☎ ☎

Ⓞ Ludwig, Wunderlich; Philharmonia Orchestra, Klemperer. Walter Legge and Peter Andry, prods. EMI Angel CDC 47231 (D).

Ⓞ Norman, Vickers; London Symphony Orchestra, C. Davis. Philips 411 474-2 (D). ☎ 6514 112. ☎ 7337 112.

WHAT AN EMBARRASSMENT OF RICHES: MY FAVORITE short Mahler masterpiece (it lasts only an hour or so) in three temptingly sumptu-



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ous performances. Luckily, I can own all of them. For those who can't, let me rate the various factors.

Conductor: Colin Davis does handsomely, despite a tendency to drag the slow parts, but for authenticity he must yield: Otto Klemperer and Bruno Walter benefited by personal association with Mahler, and of those two Walter became the anointed successor.

Orchestra: Brilliant, all three, but (in case you react musically like the Princess inconvenienced by the pea placed beneath her mattress) only Davis, astonishingly, has bothered to line up an English horn capable of the low E flat Mahler preferred after rehearsal no. 32 in the first movement; the others make do with E natural.

Contralto: Superb, all (even Jessye Norman, nominally a soprano), but for me, Kathleen Ferrier has no real competition. The radiant beauty of her uniquely Mahlerian voice, joined with the awareness that she made this recording ("... the lovely earth blossoms forth in spring and grows green anew") knowing that the cancer within her would probably kill her before she herself saw another spring, makes hers one of the most poignant and moving performances ever recorded.


Tenor: Julius Patzak yells his high notes. Fritz Wunderlich (another very great singer who, like Ferrier, died young) combines sensitivity and sweetness with power, and Jon Vickers emphasizes his ringing *Heldentenor* timbre.

Sound: Philips (all three stages digital) is superior, but by a surprisingly narrow margin; electronic hocus-pocus has rejuvenated the older recordings to an amazing degree.

Paul Moor

OFFENBACH:

La belle Hélène.

Norman, Aler, Bacquier, Lafont, Burles, Alliot-Lugaz; Chorus and Orchestre de Capitol de Toulouse, Plasson. EMI Angel DSB 3981 (D, 2).  ON PAPER, CASTING JESSYE NORMAN AS OFFENBACH'S Belle Hélène was a good idea; on the turntable, however, this performance goes wrong. Much of it is overblown, and everything, except for a moue from Norman here and there in the dialogue, is taken too seriously. Perhaps Michel Plasson, whose conducting of *La Périchole* was such a joy, mistook Hélène for Isolde. Whatever the reason, there is too much orchestra, too much correctness, not enough humor. Even poor Ménélas, a character to be played by a bumbling French music hall comedian, is entrusted to a straight tenor.

Norman *does* sing well, but without much personality or concept of style. John Aler, the Paris, is defeated not so much by memories of Jussi Björling's 1938 *Paris's Entrance*, one of that artist's great 78s, as by the fact that he has little to say and nothing to say it with, although he does make some nice sounds in the "Dream Duet." Gabriel Bacquier, ever a mainstay of casts, is overblusterous as Agamemnon. Colette Alliot-Lugaz

does, fortunately, have a gleam in her eye as Oreste.

They even changed the text in Toulouse. All things considered, this most wondrous of Offenbach's operettas is better served by a recent reissue from EMI with Anneliese Rothenberger and Nicolai Gedda, conducted by Willy Mattes. It's in German, but the singing is clear and light and the score is performed beautifully. For true authenticity, a collection of highlights appeared in the Fifties on Pathé Vox that is still a delight, though no longer in the catalog. Would that Plasson and the group in Toulouse had studied either of these earlier efforts.

Bert Wechsler

POULENC:

Mémoires.

Lott; Songmaker's Almanac, Johnson. Martin Compton, prod. Hyperion A66147 (A). (Distributed by Harmonia Mundi, U.S.A.)

Song cycles: Deux mélodies de Guillaume Apollinaire; Trois poèmes de Louise Lalanne; Tel jour, telle nuit; Métamorphoses; Deux poèmes de Louis Aragon.

Songs: Voyage à Paris; Bleu; Voyage; Hôtel; Tu vois le feu de soir; Colloque; Priez pour paix; A sa guitare; Toréador; Nous voulons une petite sœur; Les chemins de l'amour.

TEL JOUR, TELLE NUIT, FRANCIS POULENC'S great 1936-1937 song cycle on texts by the surrealist poet Paul Éluard, is the centerpiece of *Voyage à Paris*, a collection of 30 Poulenc *mélodies* performed by The Songmaker's Almanac, a British vocal ensemble led by pianist Graham Johnson. Felicity Lott, the featured singer on the album, is an intelligent and sensitive soprano with a silvery upper register that she uses to excellent effect in *Tel jour* and in the other "serious" songs on this disc; her torchy-sounding lower register occasionally tempts her into obtrusive crooning on lighter numbers like "*Les chemins de l'amour*." Ann Murray, Anthony Rolfe Johnson, and Richard Jackson, the other members of the ensemble, make cameo appearances so winning that one wonders why the lion's share of the program was given solely to Miss Lott. Graham Johnson accompanies brilliantly—at times too brilliantly for the comfort of his singers.


The program is an attractive potpourri of individual songs, complete cycles, and excerpts from cycles that really should have been recorded in their entirety or left alone; Graham Johnson's liner notes are informative but self-consciously clever. The analog sound is bright and realistic. Flaws and all, this album is by far the best selection of Poulenc's wonderful *mélodies* available on record in America, now that Odyssey has inexplicably deleted its two-disc set by the composer and baritone Pierre Bernac. (The absence of these classic recordings from the American catalog is a disgrace.) *Voyage à Paris* is not yet available on cassette or Compact Disc, which is a shame: Hyperion's surfaces, at least on the copy I listened to, are less than ideal.

Terry Teachout

RECITALS AND MISCELLANY

FRITZ KREISLER:

Score Pieces and Arrangements.

F. and H. Kreisler; Rupp, Raucheisen, Sandor;  Kreisler String Quartet. Keith Hardwick, prod. EMI EM 290556-5 (A, 2). © (2). (Distributed by International Book and Record Distributors, 40-11 24th St., Long Island City, N.Y. 11101.)

ANON. (att. Corelli): O Sanctissima. BACH: Partita No. 3, in E, B.W.V. 1006: Gavotte. BIZET: L'Arlesienne: Intermezzo. BRANDL: The Old Refrain. CHOPIN: Mazurka in A minor, Op. 67, No. 4. DVOŘÁK: Humoresque, Op. 101, No. 7. FALLA: Siete canciones populares españolas: Jota; La vida breve: Danza española. GLAZUNOV: Sérénade espagnole, Op. 20, No. 2. HEUBERGER: Der Opernball: Midnight Bells.

KREISLER: Caprice viennois, Op. 2; Chanson Louis XIII; La Gitana; Liebesfreud; Liebesleid; Marche miniature viennoise; Polichinelle Sérénade; La Précieuse; Rondino on a Theme by Beethoven; Scherzo alla Dittersdorf; Schön Rosmarin; Syncopation; Tambourin chinois, Op. 3.

MENDELSSOHN: Songs Without Words: A May Breeze, in G, No. 25. MOZART: "Haffner" Serenade, in D, K. 250: Rondo. POLDINI: Poupée valsante. RIMSKY-KORSAKOV: Le Coq d'or: Hymn to the Sun; Salko: Chanson hindoue. SCHUBERT: Rosamunde, D. 797: Ballet in G. SCOTT, C.: Lotus Land, Op. 47, No. 1. TCHAIKOVSKY: Quartet No. 1, in D, Op. 11: Andante cantabile. TRAD.: Londonderry Air. WEBER: Sonata for Violin, No. 1, in F, Op. 10: Larghetto.

THIS BRITISH IMPORT, THE MOST EXTENSIVE Fritz Kreisler reissue in recent memory, contains 33 recordings made in Europe between 1926 and 1938. Most of them date from toward the end of that span and are remakes of the violinist's early electric Victor 78s. Fourteen of those earlier versions are still available on Victrola VIC 1372, and it is interesting to note the change in musical approach over a ten-year period. The electrics are extraordinarily fleet and graceful, the remakes generally a bit slower and more explicitly *gemütlich*. (Many of the remakes also benefit from the immeasurably superior accompanying of Franz Rupp.)

Early or late, Kreisler's own *echt*-Viennese playing is consistently delightful, and this imaginatively programmed double set features him in charming original compositions like *Caprice viennois* and *La Gitana* as well as the familiar Kreisler recastings of such old standbys as *Humoresque*. Bryan Crimp's liner notes are sympathetic and informative, the sound on cassette very satisfactory.

