

Audio • Video • Autosound

# High Fidelity Trade News

A PUBLICATION OF COMMUNICATION CHANNELS, INC.

JANUARY 1983

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Retailing Electronics From

A TO Z

Winter CES Issue

HFTN Interviews:

Reese Haggot of Alpine

Lynn Morrison of BES

How A Video Camera Works

# When it comes to "industry firsts", Onkyo is second to none.

## ONKYO INDUSTRY INNOVATIONS

**1975**—Affordable Quartz Digitally Synthesized Tuning

**1976**—Quartz & Servo Locked Tuning

**1977**—Straight Low Mass Tonearms

**1978**—Auto Accubias

**1979**—Super Servo & Linear Switching For Amplifiers

**1980**—First Cassette/Receivers

**1981**—High Speed Dubbing Cassette Decks, Real Time Counters

**1982**—Receivers With Built-In CX Decoders



If you're surprised to learn that Onkyo was responsible for many of the major technical innovations in audio, maybe it's time you checked us out. We'll be displaying all our award winning products in our Hospitality Suite at the Desert Inn during the Las Vegas CE Show. We're certain that once you compare features, specs and price, you'll agree "nobody knows more about audio than Onkyo."

**ONKYO** 200 Williams Drive, Ramsey, NJ 07446

**Visit our Hospitality Suite, Desert Inn, Las Vegas.**

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World Radio History



# TDK IS DRIVING A LOT OF HEAVY TRAFFIC YOUR WAY.



## TDK's \$350,000 Pleasure Play-back Instant Winner Game Is Coming To You With Greater Sales, Greater Profits And Heavier Store Traffic.

Every time your customers purchase specially-marked TDK multi-packs of D, AD, SA audio cassettes and T-120 video cassettes, they'll discover a "Pleasure Play-back Instant Winner Game" card enclosed. Cards that give them the opportunity to win more than 65,000 valuable prizes instantly.

**Grand Prize** is a brand new, 1982 silver Corvette complete with a deluxe Alpine sound system. It's a win worth \$22,500! **First Prize** is a Panasonic VCR and Video Color Camera System. **Second Prize** is a deluxe Nakamichi Stereo Cassette Deck. **Third Prize** is 65,000 additional prizes including TDK AD, AD-X, SA, and SA-X audio cassettes.



### \$350,000 PLEASURE PLAY-BACK INSTANT WINNER GAME



## WIN THESE PRIZES... INSTANTLY!

**HOW TO WIN**

- Buy 10 specially marked audio and video cassette and video multi-packs.
- Enter the number on the instant winner card.
- Play the game.
- Win a prize instantly.

**ENTER THE BONUS PRIZE DRAWING**

Win a grand prize or more by entering the bonus prize drawing.

**LOOK FOR THESE TDK PRODUCTS**

AD, AD-X, SA, SA-X audio cassettes and T-120 video cassettes.



Quality Audio and Video Products

And that's not all. TDK even gives your customers a *second opportunity* to win a total audio and video home entertainment center valued at more than \$7,500. All major prizes will be awarded.

TDK is supporting this promotion with an extensive national advertising campaign in print and on radio. In addition, we are supplying all participating dealers with a full range of sales-stimulating POP support materials.

Don't miss out—cash in on your share of this exciting event. Contact your TDK Sales Rep today for complete details.

TDK leads the way to winning customers...instantly.

 **TDK**  
TDK LEADS THE WAY

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Audio • Video • Autosound

# High Fidelity Trade News

January 1983

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**MICROFIDELITY INC.**

# ACCESSORIES WERE 1982's PROFIT LEADER. NAGAOKA IS JAPAN'S ACCESSORY LEADER. NEED WE SAY MORE?

We'd like to, if you'll give us a chance. We'll show you the most sophisticated record care and sonic enhancement devices (record sleeves, preeners, anti-static guns, disc-stabilizers, etc.). We'll demonstrate cassette deck head cleaners, tape winders, splicers, as well as a full line of VHS-VCR maintenance equipment.

We want you to examine each and every one of our products from a performance, packaging and marketability standpoint. Then, when you hear our pricing and support programs, you'll witness a new leader in the accessories category being born.

Be there. At The Riviera Hotel, Room 551/553 at Las Vegas CE Show, January 6th thru January 9th.



Nagaoka, Japan's most prestigious audio/video accessories manufacturer.  
205 Liberty Square/Norwalk, Connecticut 06855/203-853-9792/Telex 643075 MI-FI INC NLK

Circle No. 3 on Reader Service Card  
World Radio History

## "Here's What's Happening"

As my younger daughter tells me on occasion, "Stand back! Here's what's happening!"

For *High Fidelity Trade News*, WCES rounds out an important year that has seen a new owner, a re-cycled publisher and the appointment of a new editor. Appropriately, a statement, or more exactly, a restatement, of the magazine's policy definitely is in order. So stand back!

First, the facts. Our company, Syndicate Magazines Inc., which includes HFTN and nine other publications, has become part of Communication Channels Inc. of Atlanta, a multi-million dollar publishing firm. I'm back in the driver's seat and Tim Martin, a bright young journalist, has taken over the editor's chair in Atlanta. Our sister publications remain *Ace International* and *CES Trade News Daily*.

As most of you know, HFTN is the oldest trade magazine in the audio field, dating back to the pre-solid state days of our fledgling industry. Lee Solomon established the publication in 1957, and for more than a quarter of a century, HFTN's prime function has been to help specialty dealers make a better profit by offering technical evaluation of new products and merchandising assistance on the sell-through and by examining marketing trends as they relate to product mix — all key ingredients for retail success.

The magazine always has dealt with high-priced, sophisticated products in the quality music reproduction field, and for the past four or five years, video and autosound have been important editorial considerations as well. Selling relatively complicated equipment to well-heeled customers always has been the function of specialty audio/video/autosound dealers, and it will continue to be. Some products can be sold in merchandising halls by part-time sales clerks, but components in our field must be sold with finesse. Selling here requires knowledge-ability, a sense of communication, reliability and back-up service.

Our dealers can't sell home entertainment products that fail to stand up.

Audio/video specialty dealers continue to sell a big percentage of the audio equipment sold in the United States and a lesser amount of nationally traded VCR, discs and autosound. Recently, home computers and games have been included in new departments in many of your stores.

And who are the sophisticated consumers who gravitate to those stores? They are up-scale folks who shop your outlets because audio/video specialists know how opera lovers listen, how a rock fan sees color and how to talk to an up-beat adolescent who itches for games and computers.

And what is the difference between other retailers and audio/video dealers? The difference is our people's acknowledgement of what has happened to current lifestyles — that people are interconnected humans, not robots, that home entertainment doesn't have to be mediocre, that programming doesn't have to be dull and that an honest retailer fixes his mistakes.

This business began with a search for better music listening and resulted in raising the level of music and home entertainment standards in America. We succeeded in changing America's listening habits and probably are about to upgrade its video habits as well. If we're smart, we'll help change its information gathering systems at home.

I see a high quality home entertainment system that takes advantage of a variety of signals — AM/FM, records, discs and audio/video tapes — all in well produced stereo, played on facing components with a big screen that also serves as a game, home movie and information-gathering and -sending device. Our dealers are the likeliest ones to understand and communicate these changes.

So, HFTN will continue to provide pertinent technical, merchandising and marketing information on audio, video and autosound products and analyze new equipment and trends in the home computer and games field. We'll continue to circulate 30,000 or so copies to audio/video specialists up to and including Pacific Stereo, Team and Tech. Record stores like Sam Goody's, with a history in high-end products, are within our target area; so are a few department stores and certain larger outlets that have made a commitment to qualify home entertainment. Traditional radio/TV stores, appliance outlets and mass merchandising retailers will be better serviced elsewhere, as will business computer stores.

As to the marriage of audio and video, it's a natural development that will allow us to see and hear the best concerts, movies, sporting events, opera, theater and ballet. After all, when we go to a show, we're using all our senses to pick up the action. Why not at home as well?

Competition will force us to sharpen our focus. Technical articles must relate to current problems; merchandising stories can't be simplistic and we'll have to offer more and better marketing data. And we might have to change our name to better suit changing times.

One change will be apparent in this issue. One of the advantages of our new capital arrangement is the introduction of a reader service card starting this month, an improvement that we believe will aid dealer-manufacturer communication.

And that's what's happening!

—GFS



# LOOKS AREN'T EVERYTHING.

One look at our new AA-R42 receiver and they'll want to see more.

Show 'em the AA-R42's dial-free design, fluorescent display screen, 20 station pre-sets, Auto Scan and Auto Fader.

One look at our new EA-G90 graphic equalizer and they'll want to know more.

One look at our new GX-F91 cassette deck and they'll want to hear more.

Tell 'em about the GX-F91's mistake-proof recording, Quick & Quiet, Auto Tape Tuning and wireless remote control.

You could easily sell these new AKAI components on their looks alone. But you really don't have to.

Because there's a lot more to AKAI than meets the eye.

Like loads of new human engineering. Improved price/performance ratios.

And plenty of what we're famous for.

Innovative electronics. The result: Components that satisfy the eye.

And the ear.

So start pushing *all* the

right buttons. With AKAI.

In this market, you can't make it on looks alone.

Look to AKAI for a total of 3 new receivers, 11 new cassette decks and 2 new graphic equalizers.

**AKAI**  
Hi-Fi & Video. ///

**MATSUSHITA MAKES COMPUTERS FOR I.B.M. JAPAN:** Matsushita has signed a contract to make small computers for the Japanese subsidiary of I.B.M., the Japanese newspaper *Asahi Shimbun* reported. A spokesman for I.B.M. Japan declined comment on the report but said that negotiations were under way between the two companies.

**dbx EXECUTIVES RESIGN:** David Blackmer and Zaki Abdun-Nabi recently resigned their positions as president and executive vice president of dbx Inc. The two men founded dbx in 1971, and company spokesmen say they are remaining available to assist in the transition. Charles Sweeney, president of parent company BSR (USA), has assumed Blackmer's and Abdun-Nabi's duties while retaining his responsibilities at BSR.

**MURA ACQUISITION EXPECTED TO BOOST REVENUES:** Mura Corp. has been acquired by Technicom International, a Darien, Conn., telecommunications company. The move is expected to provide Mura with additional financial strength and, coupled with the design experience of Technicom and parent company TIE/Communications, enable it to expand sales and products in future years. Morton E. David continues as chairman of Mura. George F. Hardy continues as president.

**UNIVERSITY STEREO FILES FOR CHAPTER 11:** Plans to diversify into video, computers and video games, reduce costs and build inventory were behind University Stereo's decision to file Chapter 11 bankruptcy Nov. 30. Since last April, reports say, the California-based audio chain has been forced to make private credit agreements with vendors, close down eight outlets and lay off more than 100 people to stay afloat in a softening audio market. Saying there is not enough business for large, audio specialty retailers to survive, spokesmen added that they decided to proceed with the Chapter 11 filing after a poor showing Thanksgiving weekend, with sales down 50%.

**NAKAMICHI FOUNDER DIES:** The industry mourns the loss of Etsuro Nakamichi, founder and chairman of the board of the Nakamichi Corp., who died Nov. 10.

**REALTIME RELEASES TWO CD'S:** Realtime Records plans to release its first two Compact Digital Audio Discs in the Sony/Philips format next month, using material from the company's digital master tape library. The first is *The Digital Masterpiece Series*, including performances by the Philharmonia Hungarica, conducted by Zoltan Rozsnyai. The second release showcases various jazz artists and styles, including Don Menza and His 80s Big Band, the John Dentz Reunion Band, Freddie Hubbard and Jack Sheldon's Late Show All-Stars. Suggested consumer price for the CD releases is \$15 each.

**PIONEER LIMITS TRANSSHIPPING BETWEEN DEALERS:** A new Federal Trade Commission ruling allows Pioneer Electronics (USA) Inc. to restrict transshipping to any dealer that does not meet minimum dealer standards established by the company. FTC Commissioner David Clanton stated that transshipments made to retailers that fail to provide adequate promotion and support services undermine the efforts of authorized dealers that do provide those services.

**VIDEO INDUSTRY LEADERS HONORED:** Dr. Norikazu Sawazaki of Toshiba America Inc., inventor of the Helical-Scan method of video recording; David Sarnoff, former chairman of the board of Radio Corp. of America; Nolan Bushnell, founder of Atari; and Andre Blay, founder of Magnetic Video Corp., were inducted to membership in the Video Hall of Fame at an awards dinner Nov. 17.

**CAL VISTA SQUELCHES TAPE BOOTLEGGERS:** Cal Vista International, through a permanent injunction received Oct. 26 in Houston, has put Charles Martinez and L. H. Worth, co-owners of Georgia and Texas retail outlets called Western Video, out of business and has obtained an additional \$17,500 on its original judgment. Cal Vista initially filed suit against the video outlet in May of 1981 when it was discovered the retailer was distributing pirated films on video cassettes.



# HOW TO BEAT ANY VIDEO GAME SINGLE-HANDED.

## WITH THE QUICK-SHOT™ JOYSTICK CONTROLLER

MODEL 318-101

Beating any video game is easy, but beating it single handed takes a lot more. It takes a good joystick that is responsive and comfortable. Now with Spectravision's new Quick-Shot™ Joystick Controller, you can do it all single-handed, control and fire at the same time.

One look at the handle and you know you'll have a better grip on your game. It's contour design fits comfortably around your palm. You can play for hours without developing a case of sore thumb. The firepower button on top of the handle gives you that extra margin of

### THE WINNING EDGE.

CONTOUR HANDLE  
AND RAPID FIRE BUTTONOPTIONAL LEFT HAND  
FIRE BUTTONUNIVERSAL JACK &  
LONG CORDREMOVABLE SURE  
FOOT SUCTION CUPS

### FOR USE ON THE

- \* ATARI VCS SYSTEM
- \* SEARS VIDEO ARCADE
- \* VIC-20 COMPUTER
- \* ATARI 400 & 800 COMPUTER SYSTEMS

speed. (We didn't call it Quick-Shot for nothing.) You also have the option to use the left hand fire button simultaneously. The four removable suction cups hold the

entire joystick firmly on any surface. It also comes with a long cord.

With all those superior features in one joystick, you know you got yourself a winning combination. And when it comes to beating video games, one hand is all you need!

Get the Quick-Shot™ now, you'll be that much ahead. After all, winning is what every game is all about.

**QuickShot™**  
BY **SPECTRAVISION™**

39 W. 37th Street, New York, N.Y. 10018

\* ATARI VCS™, 400 & 800 COMPUTER SYSTEMS™ ARE REGISTERED TRADEMARKS OF ATARI, INC. \* SEARS VIDEO ARCADE™ IS A TRADEMARK OF SEARS, ROEBUCK & CO. \* VIC 20™ IS A TRADEMARK OF COMMODORE

Circle No. 5 on Reader Service Card





Bose's "Installation of the Month" winner, Rick Tomfohrde of Audio Craft Co.

## Bose Announces Winning Retailers

FRAMINGHAM, Mass. — The 20th winner of Bose's "Installation of the Month" contest is Rick Tomfohrde of Audio Craft Co. in Carroll, Iowa, who installed the Bose car stereo system in a 26-foot Sea Ray Sundancer boat. Tomfohrde received a 1401 Direct/Reflecting car stereo system and a plaque.

The Bose Corp. also announced winners of the Bose 901 Best 8et Sweepstakes, a promotional program that awarded a total of \$22,000 to retail salespeople at authorized Bose dealer stores throughout the United States. Participants who sold Bose 901 Direct/Reflecting loudspeakers and the Bose Spatial Control Receiver were entered in 12 weekly drawings for \$1,000 and one \$10,000 Inner Circle drawing.

The \$10,000-grand-prize winner was James Burke of Woofers and Tweeters in Carrboro, N.C. Winners of \$1,000 were Charlie Bock, Stereo Barn, Ephrata, Penn.; Denny Scullion, Appliance Store, Gibsonia, Penn.; Roland Pena, Stereo International, San Antonio, Texas; Richard Tanner, All Star Audio, Houston; Anthony Ash, Stereo West, Omaha, Neb.; Richard Roberts, Stereo Systems, Jacksonville, Fla.; Richard Costanzo, Great American Stereo, Portland, Ore.; Raymond Bellison, Newmark & Lewis, Rockville Center, N.Y.; Eric Schaffer, Drucker's, Newark, N.J.; Richard Samuels, Audio Specialists, Tempe, Ariz.; Steve Harris, Wright's, Shreveport, La., and Jack Wagner, Stereotown, Largo, Fla.

## EIA Recognizes Industry Leaders

LOS ANGELES — The Electronic Industries Association presented its 1982 Marketing Services Award of Excellence to Jerry M. Orenstein, director of marketing research for Coleco Industries Inc., EIA's Annual Awards Luncheon, held Oct. 12, in conjunction with the association's 58th Annual Conference. This annual award is presented to an individual who has made outstanding contributions in the marketing services area and who has played a significant role in developing a new industry-wide marketing services program.

Also honored at the luncheon was Walter Edgington, vice president/marketing for GTE/Sylvania Systems Group, who was pre-

sented EIA's 1982 Distinguished Service Award.

The award recognizes and honors an individual who has made outstanding contributions to the association on behalf of industry.

In other conference business, the EIA board of governors elected Glenn E. Ronk (General Signal Corp.) chairman, William E. Boss (RCA Corp.) vice chairman and C. Travis Marshall (Motorola Inc.) treasurer.

Boss, division vice president for RCA's Consumer Electronic Division, has served as industry vice president for EIA's Consumer Electronic Group since 1975. In 1979, he was the recipient of the EIA's Distinguished Service Award.

## Court Refuses Retailer's Appeal

WASHINGTON, D.C. — The Supreme Court of the United States has refused to review a decision by the Second Circuit Court of Appeals in a lawsuit by a former retailer against Sony Corp. of America. The Supreme Court action lets stand the May 4, 1982, opinion of the Court of Appeals that found in favor of Sony, reversing a November 1980 U.S. District Court decision.

In the original decision, a jury had awarded more than \$2 million in trebled damages to Mendell Schwimmer, doing business as Supersonic Electronics. Schwimmer charged in a 1977 lawsuit that Sony had engaged in a conspiracy with other retailers to prevent Supersonic from reselling to retailers in other territories. Supersonic initiated the lawsuit after Sony demanded the company pay back \$54,000 obtained from Sony by submitting false cooperative advertising claims.

## FCC OKs Device For AM Stereo

KNOXVILLE, Tenn. — The key broadcast equipment element in the PMX AM stereo radio system by Magnavox has been granted type acceptance by the Federal Communications Commission.

Acceptance of the AM stereo exciter, the unit that prepares AM radio transmissions for stereo reception, enables AM broadcasting stations in the United States to put the Magnavox PMX AM stereo system on the air.

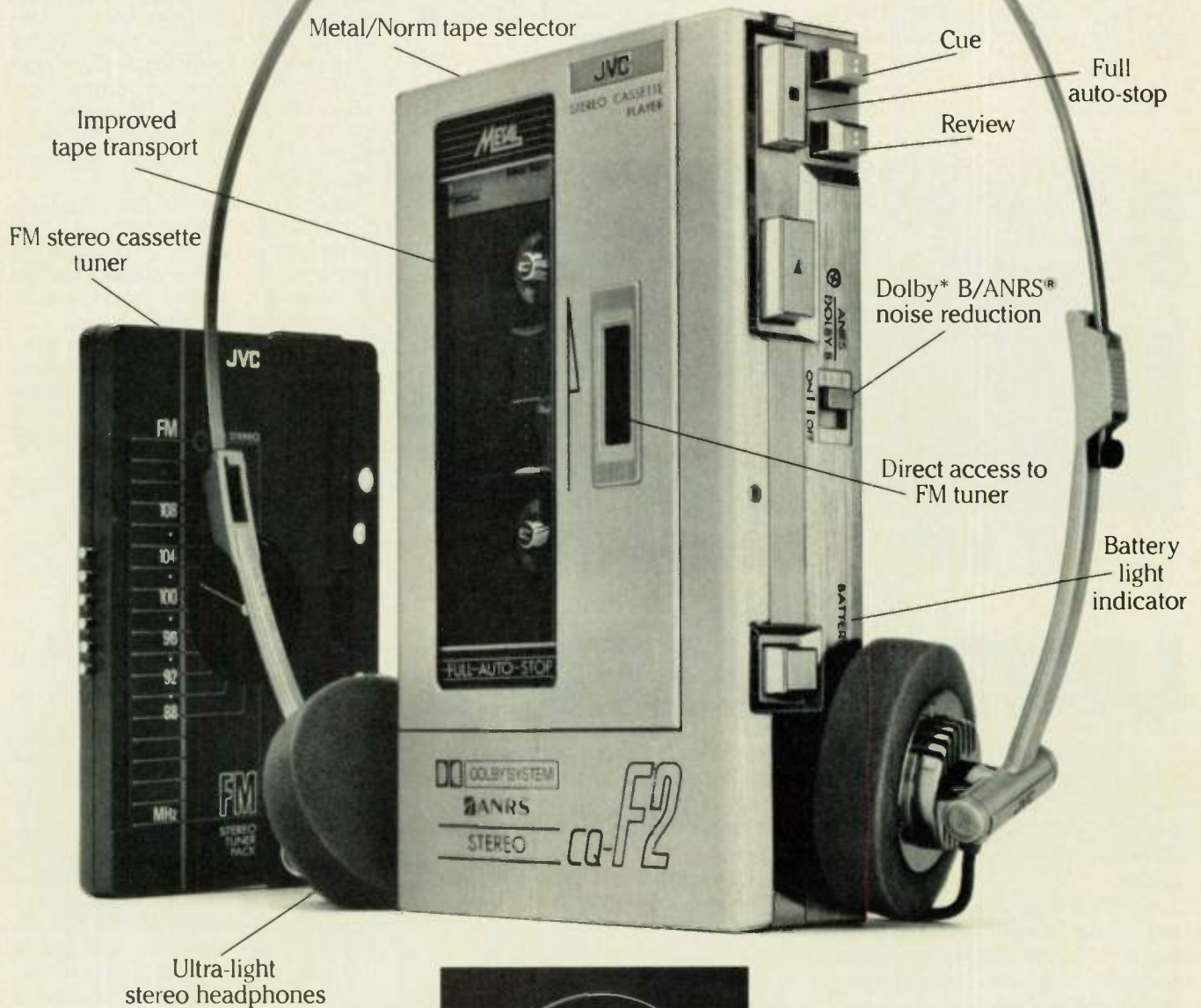
Announcement of the FCC approval was made in October by Johan C. Koppier, manager of business planning for N.A.P. Consumer Electronics Corp. here and Vernon Collins, vice president of domestic marketing for Continental Electronics Mfg. Co. Inc. of Dallas, manufacturer of the PMX stereo exciter.

"Acceptance of the Type 302A PMX exciter allows Continental Electronics to make final arrangements for production," Collins said.

Koppier reminded that availability and public acceptance of AM stereo receivers is also important to the success of AM stereo broadcasting. "Magnavox will market radios capable of receiving the PMX stereo signal in 1983," he said.



# IT'LL GRAB THEM BY THE EARS.



As you can see, JVC's new personal stereos are loaded with terrific features. Including two of the most popular features in audio today—Dolby\* Noise Reduction and Metal Tape Compatibility. All for a price that sounds as good as the music.

\*Dolby is a registered trademark of Dolby Laboratories.



Model CQ-1K cassette player

Start making your selling job a lot easier. Offer your customers JVC's two new personal stereos. In either cassette or FM/cassette models.

And start hearing more of the most beautiful sound of all: "I'll take it!"

## JVC®

JVC COMPANY OF AMERICA  
Home Entertainment Division  
41 Slater Drive  
Elmwood Park, N.J. 07407

## RealTime Reacts To DAD Market

CULVER CITY, Calif. — Based upon the availability of playback equipment for the compact digital audio disc and RealTime Records' first DAD releases in early 1983, RealTime has lowered the suggested retail price for all its audiophile phonograph records produced from digital master tapes from \$17 to \$9.98.

Company president Ken Kreisel said "We strongly believe that the

release of the DAD in early 1983 will change significantly the way the market views the analog phonograph disc. There no longer will be a marketing justification for a \$17 retail price for digital records when the consumer can purchase the DAD for approximately the same price."

RealTime will maintain a suggested retail of \$17 for direct-to-disc recordings, based on Kreisel's belief that these provide the highest quality of sound available from the phonograph album and because they are limited editions.

## Atari Initiates Legal Actions

SUNNYVALE, Calif. — Atari Inc., has filed suit against Commodore Business Machines Inc. and Sonocraft, claiming infringement on patents relating to its joystick controller and alleging unfair competition under the Trademark Act. Specifically, the lawsuit, filed in U.S. District Court of the Southern District of New York, asserts that Commodore's VIC 20 joystick infringes Atari's patents covering the joystick sold by Atari for its Video Computer System and home computer products. Atari also is petitioning the court to enjoin Commodore from making, using or selling the infringing joysticks.