This EMI reissue, taken together with the cassette-only transfers of Kreisler's early electric Beethoven and Brahms concertos (In Sync C 4135), makes a cross section of the violinist's recorded work available on tape for the first time. Not that there isn't equally worthwhile Kreisler material still gathering dust: Whatever happened to that six-disc set RCA announced a few years back but never actually produced?

Terry Teachout

Recording "Cosi" in "Authentic" Sound

MOZART:

Così fan tutte, K. 588.

Yakar, Nafé, Winbergh, Krause, Resick, Feller; Drottningholm Court Theater Chorus and Orchestra, Östman. Peter Wadland, prod. Oiseau Lyre 414 316-4 (D. 3). ©(3). ●(3).

THIS RECORDING OF *COSÌ FAN TUTTE*, THE SECOND in digital sound, is only the second of any Mozart opera to use period instruments and make claims to period stylistic authenticity. The latter go only part way, however: Except for a generous use of the appoggiaturas that Mozart and his listeners would have expected, the solo singers make little or no attempt at improvised ornamentation. And, most disappointing to anyone interested in authentic acoustics, the marvelously preserved Drottningholm Court Theater (built in 1766, only 24 years before the Viennese premiere of *Così* in 1790) was *not* used for the recording. According to producer Peter Wadland, because of municipal fire laws and what he considers the excessively dry ambience of the Drottningholm, the sessions took place in Stockholm's more reverberant Nacka School Hall. But surely such problems could have been solved.

Nevertheless, this version is distinctly different from what is normally heard. It is pitched slightly lower (A = 433 Hz, instead of 440). The choral and orchestral forces are much smaller (only 11 and 28, respectively). And the combination of skilled players on sweet-toned authentic instruments with conductor Arnold Östman's stylistic empathies results in an engagingly faster and lighter reading. It runs just under 169 minutes, yet unlike many performances on or off records, it is uncut. Indeed, it even includes, as a Side 6 appendix, Guglielmo's alternative Act I aria, "*Rivolgete a lui lo sguardo*," which Mozart himself scrapped in favor of the shorter, more dramatically appropriate "*Non siate ritrosi*."

In contrast with the best earlier *Così* recordings (Karl Böhm's second, with Elisabeth Schwarzkopf, Christa Ludwig, and Alfredo Kraus for Angel, c. 1963; Colin Davis with Montserrat Caballé, Janet Baker, and Nicolai Gedda for Philips, c. 1975; and Sir Georg Solti with Pilar Lorengar, Teresa Berganza, and Tom Krause for London, c. 1974), the only really well-known soloist here is Krause, who again is a delightful Guglielmo. Among the others, soprano Rachel Yakar (Fiordiligi) and tenor Gösta Winbergh (Ferrando) occasionally have turned up on domestically available issues and here confirm their reputations as intelligent interpreters. Mezzo Alicia Nafé (Dorabella) and soprano Georgine Resick both possess attractive, fresh voices and engaging manners (the latter's Despina is a real charmer). But the surprise member of the cast (at least for those unfamiliar with him) is the sexage-

PETER WADLAND, PRODUCER OF THE OISEAU LYRE/FLORILEGIUM *Così fan tutte*, was in New York last October to direct several recording sessions for that label. The tapings—of Joshua Rifkin leading the Bach Ensemble in Cantatas Nos. 80 and 147, the latter of *Jesu, Joy of Man's Desiring* notoriety—were the first by a major European record company of an American original-instrument ensemble. I used the occasion not only to learn about Florilegium's microphone technique and the sonic implications of one-on-a-part choral singing, but also to ask Wadland about his experiences in producing *Così*.

High Fidelity: What was it like, going back to an "original" theater?

Wadland: Going to the Drottningholm Court Theater is a very moving experience, because you are actually going back 220 years and you know that nothing has been altered at all. You're seeing and hearing something exactly as it was. The balance between stage and pit is wonderful; the singers don't have to force. It just feels right.

High Fidelity: Nonetheless, you weren't actually allowed to record in the theater, were you?

Wadland: No. The reason you can't record there is twofold, really. For a start, the fire hazard: The theater is completely wood and papier-mâché. It has an enormous, complicated fire-alert system—if you smoke a cigarette anywhere in the vicinity, the whole thing goes off and the fire people are there within a few minutes. It happens quite often when someone forgets, and you have to pay for the inconvenience. There's also no control room to use there. You can't use one of the old rooms, they're too valuable. Also, it's not always advisable to record in a theater acoustic because when you take it back home, it sounds ever so boxy sometimes.

High Fidelity: But isn't that what it sounds like in reality?

Wadland: It is. But I think one has to say that when you're there, it's a combination of vision as well. I think that affects your idea of what the sound is going to be like.

High Fidelity: Despite the use of a "non-original" theater acoustic, I was very impressed with the clarity obtained on the recording. I found the blend of winds and voices extraordinary. Was this done with the mike technique?

Wadland: You hear a lot of things coming through. There are bits in "*Per pietà*" where the clarinet is doubling the voice. You don't normally ever hear that. We certainly didn't do any artificial balancing. Whatever comes through is what Mozart did, as far as I'm concerned. I went back to Drottningholm after we had released the record [in Europe], and I was thrilled to hear that the balances in the theater were what I remembered from the recording.

High Fidelity: The clarity seems to have encouraged some rather breakneck tempos.

Wadland: I know this record is going to be controversial, since some of the tempos are so much faster than what we're accustomed to. My trouble is that I've gotten so used to them now, I can't listen to anything slower.

High Fidelity: I agree. "Normal" recordings of Mozart operas now seem stodgy, untheatrical, and stilted. I assume the singers had some adapting to do.

Wadland: The big problem was finding the singers. We had to get intelligent singers—there's no point in getting in prima donnas who wouldn't understand what we were trying to re-create.

High Fidelity: What else does Florilegium have "in the can"?

Wadland: We have recorded Handel's oratorio *Athalie*. We got Joan Sutherland, who's never sung with old instruments before, to sing the title role.

High Fidelity: She didn't have problems with the lower pitch?

Wadland: No. We didn't tell her. Actually, she didn't find that a problem at all; she quite enjoyed the sessions. It's a short role, only 15 minutes of singing, even though it's the title part. A lot of people have said we just used her as a hype, but the part had to go to a singer capable of a grand, slightly "nasty" quality. It worked very well.

David Ranada

narian Hamburg Opera veteran Carlos Feller, near ideal in the role of the "elderly cynic" Don Alfonso.

Happily, the cast's merits here are greater than the sum of its individual parts, for Mozart's comic masterpiece depends on the ensemble passages, and these are consistently well balanced and at the same time

thoughtfully characterized in this lucid digital recording. If scarcely to be ranked at the top of the *Così fan tutte* discography, this is surely a novel and refreshing version, and one that makes a most persuasive argument for the use of period instruments in any and all future Mozart opera ventures.

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FRAN YOGEL

BY PAMELA BLOOM

A Rubén Blades Close-up

as bright and tight as the music of Blades and his septet, *Seis del Solar*—perhaps the most progressive coalition of Nuyorican musicians around. An anomaly in a genre mostly given to party music, Panamanian immigrant Blades writes brutally realistic lyrics that delve into the psyche of the barrio. And especially since his break with trumpet player Willie Colon in 1983, he has been expanding the perimeter of salsa: replacing

the traditional brass with vibes, adding traps and synthesizers. After 15 years on the *cuchifrito* circuit (and as many Spanish albums), Blades crystallized his vision in 1984 with his first crossover for Elektra, *Buscando America*, a chronicle of barrio life throughout the Americas. Daring and brilliant, the album was without compromise, not only establishing him as a serious composer of the people, but also attracting a new set of Anglo fans who had never even heard of salsa.

THE TWO YOUNG LATIN WOMEN SEATED NEXT TO ME in the darkened movie theater could barely contain themselves, and their enthusiasm was contagious. "Ooooh, *papito*," they moaned every time Rudy Veloso (alias Rubén Blades) cracked his winning smile in the smash sleeper *Crossover Dreams*. Whether they were itching for the fantasy or the fact, I couldn't figure. In any case, Leon Ichaso's story of the sweet but suckered *salsero* who fails to make the mainstream crossing does manage to capture the boyishly sexy Blades at his most irresistible. It's a very convincing performance, even if the role is an ironic one for a complicated artist staunchly opposed to ethnic stereotypes of any kind—particularly those closest to home.

"Rudy Veloso is a cliché," he admits to me four days after his sold-out Carnegie Hall debut, "but it's a cliché that happens all the time." Maybe so, but not one ever likely to happen to Rubén Blades. In fact, the movie's biggest felony is that its salsa-jazz is never

In retrospect, however, the third-person voice of *Buscando America* was a little too easy for an artist used to distancing himself from his material. As acute political observations, Blades's songs characteristically focus on the other—social criticisms designed to wake the sleeping Latin will. Notorious for stirring up trouble, his songs have been banned for both understandable and foolish reasons: "*El Tiburón*" ("The Shark") in Miami for lambasting U.S. intervention in Central America and "*Decisiones*" in Pana-

ma for referring, however obliquely, to a woman's menstrual cycle. Gifted with a superb sense of narration, Blades (who is also a journalist, a short-story writer, and a lawyer with two degrees) has often acted out his moral dilemmas in sharply drawn fictional characters. *Buscando* is a Brechtian commentary, a miniature *Threepenny Opera* of common folk desperately caught between political realities and personal illusions. They are like the people Blades already knew how to portray in hit singles like "Ligia Elena," about a runaway society girl; "Pablo Pueblo," a factory worker; and "Juan Pachanga," a playboy—each as familiar to Latin fans as their own neighbors.

But lately something more personal has been shaking Blades up. In an unexpected about-face, *Escenas* moves from observer to confidant, Rubén's penetrating insight turned inward. Indeed, he has taken this opportunity to dive smack into the middle of his own neurosis and mercilessly raze the landscape. In typical Blades fashion, the day-after view is stark and not at all romantic. It's a courageous move, though, for a man raised in a culture not readily given to self-analysis.

"One of the biggest problems in Latin America today," he explains, "is that we seldom take the time to explore our own selves. When it comes to everyday relationships, men and women just don't understand each other, and from that lack of understanding comes the confusion of who you are in society, your direction and responsibilities. In *Buscando America* I explored the political consequences of that. Then I went back to look at myself. It was very hard because I was still learning, but the reality I found is that we all live on a desert."

Today that reality is imprinted on Blades's face: the eyes are harder, the voice is tighter, the smile not half as charming as Rudy Veloso's. If I had expected to be seduced, I wasn't; Rubén isn't in the business of false charm. But what he lacks in common sweetness is more than made up for by a nearly Herculean passion to communicate. Blades is simply—inalterably—programmed to talk. Like a prosecuting attorney, he has a focused intensity that demands as much attention as it commands. At 200 feet, his onstage persona—a cross between Jesse Jackson, Lenny Bruce, and Roberto Durán—is mesmerizing. But at two feet away, talking to Blades feels like being pinned against the wall by Conan the Verbo-sian. Exhilarating but somehow frightening: You just don't know whether to love him or distrust him.

In its own way, *Escenas* is about such a no-man's-land—the realm of intimate communication where neither charisma nor commitment holds sway. If the album is not as cohesive a vision as *Buscando*, it is at least as raw. Some cuts, first-person narratives of his own psychological traumas, are masterpieces of craft and controlled emotion. The three best songs, "Tierra Dura," "Cuentas del

Alma," and "Silencios" (a duet with Linda Ronstadt), proceed without fanfare to picture relationships at their very worst: loneliness, boredom, and the ultimate fear of abandonment. Charged, however, with highly infectious dance rhythms, the songs effect a strange brew of poignancy and ebullience.

"Everything I wrote for *Escenas* is something I've seen and felt," Blades says. "In 'Tierra Dura' I was thinking about how the consequences of our actions lead to hardships, then to pain, then to an impasse that we can't go beyond. Then I found we can go only as far as our background, our own nature, will emotionally allow us. In the end, we just can't doubt what we don't know."

Using drought as a metaphor for that impasse, "Tierra Dura" explores the wasteland of human relationships where nobody can or even wants to concede territory. Perhaps

Much of Blades's genius lies in his ability to match beautiful emotional and musical images with stark truths. "Cuentas del Alma" ("Heart Dues") is a stunning example of melody intimately wed to metaphor—in this case, the childhood memory of his mother falling asleep in front of the TV, waiting vainly for a husband who will never return. Although the arrangement (by pianist Oscar Hernández) is charged with air-popping punctuations, Blades's soaring melody streams viscerally from the heart. In a minor mode full of longing, it is the song of a grown-up son finally attuned to his mother's pain. "I was a kid, then," Blades sings, "so I couldn't understand her fear/But now that I am older, I can understand her horror/Today I look at her and understand that heart dues can never be repaid in full." In "Silencios" he explores his own adult version of that nightmare: two ex-lovers clinging to a dead relationship that neither can abandon or revive. The quiet melody tries to express what the two, in their indifferent silence, cannot, but its pop-ballad simplicity doesn't override the scene's bleakness, its lack of resolution.

"But there is a resolution," Blades insists, "in the sense that I take my public to task. I refuse to play Messiah and think for you. There is a line in 'Silencios' that says that 'no one seems to understand that to live in silence is another way of dying.' So I'm saying if you continue to do this, you're dead. Now do you want to be dead? I'm not going to tell you to walk like you're some Lazarus. I don't have that power. I'm just telling you, 'I went through this and learned. So what are you gonna do about it?'"

Let's face it: Rubén is angry. But it's the same anger fueling his art these days. He's even pushing his voice, once a rich baritone, tautly toward its tenor edge to express something more than prettiness. Although he was brought up by a visionary grandmother who instilled in him a fierce sense of justice, the desire to reveal himself was probably not encouraged at home. It's almost as if his assimilation has demanded this uncompromising self-analysis—an unexpected by-product of his search for America. Indeed, it sounds like he spent the last few years in that time-honored North American position—lying on the couch. But alas, real Latin machos die hard; nowhere on this album is the suggestion that suffering could possibly soften one's heart. "La Canción del Final del Mundo" ("The Song for the End of the World"), a wild, apocalyptic dance mix, actually urges one to keep a stiff upper lip: "Don't let fear take hold of you, don't start screaming/Control, don't show your nervousness, and please, no crying/For good or bad, we sent for it/Now the bill . . . has to be paid."

While some of his crisis is definitely mid-life, Blades's tensions have been exacerbated by his peculiar social status in the States: an immigrant in a culture he both courts and resists. As a musician with his own crossover (CONTINUED ON PAGE 87)

Selected Discography

RUBÉN BLADES

Muestra Vida.

Fania JM 576 (Pt. 1), 577 (Pt. 2); 1980. ☐

Mucho Mejor.

Fania JM 630; 1984. ☐

Buscando America.

Elektra 60352-1; 1984. ☐

Escenas.

Elektra 60432-1; 1985. ☐

With WILLIE COLON

Siembra.

Fania JM 00537; 1978. ☐

Canciones del Solar de los Aburridos.

Fania JM 597; 1981. ☐

COMPILATION

Bohemio y Poeta.

Fania JM 541; 1979. ☐

Blades's most mature composition to date, the undulating melody masterfully evokes psychic exhaustion: a sweltering trek through a desert filled with mirages. The lyrics may be confessional, but the tone is too severe to be self-indulgent: "Hard land, parched by the sun/She and I unsundering, unforgiving/Dry mud that doesn't get water cannot give flowers." The subtitle "Etiopia," however, alludes to a larger conflict.

"The bottom line," Blades explains, "is that the physical drought was enhanced, actually allowed to occur, by our own emotional drought. Once you see the reality of that, you have to ask yourself, What can I do about it? I wasn't saying that we should never surrender or let go, but that in spite of ourselves we should have enough spirit left not to be brought down by circumstances. Personally, I refuse to be conquered by the desert I helped to create."



EBET ROBERTS, COURTESY ELEKTRA

HINDS, BROWN, MARTIN, AND NESBITT (FROM LEFT) OF STEEL PULSE: THE CONSCIENCE OF ENGLAND?

STEEL PULSE:

Babylon the Bandit.

Ⓞ Jimmy "Senyah" Haynes, prod. Elektra 60437-1. ☐

LINTON KWESI JOHNSON:

In Concert with the Dub Band.

Ⓞ Martin Rex, prod. Shanachie 43034/5 (2). ☐

IN ENGLAND, A COUNTRY SHAPED BY RACISM, David Hinds of Steel Pulse and Linton Kwesi Johnson have been furnishing, for almost ten years, some of reggae's—and pop's—most astute social observations as if out of necessity. Both men possess as sharp an eye for common brutalities as they do an ear for

context for advice (aimed at kids) that could lapse into mere preaching on "Kick That Habit (Cold Turkey)."