Atari also has initiated legal action against the distribution and sale of offensive game cartridges, in amplification of its stance against recently announced "pornographic" video game cartridges.

According to Michael Moone, president of Atari's Consumer Electronics Division, "Atari, like the general public, is outraged by this conduct and we are taking the initiative by filing this suit."

Atari has decided to seek legal action against the manufacturer of the offensive game cartridges, American Multiple Industries, and the distributor, Mystique.



## IT WON'T DOMINATE A ROOM. UNTIL YOU LET IT.

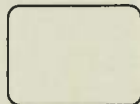
The Novabeam® Model Two is a portable video projection monitor that makes it easy and affordable to bring the excitement of high quality, three tube projection television home.

With a VCR or TV tuner as a source, the Model Two projects a bright, clear 5'4" diagonally measured picture directly onto any matte white wall or roll-down screen in a darkened room. And because it combines new engineering techniques with Henry Kloss's innovative Novatron® tube/optics technology, the Model

Two delivers superb performance.

For viewing, the Model Two is easily moved into position since it is no larger or heavier than a 19" color "portable" set. Yet it can be tucked away against a wall when not in use. The price — just \$2200\* — makes the Model Two even easier to bring home.

Call 800-343-1155 for full information and the name of your nearest Novabeam dealer. In Massachusetts, call collect 617-547-6363. **NOVABEAM®**



## THE NOVABEAM MODEL TWO PORTABLE MONITOR. PROJECTION TV THAT'S RIGHT AT HOME.

KLOSS VIDEO CORPORATION, 145 Sidney Street, Cambridge, Massachusetts 02139

Novabeam and Novatron are trademarks of Kloss Video Corp. ©1982, Kloss Video Corp.

\*Manufacturer's suggested list price. May vary with individual dealer.

Model Two pat. pending

## RIAA Files Brief Against Sony

NEW YORK — The Recording Industry Association of America filed an *amicus curiae* (friend-of-the-court) brief in October with the U.S. Supreme Court in the Sony "Betamax" case, supporting the plaintiff motion picture producers, Universal City Studios and Walt Disney Productions. RIAA's brief urges the Supreme Court to affirm last year's decision of the Ninth Circuit Court of Appeals holding that off-the-air home taping of television programming infringes the rights of copyright owners.

"Our purpose in filing this brief," RIAA president Stanley M. Gortikov said, "is to urge the Supreme Court to uphold the legal rights of the motion picture producers whose creative products are at issue in the Betamax case."

"In the long term, however, we recognize that the problem of home recording, both audio and video, must be resolved by Congress rather than the courts. That is why

Circle No. 7 on Reader Service Card



# SANSUI MAGIC IS NO ILLUSION

In times like these, Sansui dealers are a happy breed apart. They prove it in the one way that counts—profitable sales. In fact, for many dealers, Sansui is their Number One line in profitability. But this happy state is no accident. Sansui planned it every step of the way. It starts with selective distribution and continues with a diversified collection of high technology, high quality, high fidelity equipment—everything from our new state-of-the-art "Z" quartz synthesizer Compu-Receivers, to the "one-touch" simplicity of Sansui's popular new series of nine Intelligent Super Compo systems.

And in coming months there will be additional selling opportunities with

new products, including Sansui's innovative approaches to AM stereo and digital audio disc and tape systems.

But that's not enough for us. We are totally committed to a highly visible dealer support program: consistent year-round, high impact national and local advertising, sales-stimulating store aids and radio spots. And speaking of radio, Sansui is the exclusive sponsor of the upcoming American Rock Radio Music Awards program that will be heard coast-to-coast by millions of prime buyers of quality music components and systems. And with accelerated merchandising and marketing pro-

grams, Sansui's dealers are happy to know that they can look forward to a decided selling edge in 1983.

That's what Sansui's magic is all about. And it's the reason we put more profit in sound.

SANSUI ELECTRONICS CORP.,  
Lyndhurst, New Jersey 07071;  
Gardena, CA 90248; Sansui  
Electric Co., Ltd., Tokyo, Japan  
**See us at CES, Room 84A**



**We put More  
Profit in Sound**



we shall continue to press for the speedy passage of legislation now pending in Congress that would exempt individuals from copyright infringement liability for home taping activities while at the same time assuring reasonable compensation for those copyright owners whose works are taped at home."

## Students Join Computer Age

POTSDAM, N.Y. — Clarkson College will be the first university to provide desktop computers to all incoming freshmen beginning this fall.

The college has selected Zenith Data Systems Corp.'s Z100 desktop computers and the company will be supplying more than 1,000 computers each year for the next four years. The retail value is estimated to be in excess of \$3.7 million annually.

"This is something colleges and universities have been talking about for years," said David Bray, dean of Clarkson's Educational Computing Systems. "If all goes as planned in the course of time, every student at Clarkson will have a microcomputer and be linked to a campus-wide network."

The cost of the computer is being subsidized by restricted grants and students will pay \$200 each semester plus an initial one-time maintenance fee of \$200. At graduation the students will own their computers.

## BASF Shifts Governing Boards

NEW YORK — Dr. Hans Albers has been named chairman of the board of executive directors of the German-based BASF Aktiengesellschaft, the parent company of the worldwide BASF Group of companies. In announcing the appointment, effective June 30, the company's board of supervisory directors also proposed that Prof. Dr. Matthias Seefelder stand for election to the board of supervisory directors. Prof. Seefelder therefore will retire from his position June 30.

The supervisory board also named Dr. Ingo Paetzke to the BASF board effective Jan. 1.

Dr. Detlef Dibbern will assume responsibility for Information Systems and the Fibers Operating Divisions. Regionally, he will succeed Dr. Albers as head of BASF's North American Division on July 1.

# Reserve seventh row, center. Forever. At booth A-79.



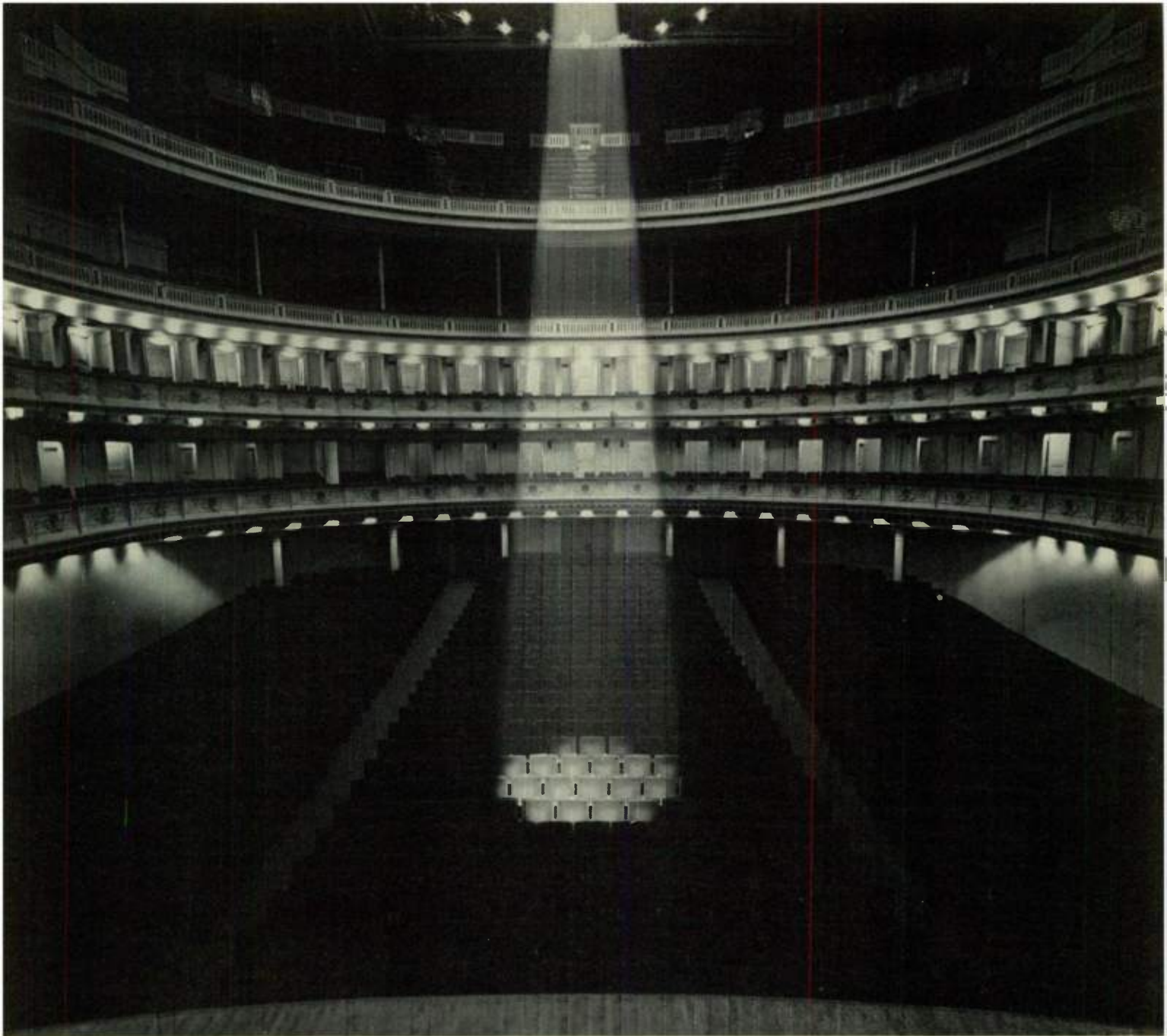
## INTRODUCING THE SONY COMPACT DISC PLAYER.

When you go to the Consumer Electronics Show, test-hear Sony's incredible CDP-101. The compact disc player from the company that co-invented the compact disc system.

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## Sony creates seventh row, center. Forever.

### INTRODUCING THE SONY COMPACT DISC PLAYER.

The inventor of digital audio processing is pleased to raise the curtain on the CDP-101. Hailed by the discriminating ears at *High Fidelity* as "the most fundamental change in audio technology in more than eighty years."

There are compelling reasons for such applause.

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beauty of Mahler or the Moody Blues as never before.

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Equally ingenious, an infrared remote control even lets you select tracks without budging from your armchair. Yet for all its sophistication, the CDP-101 is thoroughly compatible with whatever sound system you now own.

We suggest you hear the CDP-101

soon. For a sound you can't believe, from the audio innovator you assuredly can.

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# Welcome Back To Audio

B.E.S.'s Lynn Morrison says retailers need to concentrate on what made them successful in the first place

By Marcia Golden

## PERSONAL AD

Dear Audio Dealer: All is forgiven. Please come home. I know circumstances have broadened your perspective on our relationship and that you now have other interests. That's okay. I'm willing to share you with others. Please call soon. Love, Audio Industry.

It's not exactly the second coming, but audio retailers are returning to the fold — back to the industry where they all began: Audio.

"It's not as strong a category as it was before," admits Lynn Morrison, president of Bertagni Electroacoustic Systems (B.E.S.), a company riding hard on the comeback trail. "Many audio retailers are being distracted in business nowadays by so many other products, including video and projection TV, that they are losing their direction in terms of audio sales. They need to concentrate on what has made them successful in the first place. We see that the audio industry is beginning to recover and that retailers are turning back to audio as the focus of a home entertainment center."

Morrison, who expects his speakers will be positioned alongside a variety of video products, is part of a group of audio manufacturers that believes audio and video both sell compatibly and complement each other. He is also aware that a number of larger audio suppliers, who added video as a way to increase profitability and better service their dealers, have watched their video profits slip away and are now just trading dollars.

While he isn't looking to expand B.E.S.' product line on his own, Morrison does allow that B.E.S. is "looking for opportunities to line up with other suppliers." Video, he adds, could easily be one of the markets in which his company could participate.

Echoing other consumer elec-



Lynn Morrison

tronics suppliers, Morrison has also noticed a gradual shift in the way retailers view the current business climate. "People are more optimistically hopeful," he said, "or perhaps I should say they're guardedly optimistic. All of the retailers have had a difficult time in the last year and they are hopeful, in light of some of the current economic signs, that the coming year will be better."

As a result of that optimism and B.E.S.' limited distribution, Morrison says his dealers have not been putting the squeeze on B.E.S. loud-speaker prices. "We're not feeling that kind of pressure," he explained, "because we have such a limited distribution that there are not a lot of dealers selling in competition."