"Save Black Music" is an impassioned, articulate cry for preservation. "Not King James Version" righteously reminds us that "Out of Africa came the Garden of Eden." These songs lay out the ideological spirit of the record—roughly, to give us one last good time in the shadow of an encroaching Babylon—and the light-handed fusion of r&b-derived styles reinforces it. Within the coiled rhythms, you catch little snatches of jazzy keyboard chords, a sudden swoop of close harmony vocals, a sharp curl of blues guitar, and a few stray lines of rap, as if Steel Pulse were intent upon reclaiming all of modern black music in one concentrated act of devotion. Balancing the militant declamation of the closing title track with the sweet remembrance of a "School Boy's Crush," they insist on reasoned protest and sexy humor as equal necessities. Exposing reggae to fresh idioms and fresh wisdom, they force it to survive—to toughen, even—in a place where both the music and its audience are unwanted.

Linton Kwesi Johnson may be the reggae performer most removed from Jamaican dictates. His avoidance of Rasta rhetoric seems an acknowledgement of how often religion is used as a soothing, false distraction from injustice. Johnson's work is reflective by nature: This self-proclaimed dub poet confines his lucid commentary to unsentimental narratives about race clashes in Britain and to philosophical ruminations about what

Spirit in the Dark

rock-solid beats. Steel Pulse is the more traditional of the two bands, although it weighs religious values pretty carefully, too; its defenses of Rastafarianism usually ring with cultural pride rather than spiritual smugness. With *Babylon the Bandit*, the group backs some of its sanest arguments with its most propulsive arrangements. This time around, Hinds and band are worried that black culture as a whole, not just its Jamaican segment, is on the verge of being lost, a casualty of black apathy and white power. The argument lends force and desperation to the record's simplest religious praise ("Blessed Is the Man") and romantic balladry ("Love Walks Out"). It even provides a dramatic

equality will cost. In a way, he's an academic version of a traditional Jamaican toaster: Consider Big Youth abstaining from fransella and absorbing the lessons of Frantz Fanon instead of Clint Eastwood. (Then again, there's enough cold violence and gallows moralism in these songs to satisfy any Eastwood fan.) On his new double album, *In Concert with the Dub Band*, what strikes you first about Johnson is the clipped cadences and dry murmur of his voice, a voice whose lack of affect is a way to stare down the scarred recollections of riots and jailed friends.

In Concert makes an ideal introduction to Johnson's recording career. Except for the displaced "Reality Poem," the tracks offer a chronological sampling of his four albums in the orderly manner you'd expect from such a rational ideologue. You may imagine that he also retains too much of an ideologue's dourness, but considering the world he surveys, let's just say that humor is a privilege he doesn't afford himself—a privilege denied his subjects. The moments of vigor here are doled out suspiciously: The proud chants of "Forces of Victory" and "Making History" are supported by rhythms that crawl forward and then hang back a bit, as if to make sure no one is trailing them. Throughout these two records, the Dub Band, led by Dennis Bovell, prods Johnson along ceaselessly, often tossing off a cracked blare of horns that manages to sound both triumphant and funereal. And Johnson himself, who has always conceived his poems with the throb of a reggae bass in mind, never flags in his rhythmic insistence, as demonstrated most vividly in the *a cappella* performances "Five Nights of Bleeding" and "New Craas Massahkah." This last piece, about the failure of South London police to investigate the suspected arson that claimed 13 young blacks at a birthday party, may be his finest. As he shifts between scenes of jubilation and devastation, between the joy of community and the privacy of death, he offers his weary voice as a quiet atonement and a warning for the voices that nobody heard. *Mark Moses*

EUGENE WILDE:

Serenade.

Ⓞ Donald Robinson and Mike Forte, prods. Philly World 90490-1. Ⓜ (Distributed by Atlantic.)

SMOKEY ROBINSON:

Smoke Signals.

Ⓞ Various prods. Tamia 6156TL. Ⓜ

AFTER A SHORT SLUMP, THE LOVE MAN REASSERTED himself in 1985: Everyone from former gospel choirboys Glenn Jones and Johnny Gill to weary soul stars like Bobby Womack and ex-session songsters like Freddie Jackson scored huge hits. The '80s crop of crooners and balladeers disdain macho posturing in favor of vulnerability and sensitivity; threats, challenges, and taunts have given way to soft invitations, alluring scenarios, and heartfelt tributes. These matinee idols are kindred spirits with the darlings of the sophisticated set, such as Nat "King"

Cole and Billy Eckstine, although they also are influenced greatly by two of Motown's best romantic interpreters, Smokey Robinson and Marvin Gaye. Robinson's urgent delivery and subtle intensity can be heard distinctly in the work of Luther Vandross and Freddie Jackson particularly. Erstwhile rising star Eugene Wilde has adopted the Gaye phrasing, mannerisms, and personas while zooming from near-obscurity to the cover of black teen magazines, the stage of *American Bandstand*, and the top of the black pop chart, where he racked up two consecutive No. 1 hits. Perhaps it's a sign of his quick mastery, or Robinson's continuing slippage, but Wilde's second album offers a far more engaging portrait of the current state of affairs among crooners than Smokey's latest.

Wilde—at twenty-three, already an 11-year veteran—shows on *Serenade* a knack for doing things right. "Don't Say No Tonight" echoes his previous smash, "Gotta Get You Home Tonight," on every front, from repeating the tempo and inverting the arrangement to having Wilde insert grunts and sighs in nearly the same spots. Although his delivery is earnest and his voice impressive, his cynical approach to pop formula leaves me unsatisfied, aesthetically speaking. Still, his range and dynamic personality do assert themselves on such songs as "Diana," yet another epic about the kind of woman every man wants and needs, and "Here I Go Again," a litany of regrets and mistakes. Wilde's writing could use some variety, but he shows enough talent on *Serenade* to warrant close watching: He's only a good lyricist away from being a major star among this generation's sensual standard-bearers.

Robinson, on the other hand, has been showing disturbing signs of becoming a disgruntled, crotchety complainer in his old age. His attacks last year on Prince, Rick James, and others for alleged exploitation of sex and desensitization of black youth alternately shocked and annoyed many of his fans, especially because he was speaking at the height of the Parents Music Resource Center's madcap attempt to pinpoint rock as the musical equivalent of *Hustler*. Although Robinson has certainly been a champion of discreet, softly voiced love music, it would be quite interesting to see what the PMRC would think of his "Little Girl, Little Girl" from last year's *Essar*—or, for that matter, to hear how it might interpret "I Like It Like That." But while he's certainly entitled to his opinions, they become more disturbing when they seep into his work.

Apparently, the note of caution and timidity contained in Robinson's rejoinders is sincere, because *Smoke Signals* is his safest, blandest effort since the confusing Family Robinson era of the early '70s. Half the songs aren't even his, which would be all right if outsiders were supplying superior material, but "Some People (Will Do Anything for Love)" and "Photograph in My Mind" aren't superior; they aren't even good. Not only are they loaded with limp im-

agery and throwaway lines, they're overproduced, too, with pools of synthesized muck bubbling in the background. Robinson's trademark assuredness and rich, soothing falsetto are also lagging; he wades through these tired chestnuts in an uncertain, non-committal fashion. His own tunes aren't much better. Only "Hanging On by a Thread" and "Because of You (It's the Best It's Ever Been)" have some of the characteristic lyric flair and rising, biting Robinson vocal treatment. Saddest of all, however, is "Be Kind to the Growing Mind." The finest lyricist of my generation has actually penned a song that could be the theme for a Praise the Lord or Christian Broadcast Network camp meeting. Instead of ardor, we get sterility; instead of a velvet tone and a silky rhyme scheme, we get a foreboding air and choppy, melodramatic stanzas. The creator of so much magnificent music, Robinson can be forgiven even a blunder like this, but beware: "Be Kind" shows what happens when genius gives way to obsession, fear, and despair. *Ron Wynn*

NEW EDITION:

All for Love.

Ⓞ Various prods. MCA 5679. Ⓜ

IT'S SURPRISING THAT WE'RE EVEN TALKING about a third New Edition album (never mind the fine *Christmas All Over the World*). When these Boston talent-contest winners first wafted by, breathless and boyish, the Jackson 5 reborn, we were knee-deep in Michael mania. *Candy Girl*—with the black radio hits "Popcorn Love," "Is This the End," and the title cut—would, I thought, be remembered as a novelty, and New Edition would moonwalk their way out of the limelight to make room for the next set of opportunistic pubescent tenors. Instead, they got picked up by MCA and galvanized the label's new high profile on the black charts with "Mr. Telephone Man," a cynical denial of rejection, and the candy-coated, melt-in-your-mouth "Cool It Now." They went pop. And, boy, did I feel soft-boiled!