"We're also putting our product out as a high technology item and with our backing, our retailers are holding their prices. As a retail support program, we're determined to help our dealers develop advertising programs that target a particular geographic region. Our national ad agency, Orenstein & Associates, is assisting."

"In the past," he reports, "many manufacturers have dumped product on a dealer without proper marketing support. Smaller companies (like B.E.S.) can react faster to market changes and dealer needs."

One demonstration of B.E.S.' commitment to supporting dealers at the level they most need it — locally — was a joint promotion with Schaak Electronics, an audio/video chain headquartered in Minneapolis.

As advertised in *Twin Cities* magazine, Schaak and B.E.S. staged a B.E.S. Speaker Sweepstakes. Participants entered at any of the retailer's 14 area stores to win two tickets to the concert of their choice anywhere in the U.S. over 12 months. Winners received an all-expense-paid weekend that included airfare, hotel, dining and car rental, plus a pair of BES-270 speakers.

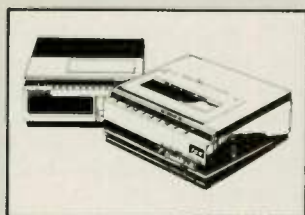
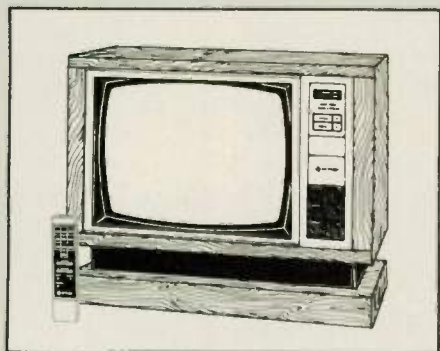
In addition, Schaak extended its B.E.S. test market program in its stores after completing a nine-store sales test in Chicago. "We will continue additional demographic testing to further strengthen the B.E.S. position," says Schaak buyer Denny Krueger, who added the speaker line would next be tested in the 20-store Minnesota market. If that test proves successful, Krueger will introduce the speakers into all Schaak stores.

B.E.S., which recently introduced its SM-280 speaker, will not open its line to include lower-end models. "We're seeing a shift in consumer attitudes. They want value for their money," Morrison explained. "A lot of people moved into supplying lower-priced products though, because they are selling better now than they did in the past when people wanted a high-priced status symbol."

B.E.S.' new speaker is a double diaphragm system incorporating the company's omni-polar sound dispersion and its polymer diaphragm. Morrison said it approximates the top-of-the-line B.E.S. SM-300 in tone reproduction and total radiated frequency response (32 to 32,000Hz). Suggested list will be \$550 per speaker, with immediate delivery.



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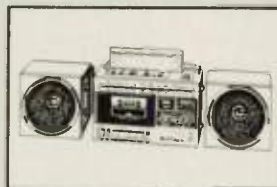
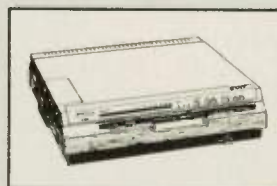
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# Audio Fashion Trends: 1982 And A Little Beyond

Looking at past trends in the industry offers a perspective on what to expect in the coming years

By Ralph Hodges  
Technical Editor

One obvious problem with the audio industry is that its spring and fall lines must substantially come into existence several years before the fact, and certainly long before it is known what man's, woman's or the economy's fancy will lightly turn to. One manufacturer confides that he is busily tracking projections and considering products for the 1990s! (The word is that 1993 will be a great year, so get ready.)

Thus the products we'll be looking at this month strongly reflect prognoses made two or even three years ago; and although the view up the road from that perspective was apparently not the most optimistic imaginable, it seems to have taken the measure of what lay ahead fairly accurately. Many of the new products of 1982 fit the situation well. It looks as though many of 1983's products will also.

Still, what one sees on a show floor today is merely what is available, and not necessarily what might constitute a trend: that is, a public acceptance and demand so ready that every manufacturer would have the feature if he had thought of it a year or two ago. And as we're all aware, any feature or capability a manufacturer lacks tends to become a non-trend in his public announcements — or at least a not-quite-yet trend. So you can't always believe everything you're

told or that you read (even here), and on that cautionary note we begin.

## Digital, Of Course

Digital disc is most definitely a coming trend, even if it was all size and no steak in 1982. Unlike four-channel receivers, the DAD players now being demonstrated everywhere required such extreme efforts in mechanical and optical engineering that it's hard to imagine the expense being written off, even if there weren't a potentially rich market in the data-storage field. Add to this the untiring promotion of Sony and Philips, and you realize there is certainly going to be a DAD in someone's future.

Paradoxically, however, although the industry has gone to some lengths to warn us of the rigors that a 90-dB dynamic range will impose, I have not yet been able to unearth any consumer amplifier or receiver due to get significantly bigger this coming year (more on this later); and with the exception of Yamaha, which is planning to introduce an all-out new top-of-line model this summer, all loudspeaker manufacturers seem bent on making their products smaller. They do indeed have much to say about increasing speaker efficiency. This will help out with the new smaller amplifiers, but will have nothing directly to do with the maximum acoustic output the speakers can deliver before they break up or break down. As a pretty reliable rule, a larger speaker is capable of playing louder.

Yet the situation is not so desperate as has been depicted. No competent symphony orchestra I've ever heard, or heard of, plays with a 90-dB dynamic range; breathing noises from the musicians themselves would bury the quiet pas-

sages. Pop bands with more than 25 dB of dynamic range are rare. Recording engineers experienced with digital wouldn't dare try to exploit a 90-dB range; doing so would take them too close to the forbidden overload point. And finally, the public would never stand for 90 dB. Turning up the volume so the quietest bits could be heard above environmental noise (perhaps 35 dBA) would peg the loudest sections at 125! The result would be not only unnatural and unpleasant, but potentially traumatic.

Informed opinion has it that a sound system comfortable with the best of today's analog recordings will do well enough with tomorrow's digital ones. Systems in trouble can be beefed up by subwoofers, as JBL anticipated last June with the introduction of its prodigious B460, and as several other manufacturers unexpectedly entering the field will show this year.

## What's On The Radio?

Word is that AM stereo won't be on the radio very much this year, except perhaps for the car radio. Sansui's high-gear advocacy of the concept was in evidence at the June show and at the Audio Engineering Society convention three months ago, and should be at this show. But most other receiver and tuner manufacturers, although crouched and ready to sprint, are still not going to move until the dust settles and the winning system emerges. Even Pioneer, which endorsed the Magnavox system very early on, but which is yearning to get to work with *any* system, has applied the brakes.

The leaders for the moment are the Harris and Kahn systems. We have, to give one example of the chaos, the Kahn system being



Before joining HFTN, Ralph Hodges spent 10 years as technical editor of Stereo Review and a brief time as communications manager for Dolby Labs.



broadcast in northern California and Harris on the air in Los Angeles. In the meantime, there are no generally available receivers for either system, or any other, so the FCC's prediction that "...the fastest way to bring the benefits of AM stereo to the public is by allowing the decision to be made by participants in the marketplace" is unlikely to be fulfilled. People wisely refrain from making choices between technologies they've never heard, so AM stereo is not yet a trend.

### Record Players

DAD may be coming, but the conventional record player is here, and that counts for a lot. No one heard from has any plans to stop building conventional turntables or designing new ones. The mix between direct-drive and belt-drive models promises to remain about the same, with most manufacturers having firmly chosen their sides and philosophies. Amongst high-volume manufacturers, the radial-tracking tone arm is looked upon with almost universal enthusiasm, the only question being whether it can be made more inexpensively and still work well enough. A number of those who have not already introduced such arms plan to do so, but in the still-hazy future. Most of those who have are striving to bring the costs down. The evidence has it that radial tracking is a trend, and one that will grow, even if the esoteric manufacturers, with a few exceptions, have abandoned it to its fate in the mass market.

The P-Mount headshell system, devised by Technics and made the standard throughout its line, has less certain prospects. Many manufacturers expect to mix (but not immediately) a few P-Mount machines into their coming lines. Others, particularly those courting the specialist dealers, find dealer reactions negative and the concept too limiting. The jury is still out.

### Phono Cartridges In Flux

As for phono cartridges, the situation remains truly in flux. At last October's Audio Engineering Society convention, B&O recounted an extensive series of listening tests in which, under rigorous controls, the moving-magnet principle won one round, the moving-iron another and the moving-coil no medals whatsoever. Opposition to the moving-coil principle is still strong among major manufacturers, and in time the MC cartridge could easily become a non-trend, which would make a few richer but not too many of us poorer.

The latest entry with a new amplifier configuration is Kenwood, which is espousing a design that switches, according to signal demands, between entirely separate low-power and high-power amplifiers for each channel. The overt goal is higher efficiency, but the underlying message is that the bulk and mass of large power supplies and heat-sink complexes have become so problematic to assemble, ship and sell that it might be wiser — at least for the upscale market — to give the consumer four amplifiers for the price of two, if the four result in a lighter, smaller package.

### Amplifiers et al

Manufacturers have been experimenting with small, light amplifiers and receivers for years, of course, but seem to have enjoyed little support or credibility until dealers realized what it all could mean in terms of overall costs, inventory storage and display arrangements. Now the downsizing trend is upon us with a vengeance. It will appeal to some buyers and estrange others, obviously.

The estranged will be those who have encountered high fidelity in

the homes of acquaintances (or who bought some components years ago that they want to replace), and who believe, often with justification, that a proper stereo system shouldn't be able to fit in a shoe box, and won't trust a manufacturer or dealer who declares that it can. In times past, downsizing trends rolled along very well for a while and then collapsed for lack of credibility and claimed performance. This time could well be a different story, but it may require a very persuasive *technical* story from the dealer to make it go in all cases.

Incidentally, manufacturers tend to feel that power outputs from 20 to 80 watts per channel will be right for the coming year, with 40 watts being the happy medium. The figures may seem marginal for the digital age, particularly when it's remembered that the analog market was happily soaking up 200 watts per channel and more less than 10 years ago. However, some loudspeaker manufacturers are predicting that their upcoming products will be able to live on 20 watts per channel and excel. Time will tell.

□

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# Retailing Electronics From A to Z

A potpourri of timely information on products, merchandising and trends



**AMPLIFIERS:** Nineteen eighty-three could signal the end of the power wars. It could also be the year the audio industry's ability and desire to pack more technology into separate amplifiers peaks. Peaks? Whatever are we

saying? Has amplifier technology reached such heights that its ability to improve further has reached the end of the line?

Could be.

In candid interviews with several audio component manufacturers, many suppliers advised dealers and consumers not to expect miracles of technological breakthroughs in amplifier systems.

In the past five years, they said, amp technology had progressed much more rapidly than had ever been expected. So fast, in fact, that it has reached the point where invisibly minute THD is within reach.

And if the difference between current product and perfection is practically invisible, they add, why bother going further?

Like the rest of the audio business, component amp sales have fallen off since the peak year 1979. The decline is partially a reflection of the economy and partially a reflection of the fact that the post-war baby boom has graduated — figuratively and literally — to other interests.

With manufacturers suffering major sales setbacks, retailers with capital could strike a hard bargain when placing amplifier orders. In the meantime, suppliers say they are waiting (im)patiently for audio's next big moment: the introduction of digital audio disc players. Other than that, they add, the only changes in amplifiers that retailers are likely to see will be slight refinements.

Some producers will fiddle with cosmetics; components will probably become sleeker and smaller. Prices will continue their decline. In addition, amps will appear more often as basic components of rack system packages.

Dealers might be able to capitalize on price declines through ad campaigns that stress consumer education. It might be easier to create a need and enthusiasm for amplifiers, especially as prices become even more affordable.

**ANTENNAS:** The signal from audio retailers to antenna suppliers is coming in loud and clear. Nineteen eighty-two was a very slow year. Assuming the role of forgotten product, audio antennas have slipped in sales, partly as a reflection of the generally sluggish econ-

omy, but also because audio salespeople have forgotten they exist as a useful add-on sale.

"What's happening," says Leon Kramer, vice president of sales for All Channel Products, "is that retail salespeople don't generally consider antennas an add-on product. Generally a person has to come in and ask for them before the salesperson would think of selling him or her one."

Kramer, who says his company's sales are "holding, in that they haven't gone up or down," adds that if dealers would push the product and display it, antennas would sell better. "An antenna is an add-on, but too often, after a guy makes a hardware sale, he just runs over to someone else unless the first customer specifically asks him for an antenna."

Jim Riffel, national sales manager for Winegard, agrees that the antenna market is slow and "that there has been some price erosion. But that's been the case in every industry with this so-called recession."

Riffel says sales of FM antenna have been "doing well" for Winegard, particularly an indoor model that features a built-in amplifier. In video, he adds, "the market is seeing an upgrading of systems. With all the new video components (VCR, big screen TVs), the need for antennas has increased."

"When there are multi-television set homes, there is a need for additional signal," Riffel continues. "So, people are going to larger antennas and amplifiers to compensate. Satellite antennas are also doing well."

Antenna suppliers also report feeling pressure from retailers to lower wholesale prices. "There is some price pressure from dealers to a point," says All Channel's Kramer. "But it's nothing major. Retailers cut the price on everything. It's no longer a question of whose product to cut, they're cutting the prices on everyone's goods."



**COMPUTERS:** Chuck E. Cheese's Pizza Time Theatres, a chain of restaurants, is spotlighting computers in its side show of arcade games, big-screen TV and electronic puppets. Pizza Time creator Nolan Bushnell — the brain behind Pong and Atari

— believes kids should become "computer literate."

Kids are playing with the home computers lined up next to last year's video games at Toys-R-Us stores. Dreams of Atari 400s, VIC 20s and TI 99/4As dance in their heads this holiday season.

Apparently more and more parents and kids are having their electronic age dreams come true. While fewer than 200,000 home computers were sold in 1981; 1.3 million were bought in 1982; and, an estimated 3.5 to 5 million will be purchased this year, according to a Texas Instruments spokesman.

The total micro computer market (including home units) shipped in 1981 was 1.1 million, or "more than the entire installed base of all kinds of computers made prior to 1980," remarked Daniel Ross, vice president of Timex Computer Corp. He noted an estimated 1.5 million micros sold in 1982 "could be increased by a factor of 10 by 1985."

With its \$99 price point, the Timex pocket computer has created a big splash in the market. "For the first time a fully programmable computer is within the reach of most American budgets," said Ross.

The ripple effect of the Timex move has contributed



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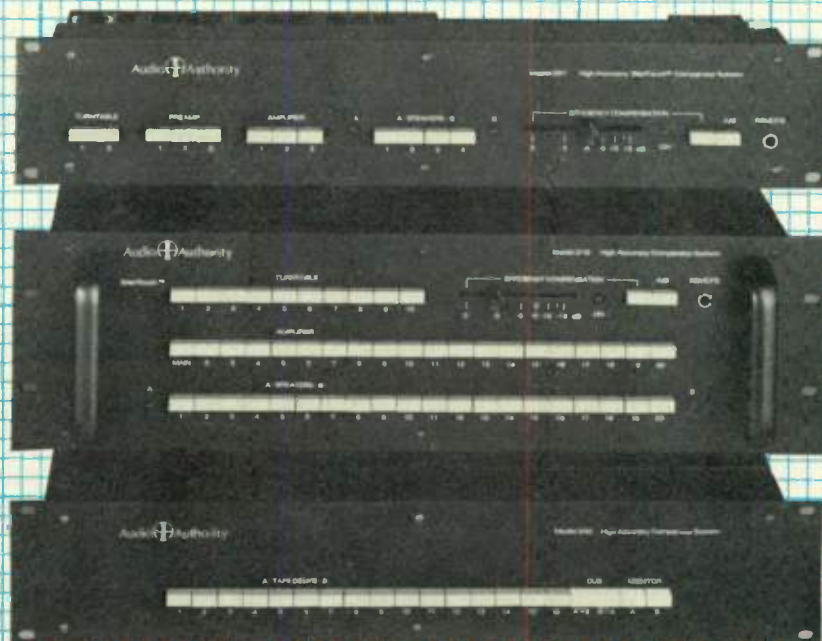
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to widespread price reductions in the home computers at wholesale as well as at retail. Other manufacturers are making waves with factory price cuts and consumer rebate programs.

Commodore reduced the wholesale price of the VIC 20. Texas Instruments gave consumers \$100 rebates on the 99/4A. Atari has also slashed prices. As a result of these moves, many home computers are selling for under \$200.

"It's becoming a home appliance," commented the TI spokesman. Computers are being "designed for all members of the family," he added. Like TVs, computers are being sold through a wide variety of outlets from upscale department stores like Bloomingdale's to mass merchants such as K mart and even in toy stores. "The marketplace isn't rational; look at all the different places people buy TVs," remarked the TI source.

"We have broadened our distribution," noted the TI spokesman. An estimated 9,300 dealers carry TI computers, he said. Like the manufacturer's learning aids such as Speak 'n Spell, the computers are being sold in toy stores. And a firm called 'Tronics is selling TI 99/4As like Mary Kay cosmetics via in-home demonstrations.

By the end of last year, Commodore VICs were in 10,000 outlets, according to Mike Tomczyk, product marketing manager. Commodore's distribution has grown rapidly; only 1,000 outlets carried its product last year, he noted.

Now shoppers can pick up computers with their Cherrios and Cheezits, mentioned Tomczyk. VIC 20s are on the shelves of a large supermarket chain on the West Coast. The button brains are also being showcased in special "computer departments" in department stores, he noted.

With 15,000 dealers, Atari is "still the leader" in computer outlets, which range from high-end specialty shops to upscale department stores and mass merchandisers, according to vice president Keith Shafer. "The future [of retailing] is in the super grocery chains," he added. Smitty's in Arizona and Super Safeways in California carry Atari software.

Mass distribution is the key to popularizing home computers. According to Timex Computer's Ross, there is a potential market of 98 million households for computers. "Timex is the leading share company in 1982 — over 26% (projected) — our share will be higher than that based on number of units," Ross noted. "We are manufacturing one computer every 10 seconds."

"The \$99 computer had a positive impact" on the home computer market, said Shafer. "People who weren't sure took a chance on them [\$99 computers]. It piqued their interest enough to buy another computer," he explained. While he wouldn't reveal figures on how many Atari buyers stepped up from \$99 computers, Shafer indicated an Atari market study revealed a trend in that direction.

Traditional computer makers entering the home market have had to try new methods of distribution. IBM has gone to independent consumer electronics outlets and computer stores for the first time to sell its personal computer (industry experts predict the computer giant will introduce a home unit at its CES booth). Digital Equipment Corp., Xerox and, of course, Radio Shack have their own stores that sell computers. With business systems already being promoted by AT&T, it may not be long before Ma Bell has home computers lined up next to its phones at Phone Center Stores.

Phones are already used to access data base networks via modems (which attach to the computer console). Promotion and expansion of such view data-type

services will help to stimulate interest in home computers as information centers. Already CompuServe has put World Book Encyclopedia on the screen. With the purchase of its modem (for \$109), Commodore is giving a free subscription to CompuServe. Even including the cost of the VIC 20, the deal is less than the price of World Book itself (however, the user must pay for the on-line service per hour of usage).

"The home computer market will more than double in '83," predicted Atari's Shafer. "It will grow at a faster rate in the next five years than TVs did in their introductory period." There were 15 million black/white TVs introduced into the American households during 1946-51. Shafer projected 30 million home computers would be sold in the next five years.



**EQUALIZERS:** Consumer-type equalizers, which permit complex shaping of a sound system's frequency response by dividing the audio spectrum into comparatively narrow segments (sometimes as narrow as 1/3 octave each) and affording controls to raise or lower the level of each segment individually, are generally intended for the correction of program-source and loudspeaker response faults and problematic room acoustics that interact with the loudspeakers in undesirable ways. They are also used creatively by recordists to modify the sounds of voices and instruments and thereby achieve an effect of some sort.

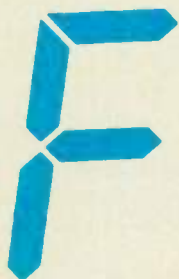
A basic equalizer is a set of band-pass filters — as many as there are bands (segments) to be controlled — and a front-panel array of (usually) sliders to control them. Because the positions of the sliders, when adjusted, roughly graph the response alterations introduced, these devices have acquired the name "graphic equalizer." However, there are also combining-band equalizers, with deliberate interaction between controls that permits much more detailed shaping of response curves, and parametric equalizers, with bands that are not fixed in frequency but can be slid up and down, as well as adjusted in narrowness. The combining-band instruments are almost impossible to adjust without test equipment, and probably for that reason are absent from the consumer market at this time. Parametric equalizers, which are extremely powerful tools in the right hands, seem to be represented among major manufacturers only by SAE.

Along with basic graphic equalizers, which typically offer from five to 33 separately controllable bands per channel, there are "embellished" graphic equalizers usually equipped with real-time spectrum analyzers so that their effect on actual test signals and music can be viewed dynamically, often with microphone inputs and microphones so that the analyzers can sample the actual sound in the listening room, and sometimes with microprocessor circuits enabling the analyzer, having sampled that sound from a test signal, to adjust the equalizer for flattest response without attention from the user. Other refinements include Soundcraftsmen's new system for achieving precise unity gain through the equalizer, and Sansui's microprocessor-controlled motorized sliders. And a new product category, the video-sound equalizer, has recently emerged, with recent introductions by Audio Control, Kenwood and Supers.

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A unique equalizer, the Adaptive Digital Signal Processor from Acoustic Research, is actually a micro-computer that, with its associated microphone, automatically analyzes and equalizes a specially constituted test signal entirely in the digital domain. The device is capable of setting up a set of as many digital "filters" as are needed for the correction job, with a resolution that is for all practical purposes within 1/100 octave. It is also able to alter its equalization characteristics in real time so as to process direct and reflected sounds differently. A fascinating instrument, and adaptable to other processing operations as well. But its price should keep it out of the hands and dreams of most consumers for some time to come.



**FLOOR SALESMAN:** The floor salesman, the person who forges the link between supplier and consumer, is the most important individual within the sphere of home entertainment. Ideally, the floor salesman is a

combination of professional talents. He is at times a college professor, usually a public relations officer and always a big game hunter.

At one time, the floor salesman in audio showrooms was a laid-back fellow dressed in faded jeans and boots. His manner and style of dress were identical to those of his primary customer: the young, free-spending male. Although relics of these 60s era floor salesmen remain, they represent an outmoded method of selling.

Today's successful floor salesman must keep pace with the new breed of customers that visit him. They are older and wiser now, and many are married. He sees more women shopping on their own, and they are expecting the best in advice and service. Although today's consumers may not spend quite as freely as before, they have more to spend, when they wish to. They aren't buying toys; they're *investing*. In order to obtain that investment, the floor salesman must now look and act the part. Jeans and boots have given way to ties and jackets. Fast-talking, spec-sprinkled pitches are dissolving into intelligent explanations of features and the benefits that they offer.

What the floor salesman is *not* is some guy watching the big-screen soap operas in the corner or playing video games on the computer display. He's in the store to provide prompt attention to his customer's needs. He is eager, without becoming overbearing. He's knowledgeable, but not technically confusing. His most important talent is an ability to impart to the shopper his honest enthusiasm for a product.

Today's shopper does not expect to become an expert on whatever he is shopping for by the time he leaves the store. (Who can honestly expect to learn all there is to know about portable video taping or home computer systems in an hour or less?) What the consumer *is* looking for is a feeling of confidence from a store, along with a reasonable introduction to the product category he is considering. The floor salesman should be capable of answering the questions, "Am I buying the right merchandise? Am I paying the proper price? Will it do the things that I want it to do? Will it last a long time?" By supplying honest answers to these queries, the floor salesman makes his living.

If the floor salesman is typified by any one element

of character, it is an open mind. Not only must he empathize with a bewildering variety of customers, but he must also be the first person in the community to accept changes and new technology. He is the first person to realize that owning a phone makes more sense than renting, and that computers have a logical place in the home. He proves this time and again by becoming one of the first customers to buy from himself!



**GAMES:** A fantastic battle is being waged in video mind space among Pac-Men, fearsome Kongs, Alien Invaders, armed Night Stalkers and Incredible Wizards. By the end of 1982, 15 million American families

were captured by video games in their own homes — transfixed before the blipping dots and exploding space ships on their TVs.

"Christmas 1982 will be remembered as the time when competition between video game machines and home computers broke into open warfare," said Commodore product manager Mike Tomczyk. "Some video games will become casualties."

However, the war machines of both electronics companies and toy makers are being fed with new technological applications that may defuse any potential fallout. There is a new generation of "super" games with increased resident memory as well as computer keyboards and memory modules for the more sophisticated games. At least one toy maker, Mattel, has decided to introduce the ultimate weapon in this "war" — its own computer.