All for Love offers up more playful and innocent songs of lust and romance that only these baby-faced adolescents could pull off. Nothing as wicked as "She Gives Me a Bang," mind you; but even though I'm beyond the thrill of discovering the opposite sex, the synthetic bounce of "Count Me Out," where Ralph Tresvant anxiously passes up hanging with his buddies for a girl, is irresistible. Adults fondly recall these sappy emotions, and teenagers feel vindicated. Since kids also thrive on minimalist beat-box bombast, New Edition try their hands at reduction, but at this point, "School" fizzles. The beats sound unplanned, and the message is *too* planned—preachy, even. They apparently feel obliged to lay virtues on their main audience—black kids who look up to them as role models. This is one time a track should be candy-coated and isn't.

They do better with "Let's Be Friends" and "Whispers in Bed." Though not quite

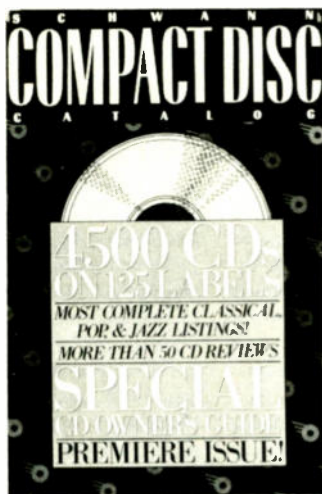
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rivals of Jeffrey Osborne's heavenly standard "On the Wings of Love," these tracks border on the mature. I adore the close harmonies and sweet melodies. And now I can sing along without feeling embarrassed.

Havelock Nelson

BRIAN ENO:

Thursday Afternoon.

① Brian Eno, prod. Jem EG CD 64.

BRIAN ENO:

Thursday Afternoon.

Brian Eno and Dan Lanois, prods. Sony Video
Ⓜ Software R 0094BE (Beta Hi-Fi), R 0094VH (VHS Hi-Fi); \$29.95.

IS A PUZZLEMENT, THIS AMBIENT MUSIC. IT hardly ranks as a dirty secret—closer to an essential fact of modern life—that most folks put on some music and then do something other than give it their undivided attention: write checks, fold laundry, make love, etc. So almost anything played outside the recital hall, from Bobby Short at the Café Carlyle to MTV to a tape on a Walkman, is ambient to some degree. That is, it coexists with a multitude of other sounds and shares the listener's perceptual faculties with a host of other data. This makes sense to me.

But over the past ten years, Brian Eno's intentionally ambient music—pieces specifically created to percolate gently in the background: elusive, inoffensive, often soporific—has always made me feel slightly silly and, perhaps perversely, less holy than he. As I sit here, the baby is gurgling to herself, her older sister is splashing in the bathtub and singing along with Dionne Warwick on the radio, the national news is on TV, the radiators are hissing, trucks are passing outside, and *Thursday Afternoon*, Eno's new Compact Disc of ambient material, pleasant and unobtrusive, is playing, too. Is this what the artist intended? I rather doubt it.

I dutifully turned my TV set on its right side (per Eno's instructions) and watched all 82 minutes of his *Thursday Afternoon* video (the CD is a variant soundtrack), hoping to overcome my ambient malaise. A series of seven color-treated figure studies, with movements so languorous and an eroticism so diffuse it seems like a love song for a different species, the video is ambient visual art, so drowsily incremental that if your mind doesn't wander, you're brain-dead.

I fantasize that Eno's pristine plinks and shimmering hums should be vibrating through some semirural yuppie fastness, where people rush from designer showers to solve software problems, eat Grape Nuts while deciding on the morning's jogging trail, and *know* that the world is their oyster. In all fairness, when I turn everything else off and turn the volume up on either version of *Thursday Afternoon*, it's quite lovely: gracefully meandering for slightly more than an hour, soothing and eerily pacific, suitable for meditation and Tantric sex if that's your pleasure and you can manage to stay awake, or for naps if you can't. Your move.

Jeff Nesin

THE LONG RYDERS:

State of Our Union.

Will Burch, prod. Island 90459-1. ☐
STATE OF OUR UNION, THE LONG RYDERS' second album, is like a good B western: Suspend your disbelief in Hollywood cowboys with Prince Valiant haircuts, and they'll take you for a fun ride. "Looking for Lewis and Clark," the opening anthem, allies American adventure mythology and political idealism with "Louie Louie," Tim Hardin, and Mabuhay Gardens (a San Francisco punk club). The rest of the LP focuses just as deliberately on rerooting rock attitude, which turned a bit cynical in the '70s, in down-home optimism. "Good Times Tomorrow, Hard Times Today" is about a pioneer family that sticks together no matter what; "Mason-Dixon Line" clocks a marathon trucker's 16-hour haul. There are farm foreclosures, factory closings, long-gone sweethearts. . . . But just when you're tired of these animated but clichéd vignettes, the Long Ryders pull out "State of My Union," an ace song with a great party-down beat and a Chuck Berry lead riff that isn't afraid to make spirit do where originality is lacking. Hmmm. Maybe this is what rock is supposed to be about after all.

Even if you don't buy the Long Ryders' brand of "new sincerity," there's a good chance you'll get hooked by their guitars. Alternately gutsy, sweet, countrified, and street-smart, they favor smooth layers of

picking and strumming. Banjo and lap steel lend pretty, surprising cadences to "Capturing the Flag," a trite rabble-rouser; a psychedelic white snakes slowly through "Years Long Ago." (The Long Ryders' debut EP, *10-5-60*, marked them as members of the paisley revival in 1983.) "WDIA," which pays homage to a Memphis r&b station, is accented with pedal steel and resonant, understated horns. Last year's well-intentioned *Native Sons* lacked conviction. The compositions on *State of Our Union* are tighter, and the guys who wrote them sing a lot more confidently. "You can't ride the boxcars anymore," but the Long Ryders just might convince you rock is still knockin' on heaven's door, or at least that it's wholesome again.

Rosemary Passantino

**VARIOUS ARTISTS:
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 Neighborhood Soon.**

Various prods. Coyote TTC 8559. (Distributed by Twin/Tone, 2541 Nicollet Ave. S., Minneapolis, Minn. 55404.)

SEEMS LIKE EVERY TOWN HAS ONE THESE DAYS, and Coyote is Hoboken's Little Pop Label That Could. It is also one of the crucial links between New York club bands and the Carolina-Georgia axis.

But ever since pop came to refer to a style marked by bright vocals, strong melodies, trendy themes, and hooks galore, rather than to "popularity" itself, the genre has

been a thinking man's playground. It's really anti-pop—music that cleverly turns pop verities in on themselves to subvert the form—that these bands trade in. The music is usually based on hit (English Invasion, folk rock, country rock) and anti-hit (Velvet Underground and solo spinoffs) formulas of the Sixties and the prepunk Seventies, and most of it is hard not to like.

The current pop infatuation is country, a choice owing to the commercial viability (however limited) of certain "cowpunk" bands, the fact that this form is perhaps the last that postpunk bands haven't already pilaged, and the dearth of *real* country today. Though there are a couple of duds on this LP, Scruffy the Cat's "Big Fat Monkey's Hat" uses banjo, accordion, and steel to deconstruct country and then put it back together in a way that's both subversive and true to the source. Related successes include Mr. Bonus's (Peter Holsapple's) bitterly funny "Elvis, What Happened?" (agitprop folkie), Syd Straw's angst-ridden "Listening to Elvis" (which mocks a dozen teen motifs), the Jacks' electro-collage "Ask for Jill—3D" (Oriental jug band plays *musique concrète*), and the Raunch Hands' "Never Comin' Home" (Johnny Horton on a speed-and-cough-syrup bender).

The children of the Velvets are best represented by the droning guitars and vocals of the Wygals' "Sleep with Angels" (Nico with oomph) and the discordant guitar-steel

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duel on Yo La Tengo's "Private Doberman." Rage to Live's brittle "Enough Is Never Enough" undercuts pop's traditional cheerfulness with a dose of postpunk urban paranoia; the Trypes' "A Plan Revised" offers murky, mysterious baroque-pop that could have been arranged by John Cale; Deep Six's "Stay Right Here" redeploys a guitar hook from the Animals' "It's My Life"; and Myra Holder's "John Calvin," with a guitar line that continuously threatens to fall apart but never does, is insinuating folk-rock that grows with repeated listening. I'm not sure how many of these 15 (count 'em!) groups have whole albums in them, but when they pool their resources, they can't be denied.

John Morthland

SWEET HONEY IN THE ROCK:

Feel Something Drawing Me On.

Ⓛ Bernice Johnson Reagon, prod. Flying Fish FF 375. Ⓜ

SWEET HONEY IN THE ROCK:

The Other Side.