Limited quantities of the Atari 5200 Super Game were shipped three months ago. Along with new controllers, the game has increased memory, noted Atari vice president Keith Shafer. "It looks like a super game, the style is futuristic, sleek." The Atari HES sells for \$260.

During the 1981 holiday season, Intellivision challenged Atari on network TV with its graphic realism. Now the toy company has exhibited a fully programmable keyboard with 16-bit microprocessor for \$150. The new technology will provide color-coded graphics, a new generation of sports games and individual custom programming.

Heralding the dawn of a new "age" (lowering the computer age), Mattel is also making Aquarius, a home computer. With 16-color graphics and CP/M capability, the unit eventually may be expanded to a maximum 52K memory capacity. There are several peripherals for the Aquarius: a 40-column thermal printer, a data recorder and a mini expander memory unit.

With its arcade-like graphics, Colecovision reportedly took \$3 million to \$5 million to develop and was back-ordered in excess of 500,000 units before Christmas. For 1983, Coleco has designed two modules — a converter for playing Atari cartridges and a dashboard for racing games — as well as a home computer attachment.

This year Astrocade (formerly Bally Professional Arcade) will debut a keyboard that will transform the sophisticated game into a 64K computer. The game already includes a BASIC cartridge with 12K memory (8K resident memory plus 4K RAM in the cartridge).

Commodore, the computer maker, has created MAX, an animated game, music synthesizer and computer



with keyboard. It is expected to compete "head to head with Colecovision and Intellivision," Tomczyk said. "We delayed entry because the VIC 20 was selling like hot cakes — the market is ravenous," he added.

The Commodore executive thinks newer video games approach the quality and excitement of real cartoon animation. Now artists and marketers are busy licensing popular books and films to create innovative games, whereas earlier game cartridges were "created by programmers working in isolation," Tomczyk remarked.

With their superior memory capacities, the games produced for home computers are more sophisticated and challenging than those made for simple video games. Atari has already signed contracts with Walt Disney studios and CTW (Children's Television Workshop, producers of Sesame Street) to develop educational software, Shafer mentioned. In addition, Mattel plans to expand its Intellivoice offerings with at least three new cartridges.



**HEADPHONES:** Some headphones are as discrete as wearing an electronic microphone while other sleek, lightweight portables have become almost a fashion accessory. Prices on the featherweight models used with Walkman-type radios and portable cassette decks have floated downward over the past year.

"There will be continued price erosion, with prices going as low as \$10 for the basic models with no pizzazz," predicted Barry Lipsky, vice president/operations for Mura Corp.

Portables will continue to gain in popularity. "There is an increase in portable vs. home stereophones," said Michael Koss, director of marketing for Koss Corp. "In unit sales, portables represent 59% of all unit sales (January to June 1982) and home units 40% of all units," he added. A whopping 90% of the sales are under \$29; 70% under \$19. "To go from the best to the worst [portable headphone] doesn't cost more than \$3 or \$4 at the consumer level," Lipsky remarked.

Some cosmetic changes have been made in stereophone design. Lipsky said some manufacturers now have a "single entry" phone that allows the cord to be attached at only one earpiece. "There is less tangling," he explained. Mura now has a convertible pair of Stereo Buds that can be worn as earpieces or as a conventional headphone with headband. The new Buds have a suggested list of \$14.95.

With the addition of Dolby noise reduction on Walkman-type radios, the prime way to improve sound is in the headphone design, Lipsky noted. New speaker engineering has improved the low frequency bass response. "We are always looking to get better performance from lighter motor structures using rare earth magnets to move the same amount of mass, Koss remarked.

While Koss probably has the "broadest" distribution worldwide, the firm is looking to expand further. "You have to merchandise in as many places as possible for the public to get at it," Koss explained.

Mura has moved into blister packing to accommodate drug stores and supermarkets, according to Lipsky. With a shorter life span for portables, Lipsky said there is already a replacement market.



**INVENTORY CONTROL:** Inventory control, or the lack of it, can easily spell profit or loss for large and small retailers alike. The terrible term "shrinkage" describes exactly what happens to your dollars when inventory is not properly controlled.

The retailer who seeks an exciting and inviting store environment for his shoppers is often faced with a dilemma. Should he strive for more impulse sales by openly bulking merchandise on display? Do the extra sales generated by that bulk justify the risks of theft? Certainly, different store locations and traffic situations indicate different tactics should be taken.

Inexpensive "necessity" accessories like blank tape and batteries often sell far better when bulked in open barrel or wall displays than when kept behind glass. Understandably, shrinkage risks rise accordingly. Accessory suppliers often assert that the sales increases of these high profit items more than make up for losses through theft.

Bulking larger items like tape decks and VCRs, of course, are safer bets in terms of controlling theft. Yet care must still be taken to locate *any* open merchandise bulks in areas that are in constant view of store personnel and away from entrances. Small, expensive products like cartridges or prerecorded tape should never be out of the counter at all.

Even when kept inside counters, merchandise is far from completely secure. The common glasstop retail counter is low enough to allow an unattended customer to reach behind and snap up a Walkman. For this reason, the most desirable merchandise should be on lower, out of reach shelves. Better still, lock the sliding doors on the counter and supply keys to the staff. A little inconvenience beats a lot of shrinkage.

When you must display open merchandise, such as phones or boom boxes, remember that they aren't called "portable" for nothing. Alarm systems should be used to protect the equipment. These security precautions need not result in an ugly display. Many new systems are small and less unsightly than older types. Some even operate by simply plugging the AC-operated product into the power line, and are tripped when the unit is unplugged.

A major cause of inventory shrinkage, unfortunately, is the retailer's own employees. Home electronic equipment can be expensive, desirable and compact enough to slip into a pocket. There are no sure cures for all forms of inside retail theft, but an increased alertness to the hazards will lessen your chances of loss.

Avoid ill-kept stockrooms with piles of equipment and empty cartons strewn about. An empty carton may not always stay that way. Do not allow trash to be emptied directly from the stockroom to the outside. It is not unusual to have merchandise tossed into trash barrels for pick-up later. Have your employees hang their coats and leave personal articles in an area separate from stock. If an employee makes a purchase or brings in an item for service, have management tag it appropriately, right away.

Double-check outgoing sold products and invoices on a regular, random basis. A dishonest salesperson can write up a ticket for a \$100 turntable, but release a more costly model.

Many security firms have noted that theft occurs most frequently among disgruntled employees.





**KINESCOPE:** A cathode-ray tube having at one end a screen of luminescent material on which are produced visible images.

A TV monitor, or kinescope, is the focal point of home entertainment. While tuners, with in-

puts and outputs for a variety of electronics, speakers and other peripherals, are important, the test of a video system is the picture. And monitors (as opposed to integrated systems in which the tuner and CRT are incorporated in one chassis) are promising, simply, a better picture.

The monitor market is growing, according to Mel Hunger, vice president/ marketing for Teknika, a pioneer in A/V component systems and manufacturer of studio monitors.

"People are looking for one really good system," he said. "There will be growth, but it will not suddenly explode." However, he predicted a dramatic increase in monitor sales in the next two years.

Most monitors for home use were debuted as part of "component TV systems by manufacturers such as Sony, Teknika, Panasonic, Zenith, Sanyo and JVC. Apparently, the monitor idea is catching on.

Kloss Video's newest projection TVs are monitor-only. Video pioneer Henry Kloss said the company developed the monitors "to be able to make a lower-cost set." The new 5'4" model introduced this month retails for \$2,200, while the 6'6" model 1 without tuner sells for \$2,900.

To complement these units, Kloss has designed a 105-channel, remote control tuner that will be priced close to \$200 and be available in the next couple of months.

The reasoning behind separate monitors follows that of separate audio components. In addition to the better picture manufacturers claim from separates, there is the opportunity to upgrade components without replacing an entire system.



**LOUDSPEAKERS:** It's a slow season in speakerland. While the total audio industry's sales profile looks more like a flat-bottomed boat than a profit and loss chart, speaker sales have suffered the brunt of the slump.

Figures circulating in the industry pegged dollar sales of loudspeakers in 1981 at \$415 million, and slightly lower volume (\$400 million) was predicted for 1982. Chances are, the picture in 1983 won't be much brighter.

Dozens of manufacturers have fallen by the wayside, leaving the independents who survive to fight for sales against such diversified electronics makers as Sanyo, Sony, JVC, et. al, over whatever slice of the speaker pie they can get. Anyone telling you his business is great, says JBL president Jerry Kalov at every opportunity, is telling you a lie.

But while speaker suppliers credit the soft economy and competition from computers, video games, VCR and other categories vying for consumers' limited dis-

cretionary income, as the cause of their woes, the real cause of poor speaker sales performance probably lies closer to home.

Because every audio system requires a set of speakers, speaker marketers and retailers used to be able to count on moving a pair every time they sold a receiver, compact or component system. If the buyer wanted to listen to music through something other than a pair of headphones, he or she was an automatic customer for a pair of speakers. Loudspeakers became a guaranteed sell, and salespeople and suppliers got lazy. They continued to be an easy sell until audio itself became a difficult sell in the face of competition from other electronics categories, a sluggish economy and unemployment.

Audio electronics manufacturers cut their losses and diversified their lines, moved into video and additional sectors of audio, consolidated new products into rack systems and instituted aggressive marketing programs. But for the most part, speaker suppliers sat tight and hoped they could weather the storm. A lot of them didn't.

Now almost two years into the recession, with Wall Street and economists hinting that prosperity might just be around the corner, those suppliers who are left are re-examining their marketing structures and product lineups and revving their motors for a renewed attack on the market.

The \$15 million or more decline, in loudspeaker sales experienced in 1982 has spurred some manufacturers to expand into categories, such as autosound, that might offer more potential. Others have initiated some of the most aggressive marketing campaigns the speaker industry has ever seen. In direct attacks on audio components, JBL launched a series of "policy papers" designed to revise the way both retailers and consumers sold and bought their audio systems.

One of the first papers suggested that loudspeakers (and cartridges) were the most important components of an audio system. It told audio dealers that their approach to selling audio components was "upside down." JBL asserted that for \$300, consumers could buy a receiver advanced enough to incorporate features and functions that were essentially state of the art. Spending more on electronics, the company explained, would only buy additional features or more power. It would not markedly improve the signal fed to the loudspeaker. The only way to improve sound significantly, according to JBL, was to invest in a superior set of speakers.

Electronics suppliers were in an uproar. Adcom was so provoked, it even distributed its own test results rebutting JBL's upside-down industry assertion. Nonetheless, JBL's tactic put speakers back on the map.

In other areas, speaker manufacturers lined up contracts with electronic suppliers who didn't manufacture their own speakers to produce two-brand components, while suppliers introduced product that appealed to different economic sectors. Mid-fi speaker makers debuted high-end product; high-end manufacturers introduced product retailers could promote. And some of the more creative expanded into autosound — an industry on the verge of a slump itself, but still performing much better than the home speaker market.

Audio retailers struggling with speakers could take a lesson from their suppliers.

When sales declined, manufacturers looked for new marketing avenues to generate sales. When speaker sales decline at retail, dealers can do the same. Marketing all video units — not just component TV — with a set of speakers and selling consumers on improving their video sound is one way to improve speaker sales



as well. Holding clinics to educate customers on the benefits of wiring a second set of speakers in a bedroom, a third in a den, and even a set in the kitchen, replacing the tinny sound available from most portable radios, is another way.

Rather than stick to traditional "trade-em-up" methods of speaker selling — retailers should learn to be innovative, even in advertising. By proving to customers that another set of speakers is more important in terms of value returned than another video game, the retailer may be rewarded with that speaker sale.



**NOISE REDUCTION:** Of the numerous noise-reduction systems that have appeared or been proposed, only five — dbx, Dolby B, Dolby C, CBS CX, and DNR — command any appreciable market share. Various tape-noise

systems from such companies as Sanyo, Telefunken/Nakamichi and Toshiba have largely faded out of the sales picture, as have several impulse-noise reducers intended to suppress intermittent record-surface noises. JVC's ANRS system, whose action bears a strong resemblance to that of Dolby B, is still found in several of that company's cassette decks, but nowhere else. Likewise, the so-called "Autocorrelator" noise suppressor is available in products from Phase Linear, where it was born, and from Carver Corp., where its principal inventor later migrated. To date it has not turned up elsewhere.