Ⓛ Bernice Johnson Reagon, prod. Flying Fish FF 366. Ⓜ

WITH SOUL IN THEIR HEARTS AND RHYTHM IN their bodies, Sweet Honey in the Rock sing as though it were the only thing to do. Listening to this all-women *cappella* quintet sail through an ocean of feeling reminds me of being at a movin' revival meeting. Their songs speak about blacks, Latin Americans, Africans, women, death, God, and love with a polished artistry developed over 13 years and 17 members. Formed in Washington, D.C., as part of the Black Repertory Theatre Company, the group (accompanied by sign-language artist Shirley Childress Johnson) also heralds a message of unity and freedom that vocal director and originator Bernice Johnson Reagon first delivered during the '60s civil rights movement as one of the Freedom Singers.

Feel Something Drawing Me On is a collection of classic black Baptist hymns and traditional gospel songs that convey Sweet Honey's true strength: their ability to express

emotion. The well-known spiritual "Hush L'il Baby" comes across as an informal lullaby, the last voice dropping off at the end of each phrase. The upbeat "We'll Understand It Better By and By" and the rolling "Waters of Babylon (Rivers of Babylon)" make me want to move my seat. "In the Upper Room" reveals the deep, rich bass of Ysaye Maria Barnwell, as well as the ability of each individual voice to rise up and solo before floating away to the land of milk and sweet honey. These tracks represent some of the best unaccompanied church music available.

Church songs dominate *Feel Something*, but others reaffirm the group's creative search and promotion of their African heritage. "When I Die Tomorrow," with its cool, smooth syncopations, was discovered by Yasmeen Bheti Williams-Johnson during a tour in Liberia. An Aisha Kahlil find called "Meyango"—a funeral song in the traditional choral harmonies of West African women—churns onward with steady foot stomps. While not as moving and exciting as a concert or as direct and enveloping as the group's *Good News* anniversary album (recorded live at the All Souls Church Unitarian in their hometown), *Feel Something* is about as intense as these singers get.

Most of *The Other Side* is just what the title says, an array of social songs sympathizing with domestic and international human issues. "Venceremos (We Will Win)" names several Third World countries in Latin America with ongoing struggles, as well as Angola and Mozambique (and even the group's own Washington, D.C.), ending with background ululations in a chant-like call to victory. "Deportees," an interesting Woody Guthrie tale of Mexican farm workers whose plane crashed when they were returning home after working on our fields, drags on a little too long (as does Guthrie's antiwar "I've Got to Know" on *Feel Something*). But this is one group that won't stop looking for suitable political material; they even work up the preamble to the Constitution of the United Mine Workers convincingly in "Step by Step."

"Let Us Go Back to the Old Landmark," with chekere accompaniment, revives the group's relationship with hand-clapping gospel. The voices of "Mandiacappella," an improvisation in counterpoint, imitate different West African drums to create an enfolding orchestra of sound. Of the four Reagon songs on *The Other Side*, the title track, sung in alternating parts that echo and improvise upon each other, draws on the fullest production style. And Evelyn Maria Harris's "Gift of Love" is the most sensual love poem Sweet Honey has recorded, floating and twirling in semiquartet harmonizations that alone make this LP worth a listen.

Changing leads, independent melodic lines, four-part harmonies, and simple accompaniment—usually just claves or chekere, hands or feet—make Sweet Honey's recordings an integral part of the new song movement. In an age of musical gimmicks,

production hypes, and hard sounds, these storytellers' vibes evoke a passion that teaches us to learn from the lessons of yesterday.

Mildred Camacho

JAMES TALLEY:

American Originals.

Ⓛ Vorious prods. Bear Family BFX 15182. (Distributed by Rounder.)

IN 1976, AN EARTHY, BLUES-TINGED COUNTRY musician named James Talley achieved sudden notoriety when Jimmy Carter mentioned him as one of his favorite singers; Talley wound up performing at his Inauguration. Yet a year later, he was back in Nashville, struggling to survive without a record contract. His four marvelous Capitol LPs are all out of print, and *American Originals* is available only as an import. While his career hangs suspended in the no-man's-land between country and folk music, Talley persists in making good records that aren't hits.

His best songs conjure images of the American landscape (the corner store, the jukebox, the filling station), images he weaves together with his subjective experience, the way Bruce Springsteen does. Likewise, his band quite effectively adds color and texture to his vision. Although his first two records relied on the standard Nashville format of fiddle and steel guitar, Talley has gradually moved over to the more urbane, rock 'n' roll combination of electric guitars and keyboards. A harmonica (replacing fiddle) lends authenticity to the bluesy numbers and gives his ballads a haunting resonance. If called for, he will even work in a New Orleans jazz band, a trick few country musicians besides Jimmie Rodgers have ever managed successfully.

Talley's *modus operandi* is understatement (and it is here that all resemblance to Springsteen ends). For example, his standard drinkin' song is entitled "A Little Whiskey on the Side"—no wild inebriate he! A mellowed-out maturity pervades the album, right down to its brooding, furrow-browed cover portrait. Consequently the mood pieces and message songs come across the best, such as his evocative portraits of Montana, New York, and New Orleans and his timely warning about the resurgence of poverty in America, "Are They Gonna Make Us Outlaws Again?" Although the rock numbers are instrumentally solid, Talley's vocals seem a little short on adolescent exuberance and wild conviction. Even the relaxed intimacy of his blues seems to belong more to the coffehouse than the juke joint. But this offhand, conversational style is Talley's greatest charm; he talks to you as if he knows you.

Confessional singers with political insight are a dime a dozen in folk music, but Talley remains a country artist by inclination; he's still trying to crack Nashville, where his greatest assets are unfortunately seen as liabilities. Meanwhile, *American Originals* has grown quite popular in Europe, where music fans traditionally nourish our

unsung heroes. (It's even on CD there.) Talley's records will probably never fit into the Nashville picture that well. But that very uniqueness may wind up ensuring his longevity. *Joe Blum*

JAZZ

VIENNA ART ORCHESTRA:

Perpetuum Mobile.

⊙ Pia and Werner X. Uehlinger, prods. Hat Art 2024. (Distributed by New Music Distribution Service, 500 Broadway, New York, N.Y. 10012.)

PIERRE DØRGE NEW JUNGLE ORCHESTRA:

Even the Moon Is Dancing.

⊙ Nils Winter, prod. Steeplechase SCS 1208. IN EUROPE EVEN MORE THAN IN THE STATES, the trend is toward larger ensembles and more detailed compositional blueprints. In fact, the trend may have started in the birthplace of the symphony, where big bands signify tradition, not nostalgia. At any rate, two of the most innovative of the new European juggernauts are Swiss composer/arranger Mathias Rügge's Vienna Art Orchestra and Danish guitarist Pierre Døрге's New Jungle Orchestra, both 15 members strong, multinational in personnel as well as musical outlook, and deserving of wider recognition in the U.S.

Perpetuum Mobile, a two-disc set recorded live in Switzerland last May, reprises material the VAO debuted on its 1984 American tour, and it's surprisingly straight-ahead stuff—albeit not without the structuralist digressions one might expect from an outfit whose earlier albums include a forward-into-the-past jazz history (*From No Time to Ragtime*) and a meditation on the cause-and-effect relationship between French Impressionism and contemporary trance modality (*The Minimalism of Erik Satie*). Perhaps because this latest effort represents Rügge's take on American jazz between Charlie Parker and Ornette Coleman, the emphasis is on the VAO's soloists this time around. Fortunately, in trumpeters Herbert Joos and Karl "Bumi" Fian, saxophonists Roman Schwaller, Harry Sokal, and Wolfgang Puschnig, and transplanted American singer Lauren Newton, the VAO boasts a gallery of world-class improvisers. And Rügge sequences and juxtaposes their individual voices skillfully, revealing his composer's hand in the revisionist-West Coast crescendos that bracket the solos and provide running commentary behind them.

The most attractive pieces are "Romana," a sweeping concerto for tenorist Schwaller; "Sighs from South-Carinthia," which brings Puschnig to the fore for alto and soprano solos in dramatically contrasting moods; and "Voices Without Words" and "Lady Delay," on which Newton displays a knowledge of tonal colorings and an ease of syllabification far beyond the ken of most sound-text divas or bebop scatterbrains. The VAO's unsung heroes are Woody Schabata, whose propulsive vibes and marimba figures lend an undercurrent



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of mischief to Rüegg's scores, and pianist Uli Scherer, who makes discreet but telling use of electronic keyboards in vamping behind the horns.

Even with cross-cultural *bricolage* the order of the day, few bands look for inspiration in as many different time zones as Dørge's New Jungle Orchestra—the very name conjures both the Cotton Club and the African bush. A description of the first two tracks from *Even the Moon Is Dancing* gives some idea of Dørge's eclecticism. The opener is a flamboyantly dirty updating of Duke Ellington's "The Mooch," with Morten Carlsen's bass saxophone braying rustically, trumpeter Harry Beckett dueling the ghost of Bubber Miley, and tenor saxophonist John Tchicai improvising anachronistic free counterpoint against the main theme. It's followed by "Suho Ning Samo," based on Gambian tribal rhythms, with jubilant sax and guitar riffs that should please fans of King Sunny Adé. The tune winds up as a loony singalong. But that's not all: There's a Mingus-like eulogy for the French jazz critic Laurent Goddet, a pointillistic free-for-all inspired by Dada papa Hugo Ball, and the title track, another African-flavored rave-up that brings things back where they started from with a partial reprise of "The Mooch."

What makes this all work is the band's rhythmic panache and a formal precision that asserts itself most audibly whenever all hell seems about to break loose. Dørge is hardly alone among contemporary jazz artists in wanting all the world's music on the same platter (to borrow a phrase from fellow global-villager Oliver Lake). But with the palatable *Even the Moon Is Dancing* (and its predecessors, *Pierre Dørge and New Jungle Orchestra* and *Brikama*), Dørge proves that doesn't necessarily mean settling for musical hash. *Francis Davis*

THE MODERN JAZZ QUARTET:

Django.

Ira Gitler and Bob Weinstock, prods. Prestige FCD 639-7057. © OJC 057. ☎ OJC 5-057.

CONSIDERING THEIR CONTRASTING ARTISTIC temperaments, it's surprising that pianist John Lewis and vibist Mil Jackson ever got the Modern Jazz Quartet off the ground in the first place; it's amazing that 40 years later they keep it going. Even on early recordings like *Django*, you can feel the two of them getting ready for a standoff: Lewis preoccupied with European influences; Jackson, the irrepressible bebopper. Their common ground was the blues. What makes *Django* so bracing in comparison to much of the M.J.Q.'s more rarefied later work is that this blues sensibility, as expressed through intense improvisation, rhythmic drive, and emotive lyricism, is in far greater abundance here than the fussy classical experiments that often padlocked the group.

As a composer, arranger, and pianist, Lewis is at his most convincing when he has his feet firmly planted in the American jazz and song traditions. The specifically Old

World effects he reaches for—say, the Baroque fanfare that opens "Queen's Fancy"—are pompous and stilted. But other imaginative formal devices seem unaffected and totally in context: the way "Django" moves from its gray opening mood to the joyous, swinging affirmation of its bridge by way of that memorable bass line; the tag-team counterpoint within "But Not for Me"; the successive readings of the theme of "La Ronde" by each instrumentalist. Clever touches like these established Lewis as the preeminent small-group arranger of the Fifties. Jackson responded to Lewis's mania for organization by delivering whatever was called for—zesty, tumbling bop solos or romantic but funky ballad statements. Because he was such an unstudied player, it was always he who sounded the most uncomfortable when Lewis got too arty.

The M.J.Q. has the dynamism of a bop band and the delicacy of a chamber group; I'm thankful that this crystalline CD doesn't sacrifice one for the other. Plus, it emphasizes the contributions of bassist Percy Heath and the band's original drummer, Kenny Clarke. Lewis may have ensured that the group played, to use the parlance of the day, "thinking man's jazz." Heath and Clarke made sure it also swung its butt off.

Steve Futterman

TEDDY WILSON, BENNY CARTER, RED NORVO, LOUIS BELLSON, REMO PALMIER, GEORGE DUVIVIER, AND FREDDIE GREEN: *Swing Reunion*.

Edith Kiggen, prod. Book-of-the-Month Records 71-7627 (3). ☎ 61-7023 (2). © 71-7024 (2).

IF PREFAB NOSTALGIA WAS WHAT THE BOOK-OF-the-Month Club was seeking when it brought these seven swing vets together for two performances at New York's Town Hall in March 1985, it must have been plenty disappointed. In fact, the reunion turned out to be an all-male, all-jazz version of TV's *Golden Girls*: spunky, witty, rambunctious, spontaneous, and optimistic.

The first indication that this would not be the same old romp down memory lane was the lineup. The classic sound of the swing era was that of the big band, at whose center was the give-and-take between massed brass and reed sections. Even in smaller units, a saxophone or a clarinet was set off by a trumpet or a trombone. With its lone alto saxophone, played by Benny Carter, the *Swing Reunion* ensemble can in no way approximate that earlier style, and it doesn't even try. Its model is the smaller prebop club band that flourished along 52nd Street during the Second World War. Because of their diminished size, these bands were less dependent on arrangements, a flexibility that gave more room to soloists.

Apart from a few crowd pleasers—"Avalon," "After You've Gone," and "How High the Moon," the only numbers that use the full ensemble—the song selection here isn't



VIBIST RED NORVO: NO NOSTALGIA FOR THIS SWING VET

strictly tied to the '30s and '40s. Variety is maintained by shifting personnel around and by breaking the group down into ever smaller units.

Carter struts through "Exactly Like You," "On Green Dolphin Street," and "What Is This Thing Called Love?" in spirited form, but the reading of his exquisite ballad "Evening Star" is delicate and moving. Vibist Red Norvo's gentle style owes nothing to the razzmatazz of his swing-era contemporary Lionel Hampton. Norvo takes on modern standards like "How About You?," "There'll Never Be Another You," and "Here's That Rainy Day," as well as an inspired surprise, an unaccompanied "Dancers in Love" by Duke Ellington. The third major figure on *Swing Reunion*, pianist Teddy Wilson, is the most rooted in the past: his left-hand rhythms haven't changed since he perfected his style a half-century ago. He coasts through a *Porgy and Bess* medley and "Undecided," but "Body and Soul" and a Billy Strayhorn combination of "Lush Life" and "Take the 'A' Train" are more heartfelt.

Except for acoustic guitarist Freddie Green, whose solos over a lifelong career can still be counted on the fingers of one hand, each member of the rhythm section has a few turns in the spotlight. Remo Palmier, who might be most famous as the guitarist on the 1945 Charlie Parker-Dizzy Gillespie "Groovin' High" session, is more than solid throughout, and he acquires himself admirably on persuasive versions of "Polka Dots and Moonbeams" and "Star Dust." I've always found drummer Louis Bellson a little too flashy, but his charging beat keeps things moving here.

It may just be my fondness for great bassists, but I think George Duvivier steals the show. "E.K.E.'s Blues" and "I Can't Get Started" display his refined melodic gifts, and his sharp, walking lines cut through the ensemble like a tank. Duvivier was one of the most versatile and prolifically recorded musicians. (CONTINUED ON PAGE 87)

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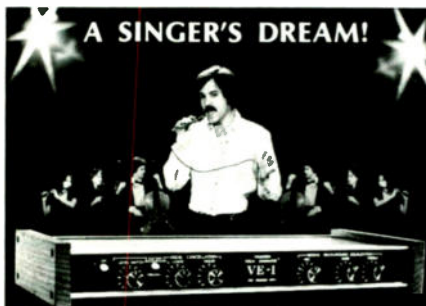
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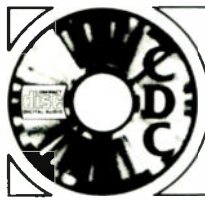
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(CONTINUED FROM PAGE 84)
sicians; his death soon after these concerts took place was a shock to the jazz community that had come to depend on him.

Because it calls to mind such a momentous epoch—a Depression, a World War, a nation furiously dancing its troubles away—swing music is incredibly powerful, evocative stuff. But this power can also elicit knee-jerk reactions. The reunion band could have drifted through competent versions of "Stompin' at the Savoy," "Don't Be That Way," or any number of other favorites, and the audience would have eaten it up. Thankfully, no one took this easy way out. In a sense, the title of this album is erroneous: The only way these men are bound to the era is that they haven't forgotten how to swing.

Steve Futterman

RAN BLAKE:

Vertigo.

Jean-Jacques Pussiau, prod. Owl 041. □ K 741. (Distributed by Polygram Special Imports.)

THIS IS PIANIST RAN BLAKE'S SECOND ALBUM inspired by his favorite films, atmospheric psychological thrillers that, it turns out, are appropriate visual correlates for his moody, nerve-jangling style. Unlike 1980's *Film Noir* (Arista Novus AN 3019, now deleted), which presented Blake with and without accompaniment, this solo live recital provides a more uninhibiting context for Blake's eccentric approach: a programmatic mixture of pop, jazz, and classical influences, unified by the repeated use of ringing dissonant chords, ominous bass rumbles, and dramatic silences. Still, the film-homage concept has its limitations.