Of the big five, the first are *comparator* systems, and are effective only when they are set up to "loop" the recording medium so that the signal to be recorded is processed (encoded) beforehand and then deprocessed (decoded) at the time of each playback. In processing the signal is selectively raised in level to move it away from the anticipated noise level of the tape (or, in the case of CX, of the disc). In deprocessing, an inverse procedure electronically brings the relative signal levels back down to where they belong, while still maintaining the signal's strength advantage over the noise that was achieved in processing. DNR is a dynamic-filter system that works by attenuating higher noise frequencies when it can do without interfering with the signal's high-frequency content; it involves no prior processing of the signal to be recorded.

In philosophy and implementation, dbx and the Dolby systems differ significantly. The dbx objective is to provide the greatest possible amount of maximum noise reduction, and the system acts at all audio frequencies. Theoretically the reduction can be infinite, but in practice it is limited by the noise in the program source and the upstream electronics. The Dolby systems aim at the maximum amount of noise reduction possible without the systems' action becoming detectable through noise "pumping" or "breathing." The systems act only at those noise frequencies that are most obtrusive with cassette tape (and, as it happens, with FM broadcasts), and the available reduction is deliberately shelved to provide a maximum of 10 dB for Dolby B and 20 dB for the more complex Dolby C. The CX disc system steers a course somewhere in between, treating all audio frequencies but employing more moderate compansion characteristics than dbx.

Dolby B was a key ingredient of the first cassette decks to earn a "high fidelity" designation, and then

entrenched itself beyond challenge by being used almost universally to encode pre-recorded cassettes. The system is also found in a number of receivers and tuners to decode appropriately encoded FM broadcasts, and seems likely to repeat its success in pre-recorded cassettes with pre-recorded videocassettes. dbx has been gaining popularity in cassette decks (and will gain more this coming year), and has more recently and most usefully been applied to phonograph records (the encoding must take place when the record is cut, of course). Most recently, dbx encoded pre-recorded cassettes have become available. In the meantime, Dolby C, introduced in late 1980, has swept high-end cassette decks just as Dolby B did in its early days, and C-type pre-recorded cassettes may start appearing in this coming year.

CBS's CX compander system for phonograph records has had a slower start, hampered by significant encoded disc releases coming only from the Columbia Records family. Although the decoding electronics have been built into several receivers, amplifiers and even equalizers, many audio manufacturers perceive the system as losing ground, and some suspect the emergence of the digital audio disc will finish it. Ironically, CX has achieved its greatest acceptance in an entirely unexpected medium, the videodisc. Although the audio on a videodisc, being essentially FM, is recorded entirely differently from the audio on an LP, there are those who feel that CX ideally suits the videodisc noise spectra, and the system has come to be regarded as a stand for this application.

National Semiconductor's DNR dynamic filter has not penetrated home audio significantly, but is progressing well in the automotive market, and could dominate coming AM stereo receivers if, as seems likely, this medium does not adopt a compander system for encoded broadcasts. DNR is being challenged strongly in portable applications by compander systems (dbx has a battery-powerable IC out, and Dolby is on the verge), and in videodiscs (where National felt it had great potential) by CX. Informed opinion is that DNR will be limited to the low ends of these markets.



**PERIPHERALS:** Remember HAL, the talking computer with all the answers in *2001 — A Space Odyssey*? Today, with 18 years still to go until the 21st Century, home computers talk to their users, thanks to voice synthe-

Remember the library-computer from *Star Trek* that stored a vast mass of data on every topic conceivable? Memory expanders are available to stretch the storage capacity of home units. In addition, modems make possible access to outside data base networks containing a multitude of information sources ranging from the World Book Encyclopedia (available through CompuServe) to air travel schedules.

These peripherals, along with printers, disk drives and joy sticks, turn home computers into multifunctional electronic brains. When added to the console/keyboard, the "home" computer evolves into a machine capable of word processing, receiving and sending electronic mail, telecommunication, computerized teaching and home entertainment.

With more than 16 different peripherals, TI is a leader in the market. "The marketplace is evolving into a ra-



# Have you ever heard a cassette sound like real music?



**You've had your hair blown,**



**your glasses shattered...**



**now listen to real music.**

## **TO MAKE A CASSETTE SOUND LIKE MUSIC, YOU'VE GOT TO KNOW WHAT MUSIC SOUNDS LIKE.**

Other than making tape, most cassette manufacturers have nothing to do with music. Denon, on the other hand, has been in the *music* business for well over seventy years. Denon professional equipment can be found in almost every single Japanese radio station and recording studio. Denon is the company credited with the development of the PCM recording process, a development which has already revolutionized the entire recording industry. And, when it comes to tape, Denon has been making it for over twenty-five years.

## **CASSETTE TAPES CAN MEASURE ALIKE AND STILL SOUND DIFFERENT.**

Serious audiophiles know that components with identical specifications can sound noticeably different. Conventional measurement techniques do not explain this phenomenon, so words such as "musical" are often used to describe sound that possesses the "life-like" characteristics of real music.

## **THE FIRST TRUE MEASUREMENT OF TAPE SOUND QUALITY**

The reason conventional tape testing measurements do not tell the whole performance story is that they are based on simple test tones rather than complex musical signals.

Denon adopted a unique means for measuring Dynamic Distortion, the distortion created on the tape by actual musical signals. By specifically developing formulations to reduce Dynamic Distortion, Denon was able to significantly improve DX Tape's ability to accurately recreate the sound of real music. It is no wonder that Denon DX-Tape is rapidly becoming the first true "audiophile's" cassette.

# DENON

*Imagine what we'll do next.*

Nippon Columbia Co., Ltd., No. 14-14, 4-Chome, Akasaka, Minato-Ku, Tokyo 107, Japan  
Denon America, Inc., 27 Law Drive, Fairfield, N.J. 07006

zor/razor blade market for peripherals and software," commented a TI spokesman.

Those who buy six TI software packages (ranging in price from \$15 to \$89) get the \$149 speech synthesizer free, noted the TI source. The speech synthesizer allows the computer to talk and is ideal for educational applications such as teaching preschoolers to read.

TI also markets joy sticks, 32K RAM expansion modules, disk drives, RS 232 interfaces (used to hook up other peripherals) and a phone modem. At a suggested list of \$225, the modem can be used to access the Source data base.

Timex expects to be shipping a \$100 printer and a \$100 modem by the first quarter of this year, said Danny Ross, vice president/operations. The 40-column printer has alpha/numerics plus graphics (reproduced from the display). Through the modem coupled to the telephone, the Timex can be linked to any data base in the world, Ross added.

Besides a recorder and disk drives, Atari is coming out with a line of three new printers in the \$249 to \$549 range. At the low end is a four-color dot matrix plotter/printer. The top-of-the-line unit is "letter quality," Shafer stated.

Commodore was the first home computer maker with a \$109 modem for the VIC 20, according to product manager Michael Tomczyk. A free subscription to CompuServe was offered with the purchase of the modem, he noted. At the beginning of 1982 CompuServe had 24,000 members; that number has more than doubled thanks to the Commodore deal.

The new Aquarius computer from Mattel is being marketed with add-ons during its introduction. A 40-column thermal printer, data recorder, game controllers and mini expander memory were debuted with the CP/M capable machine, said a spokeswoman.

Tomczyk said most retailers who have recently discovered computers complain about the low margins on the hardware. "They learned to sell software like razor blades . . . but [computers] are not like video games [console plus cartridges]" he explained. "You have to sell disk drives, printers, modems, which total gross revenues in excess of \$1,000. "People come back to buy peripherals one at a time. It is one of the few ways an audio/video specialist can guarantee customers will come back," said the Commodore executive. The return visit could mean the purchase of other new products. "The secret is to treat it [a computer system] like a stereo component system," Tomczyk concluded.



**QUADRAPHONIC SOUND:** More technically, four-channel sound. Used most effectively today as audio's "Edsel" story when speculating about how the consumer will react to such technologies as digital audio disc

players, AM stereo and stereo TV, or, more accurately, how well manufacturers and retailers will succeed in communicating the value of the new technology to the consumer.

In its early days, industry leaders were looking at four-channel sound as a "vital force in their happy expectations," but also as a big headache. In 1972, an industry executive said it was incumbent on the industry to do the right educational job regarding four-channel sound.

Another executive noted, "There's a big marketing change taking place — four-channel. It's what stereo was to the mono hi-fi industry back in '58, complete with confusion, frustration and lost sales. We have a rough period to go through. Vital here and now is a whole new way of demonstrating the product."

Still, optimism was the rule. Mark Simmons with Electro-Voice expected four-channel sound to peak in the fall of 1972 and to be "even bigger than the peak achieved in the switchover from mono to two-channel stereo."

Early in 1973, retailers' opinions differed. "Federated (Electronics), which was barely a factor in the Los Angeles market two and one-half years ago, now is No. 2 in the California market, mostly because of its aggressive stance in four-channel," claimed marketing manager Michael Renne.

One retailer predicted interest would increase and that there would be a whole new picture when there were more recordings in four-channel.

More skeptical was Jerry Sharp of Henry Radio. "People don't come in and ask for four-channel. As long as the industry hasn't seen fit to standardize yet, I don't feel justified in advising investment in something that might be changed later on."

Interest in four-channel boomed in some areas. By late 1973, dealers in Southern California reported an average of 30% of sales going to four-channel equipment, more than double the volume credited to four-channel the previous June. Peter Huber of University Stereo suggested, "Hearing four-channel helps to sell it, and we were about the first in the area with good demonstration facilities and switching systems in all stores."

However, by mid 1974, four-channel was suffering from what one observer diagnosed as "pingpongitis."

"Just like stereo 15 years ago — *socko* in the right rear, *whambang* in the left front," he said. "It's flashy sound, but it doesn't convince a lot of customers. Instead they want to know two things. First, why four speakers? And almost in the same breath, why do I have to hear music behind my head?"

A few months later, analysts were beginning to debate what went wrong. "Just as everything finally came together and the 'fifth generation' of do-it-all receivers was made ready, negative feedback . . . from consumers to dealers and right back to manufacturers scared everyone half to death, and manufacturers backed away and introduced a variety of new stereo products. The damage had been done," they said. "Everyone started to mourn the premature death of four-channel sound as if there were no chance for resurrection."

By that time, the FCC had become a handy scapegoat to blame for disappointing four-channel sales. Analysts warned the industry not to wait for FCC approval of a standard for four-channel discrete broadcasting to cure the four-channel blues. "If you (do), you're going to be disappointed, and more than likely, by the time that does happen, your competitor dealers will have used their own initiative to promote the steady growth of four-channel sound while you miss out on that very important segment of the audio business."

Mid 1975 found four-channel showing new signs of life for some California retailers. More than half of Cal Stereo's system sales at the time were four-channel, and co-owner Ed Shapiro offered these suggestions: "Four-channel is easy to sell when you believe in it. All you have to do is tell the customer he can't possibly be any worse off with it than he would be with stereo. And if you can sell four-channel at about the same price as most stereos, that's it."



Five months later, industry observers were being forced to take back the optimistic projections they had made a year earlier and still were waiting for the FCC's approval of a broadcast standard to spark a renewal of interest in four-channel.

In 1976 the waiting continued. "As we move into 1976, we see four-channel as a dormant giant — not in terribly good health, but very much alive," wrote one hi-fi prophet. "When (not if) it is revived, those dealers who have prepared themselves for its resurgence by having properly equipped demonstration facilities for its proper presentation will be the first to reap the rewards that are yet to come. We may well be at the end of the bicentennial year before we see first signs of that resurgence."

Today, six years beyond the end of that bicentennial year, there are still no signs of resurgence.



**RECEIVERS:** What do consumers want from their receivers? Sometimes nothing more than a pretty face. In the past year, more receivers were bought for their flashing lights, remote control accessories and

a variety of bell and whistle features than for the number of watts of power squeezed into each system.

Such features as the ability to handle two pairs of speakers, digital readouts, station pre-sets and, in the case of cassette/receiver combinations, two tape decks, are top requests from receiver buyers, as is a \$400 retail price tag. Consumers are also interested in receivers that provide them with opportunities to upgrade by adding separate power amplifiers.

The word separate is important here.

In an effort to upgrade consumers and wean them away from one-piece compact systems, manufacturers and retailers spent years educating consumers to the benefits of owning individual audio components. And the education paid off. Compact sales dipped precipitously as first and second-time buyers took their first cautious steps into componentry: an integrated receiver, a separate turntable and a pair of speakers.