This is most apparent in the title track, a long suite based on Bernard Herrmann's music for Alfred Hitchcock's *Vertigo*. It is a

beautiful, hypnotic piece, but despite the fact that Blake has added some ruminative fragments and devised a pastiche for the climax, its most arresting moments are note-by-note re-creations of the original score. Similarly, "The Wild One" is a fairly straightforward rendering of Leith Stevens's appropriately schlocky theme for that patently ersatz (but fun) flick. By contrast, Blake has devised a very effective setting for Karl Elfers's music from the silent classic *Doktor Mabuse*, framing it with thunderously grim and disorienting chords—and instead of just a respectable replication, we have an intriguing, original piece.

Usually, Blake is more impressive when he starts from scratch, though film buffs may quibble with some of his impressions. To depict Hitchcock's *Marnie*, he has written a bluesy theme with tense underpinnings, but that just doesn't fit the perverse remoteness and artificiality of the film. And the worrisome bass line and prodding accents he has contrived for Hitchcock's semidocumentary *The Wrong Man* may seem more appropriate for a *Peter Gunn*-type scenario. But the compositions themselves are small gems of dramatic construction, carefully nuanced short stories in a gothic vein.

The one cut that arguably falls outside the album's film-music theme, George Gershwin's "Porgy," keeps its torch-song contours but is embellished in such a way as to suggest impending madness. Blake's method is epitomized here: A muted but turbulent backdrop is established, over which a jagged, barely controlled version of the melody is stated as though in bas-relief. This is Blake's particular talent—he could make "You Are My Sunshine" sound chilling—and *Vertigo* is a good introduction to his angular, shadowy, but often strangely beautiful world.

Richard C. Walls

A Rubén Blades Close-up

(CONTINUED FROM PAGE 76)
dreams and the stylistic expertise to realize them (he's well versed in calypso, reggae, rock 'n' roll, and pop), he has consistently refused to water down his approach to fit commercial stereotyping. And as a Panamanian in a Puerto Rican scene, he has sometimes been perceived as an outsider in his own neighborhood. Arguing the case for Latin America when he first arrived, he soon discovered that political exhortations don't go down so easily in a community untouched by revolution. Not surprisingly, however, the most positive cut on *Escenas* is "Muévete," a rabble-rousing anthem designed to invoke the spirit of a unified Latin America. That Blades still finds his greatest strength in the political is understandable for a man whose ambitions toward a presidential candidacy in Panama have been well publicized. But music is not merely a soapbox. As the rest of *Escenas* proves, underneath the politico remains a legitimate artist struggling to grow,

honing his vision, trying to forge a universal bridge between the personal and the social. For Rubén Blades, it seems, the final barrio is only a state of mind.

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Advertising Index

Army	43
Audio Technica U.S. Inc.	6
Carver Corp.	27
Dealerscope	17
Denon America, Inc.	33
Epicure	Cover III
Fox Marketing	13
Illinois Audio	81
International Hi Fi	83
JBL	29
J&R Music World	71
Jensen	30
LaBelle Camera & Stereo	78
New York Wholesalers Warehouse	83
NRI	70
Onkyo U.S.A. Corp.	38
Pioneer Video	24, 25
Polk Audio, Inc.	8, 9, 10, 11
Radio Shack	3
Siefert Research	15
Sony Corp. of America	7
Sony Corp. of America	Cover II
TDK Electronics Corp.	4
Teac Corp. of America	14
Technics	Cover IV
Toshiba	5
Wisconsin Discount	74
Yamaha	34

Unquiet on the Western Front

(CONTINUED FROM PAGE 64)
 Music Group last November: After LP and cassette sales went soft and the label's CDs did not arrive in the numbers needed from its suppliers, the company filed for protection from creditors under Chapter 11 of federal bankruptcy proceedings.

No such fate is likely to befall any of the major players in the domestic Compact Disc market. Still, the position of the classical labels at Polygram, CBS, RCA, and Angel is by no means an easy one, since they are parts of larger companies whose decisions about CD production across the board often have a direct influence on how they are able to operate. (CBS, for instance, makes it a priority to keep stocks of its top 150 best-sellers, which usually are pop titles, in its CD catalog.)

On the classical front, Polygram and CBS clearly hold the high ground: About one quarter of U.S. sales go to CBS, and approximately half go to Polygram (which embraces the Deutsche Grammophon, London, and Philips labels). Not coincidentally, both firms have ready access to Compact Disc production. CBS's classical CDs now account for about 30 percent of the label's entire CD sales, and Polygram's classical CDs represented about 60 percent of the five million discs it produced in 1985.

The success of these two companies is naturally reflected in the sales each achieved for its top titles. Very good sales at CBS now run from 20,000 to 25,000 copies per year for a classical CD. At Polygram, they total between 25,000 and 40,000 annually for artists like Kiri Te Kanawa, Luciano Pavarotti, and John Williams, compared with a modest 1,000 to 2,000 in 1983, the Compact Disc's debut year in the U.S. Naturally, expectations at both labels for other discs are smaller: between 5,000 and 15,000 for artists with less crossover appeal.

But even such achievements as Leonard Bernstein's *West Side Story* (50,000 CDs in 1985) pale before the potential of pop hits, whose sales (John Cougar Mellencamp's *Scarecrow* has sold 150,000 CDs so far; Tears for Fears's *Songs from the Big Chair*, 165,000; and Bruce Springsteen's *Born in the U.S.A.*, 200,000) provide just the competition for production time that has sometimes delayed, but so far not derailed, the expansion of the classical CD catalog.

In certain ways, that expansion is less dramatic than it would seem to be on paper, because many classical titles, while they may still appear in the catalogs, are no longer available. The reason: The demands on press time are so heavy that once back stocks of an already-issued CD disappear, it is often impossible to schedule a supplementary run. Polygram recently circulated a list of titles that could no longer be back-ordered because stocks had been exhausted; consumers, meanwhile, are left to lament the fact that such choice items as Richard Strauss's *Four Last Songs* sung by Jessye Norman (Philips 411 052-2) cannot be found.

The squeeze undoubtedly affects RCA as

well, where classical titles represent 30 percent of CD sales. Unfortunately, the company would not reveal the extent of its current commitment from Denon (its CD supplier), individual sales figures, or even sales ranges, so comparisons are difficult to make. RCA had trouble through much of 1985 getting enough classical CDs to satisfy its retail customers. It's likely that the label's release schedule will be helped by the added capacity Denon granted early this year, which should increase the number of RCA classical CD titles, but still leave it far below the 12 to 15 that CBS issues each month.

A similar problem plagued Angel Records, whose ability to satisfy orders suffered when it, too, was short of discs. This accounts, in part, for the size of Angel's CD sales figures, which increased for top artists from 2,000 copies in 1984 to 5,000 in 1985 (corresponding LP sales declined from 3,000 to 2,000), but which were still below what might have been attained if the label had gotten all the discs it obviously needed. Shortage of supply even undid some well-laid plans. Angel's parent company, EMI, had to terminate a project (Liszt's piano transcriptions of the Beethoven symphonies) that was privately financed and half complete. The reason: insufficient capacity to release the recordings on CD.

American importers of classical CDs, principally from Europe, have routinely received fewer copies than they have needed or than their suppliers would have liked to provide. At some firms, such as Intersound (which represents the Supraphon and Telefunken catalogs) and Delos (which handles Bellaphon and Capriccio), the shortfalls of 40 to 50 percent in expected imports were an annoying part of a business picture that remains focused primarily on the production of CDs for the parent label. In spite of such bottlenecks, some titles of the foreign labels distributed by Intersound and Delos still managed to sell as many as 5,000 copies a year.

California's Harmonia Mundi, U.S.A., with 18 labels in its catalog, also reported shortages of CDs ranging, outside its stronger lines, from 50 to 90 percent. Such handicaps are no longer offset much by LPs, which, according to Harmonia Mundi's René Goiffon, now have an effective sales life of just three to six months after issue.

Records probably won't be much help for other classical labels either. If most observers are correct, Compact Discs will remain in short supply, because sales of CD players are expected to continue their advance in 1986, while at the same time the market for popular music CD titles expands. The pressure on CD manufacturers to meet the demand created by these new factors could further strain already overburdened production facilities. It would indeed be unfortunate if, as a result, classical music—now a significant element in the CD market—were once again to revert to its accustomed percentage of sales and attention. ■

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CLOSER THAN EVER TO PURE SOUND. One discovery led to another and it didn't stop until EPI engineers had developed tweeter diaphragms and woofer cones made of new materials formed into new shapes. EPI engineers even developed a special bonding process and special tools and fixtures to laminate together the cone layers with an ideal combination of stiffness and damping. The result is



drivers that stop producing sound almost immediately after the signal from the amplifier ends. The benefits are distortion-free sound from solo instruments, and superb detail and a sense of separation from groups of instruments.

The EPI Time/Energy Series represents the most



dramatic improvement in the fundamental fidelity of our speakers in the entire history of EPI. Now we know what computers are good for.

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