As the market grew in sophistication through the '70s, however, demand for integrated receivers declined. A 1981 survey of 7,900 *Stereo Review* readers reported that in 1973, receivers made up 20.2% of consumers' home, hi-fi dollar investment. In 1977, receivers accounted for 16.5%; 14.1% in 1978; 13.7% in '79, and 11.7% in 1981.

During that same period, sales of tuners and amplifiers held steady or increased.

What happened to receivers? One-brand systems.

When audio sales declined in the late '70s, suppliers searched for a marketing tool to boost sagging sales — one that would build on the foundation of component education built over the preceding years. The result was a decision to market one-brand component systems, the idea being that consumers did prefer to listen to their music through components but were overwhelmed by the amount of product to choose from, and uncertain of how to match components from different manufacturers successfully.

Introducing one-brand systems offered consumers the opportunity to purchase a system of pre-matched components from a brand name supplier at a number of price points.

Unfortunately for receiver manufacturers, one-brand often bypassed the integrated receiver for a separate tuner and amplifier, and sometimes included a graphic equalizer and a tape deck — values that couldn't be beat for the consumer.

But lately, receiver makers are fighting back. In an effort to recapture market share, they have introduced more features into their components. The newest entry into the category is the "casseiver," a combination integrated receiver and cassette deck. Priced a bit more than receiver-only systems, which are popularly priced to sell for \$400, casseivers sell for between \$500 and \$600.

Micro-sized receivers, as part of a total micro-component package, have not had much impact on the market to date. Retailers point out that most consumers "want to see a lot of product for their investment." So micros, when they sell, tend to be bought for the office user, not for the home.



**SUBWOOFERS:** The first word that comes to mind, of course, is bass. But it's not only *more* bass, it's *cleaner* bass — and, for that matter, cleaner sound in general.

A subwoofer can be added to an existing speaker system. In addition, more and more speaker systems are being made that include the subwoofer to begin with. The general idea in either application is to assign the deepest bass tones to a specialized driver in its own enclosure. When a speaker is designed to handle a limited portion of the total audio spectrum it can be optimized for that job more effectively than if it were also called on to reproduce additional portions of the total audio range.

At the same time, the other speakers in the system are relieved of the need to cope with the deep bass in addition to everything else. They, too, become more optimized for handling their portion of the response. The result is cleaner midrange and highs.

So the first and most important benefit of the subwoofer approach is cleaner sound generally — in addition to more defined and deeper bass.

Another advantage is the flexibility of installation. A typical subwoofer system consists of the subwoofer itself plus the normal pair (left and right) of "satellite" speaker systems. Because the deep bass is nondirectional, the bass from both channels can be combined for reproduction by a single subwoofer, which itself can be installed just about anywhere convenient. Many subwoofer cabinets are, in fact, designed so sturdily that they can do double-duty as lampstands or occasional tables.

Of course, whatever a common-to-both-channels subwoofer can do, an individual subwoofer on each channel can do so much better. Whether that much refinement is really needed in most home music systems can be debated. There is, however, an important related format — for a common subwoofer or for individual channel subwoofers — that is regarded by many experts as more relevant, although costlier and more complex to install. It is bi-amplification, whereby the subwoofer is energized by its own power amplifier while the satellite speakers remain energized by the "normal" stereo amplifier that would be required in any case.



In such a setup, the signal from the stereo system preamp is fed to an electronic crossover (EC). The EC separates the total audio band and feeds all signals above a certain frequency (chosen on the basis of the characteristics of the particular speakers being used) to the regular stereo amplifier which in turn drives the pair of satellites. It also feeds the remaining low frequencies to a separate power amp that drives the subwoofer (or subwoofers in a two-subwoofer system).

This kind of system not only provides all the acoustic benefits of the simpler subwoofer setup but it also helps preserve optimum power and damping relation-

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**A bi-amplified subwoofer system helps preserve optimum power and damping relationships between the various speakers and their respective driving amplifiers.**

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ships between the various speakers and their respective driving amplifiers. It also can be expected to minimize any phase distortion that might otherwise be present as a by-product of having to use a crossover network (a passive device) as opposed to an electronic crossover (an active device).

The whole subwoofer idea, including bi-amplification, was once regarded as somewhat esoteric and of limited consumer appeal (such systems are widely used in sound-reinforcement work and by live performers). However, with upwards of 40 manufacturers now offering one or another form of subwoofer system, this particular area of audio could well become a new trend among home music system owners. It is, in any event, certainly worth calling to anyone's attention.

**STYLUS:** The smallest part of a stereo system is one of its most critical. The sound of a record literally starts with a stylus tip riding in the record groove, sensing the wiggles along the groove walls (the modulations) and transferring those wiggles as faithful vibrations to the cartridge movement. The cartridge, in turn, produces an electrical signal replica of the wiggles and, eventually, the sound listeners hear from that record.

The object of stylus design is to allow it to do this demanding job as well as possible while minimizing wear and tear on the record that results from its rubbing against the groove walls.

Basically, the size and shape of a stylus relate to the geometry of the record groove. Those old 78-rpm records required a stylus tip that was conical in shape and 3 mils (0.003-inch) in diameter. The LP disc needed a narrower stylus tip, 1 mil across. If an LP was played with a 3-mil stylus, it would gouge the groove. If a 78-rpm was played with the newer 1-mil LP stylus, the stylus would rattle around in the groove.

When stereo discs were introduced, the stylus tip shrank again to 0.7 mil to suit the narrower groove, but the new stylus, it was discovered, played mono LPs as well as stereo LPs. Soon after, designers learned that a 0.6-mil or 0.5-mil stylus tip improved tracking ability of the high frequencies. Pickups fitted with such "advanced design" styli typically had such other refinements as higher compliance, reduced mass and extended or smoothed-out high-end response.

Theoretically, an even smaller tip radius would trace the record groove better yet. But, make a conical tip too small and it can bottom in the record groove instead of riding along its sidewalls.

The answer to this problem was the elliptical or biradial stylus, with a very small radius at its sides (typically 0.3 or 0.4 mil) and a longer dimension across (0.7 to 0.9 mil). In this way, the stylus can trace the most subtle of modulations along the groove walls, while riding comfortably above the actual groove bottom. This type of stylus also has proven fine for older mono LPs. In fact, because it often rides through the mono LP groove at a slightly different height than did an older stylus, the elliptical stylus may trace a portion of the groove walls not yet worn by that older stylus and thus produce a fresh, almost new sound from older mono LP discs.

The advantage of an elliptical stylus, however, also causes a possible disadvantage. Because the record groove is contacted by a smaller part of the stylus than before, a given amount of vertical tracking force actually results in greater pressure against the groove walls. For this reason, the elliptical stylus should be used only in tonearms that can track at relatively low VTF (2 grams generally is given as the maximum). And the arm itself should be of low-mass, with good balance and provision for anti-skating. If it is a radial-tracking or tangential tonearm (as opposed to a pivoted arm), so much the better.

A variation on the elliptical or biradial stylus is the Shibata, developed originally to handle the so-called discrete four-channel disc. Since the demise of those discs, it also has been found eminently suited for all microgroove discs, with the provisos that it is used in a high-quality pickup and excellent tonearm. The Shibata, in addition to being basically biradial, also has special facets ground on the tip surface.

Other variations on the basic elliptical stylus include the Van den Hul stylus (espoused notably by Goldring), the hyperelliptical stylus (introduced by Shure) and the "linear-contact" stylus favored by Audio-Technica. All of these styli typically are found in high-quality cartridges that are designed for use in the best available tonearms.

Once a stylus and cartridge have been chosen, the owner periodically should recheck adjustments on the turntable for correct vertical tracking force, anti-skating (if provided), tonearm balance and, most importantly, stylus cleanliness and condition. The best stylus will cause records to sound distorted and will hasten their wear if it is dirty or if the tip has become worn.

While stylus geometry often is a theoretical matter open to debate, stylus dirt and deterioration are realities that cannot be ignored. Equipment buyers should be encouraged to inspect their styli or, better, bring them in for periodic inspection under a microscope.

**SATELLITES:** The "satellite" we're talking about now does not refer to the speaker that goes with a subwoofer. This "satellite" is short for "satellite-to-earth-station" and indeed the term "earth station" seems to be taking over as the term to describe this type of broadcast reception setup.

It includes the dish antenna and an electronic frequency converter. The dish — aimed at an orbiting satellite — collects the signals from the satellite. The signals are sent up there by various broadcasters (TV and FM). The carrier frequencies are in the gigahertz range (that's billions of Hertz), which the converter for TV changes to a range suitable for viewing through a low VHF TV channel. Yet another converter is needed for FM.

From a marketing standpoint, satellite earth-stations are currently very high-ticket items with an average selling price of \$5,000 to \$6,000. Exact sales figures to date are uncertain, with average estimates for the past



two years coming to 65,500 setups. In addition to the high cost of these installations, their size creates challenges for stocking, delivering and installing them. Already, the few "big dishes" set up in some middle-class suburban locales have drawn the fire of neighbors who object to how they look.

All these factors continue to limit the use of present-day earth stations. However, it is expected that within 10 years both size and cost will come down dramatically. One pending development is the 4-foot dish antenna that would be better suited for rooftop or backyard installations. Price projections put these dishes in the \$350 to \$500 range by 1990.

With potential sales of 12 million units in the next decade, this kind of product looms as a major addition to the normal inventory of many retailers. Combined with the launching of new satellites and the increased use of existing satellites, earth stations also could have far-reaching effects on the television industry in terms of programming and commercials.



**TURNTABLES:** The biggest newsmaker and most postponed product award in the turntable category goes to the digital audio disc player. Tentatively scheduled to debut in the United States ("anytime soon") before

1984, compact disc players are beginning to enter the

market in Japan and should be available in Europe by the end of the first quarter of this year.

Regarded as the one product that could restore some of excitement, pizzazz and sell-through to the audio showroom, digital audio disc players have been touted as both a saviour of audio and a slayer of existing records and turntable markets — statements to which both Sony and Philips take exception.

Both companies insist that their player will neither make obsolete current turntables in the near future nor render treasured collections of record albums valueless; nor, given its estimated price tag (\$1,000) is it likely to become a consumer impulse item. And, given resistance from U.S. record companies, who are reluctant to sign agreements to produce software for the new technology, manufacturers continue to postpone the compact disc's American introduction until enough software and titles are being produced.

In other categories, turntables have been selling steadily. Prices on linear tracking turntables have declined from \$600 to \$200 and could go lower. Manufacturers are adding extra features, such as programmable selection. Remote-control add-ons should give turntable sales an added boost in 1983. And space-saving design, like front-loading turntables, could have just the kind of cosmetic appeal that consumers crave this year.

One-brand system sales, which rose approximately 10% to 13% in 1982 over 1981 sales, according to industry surveys, have also helped turntable sales.

In addition, retailers have been able to tie on additional turntable sales to purchases of "portable" mini components. A number of manufacturers have introduced lines of portable mini components that may be

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used out-of-doors as one-piece units, or indoors as separates. Systems generally come with their own detachable speakers and include receivers and tape decks, but not turntables. Dealers who can convince customers willing to spend \$150 or more on a portable package that adding an inexpensive turntable will give them an instant total home audio package will find themselves with a ready made profitmaker.

**TAPE:** If retailers selling blank audio tape didn't make a killing during the second half of 1982, it wasn't necessarily the fault of their suppliers. Several manufacturers, most notably TDK and Fuji, debuted new tape packaging and/or formulations at the Summer Consumer Electronics Show and were anxious to sweep old product out of the pipeline and introduce new goods onto dealer shelves. As a result, dealers with money could make sweetheart deals, buy themselves plenty of tape (cheaply) and still make a profit selling it at a discount.

And because sales for 1982 were down somewhat, some suppliers also instituted generous promotional programs. Retailers did and will be able to participate in a number of premium giveaway, multi-pack discounts, special packaging and even credit card ventures.

For example, three-packs of Loranger Entertainment's Loran high bias tapes include an American Express Rebate Certificate worth \$2 towards the purchase of three or more cassettes.

TDK has unpacked three new audio point-of-purchase displays for store walls, the counter and even a display stand for the sales floor.

Maxell is running a joint program with TEAC that includes audio tape with TEAC decks. The company is also breaking an ad campaign on selected cable television channels: MTV, Cable News Network and ESPN.

BASF, which has been focusing on promoting its chrome tapes through its "world's quietest tape" campaign, should be debuting promotions highlighting IEC-II chrome tape, a reformulation of the Professional II. The company will also be watching sales of its C-120 metal particle cassette.

Current market conditions have forced blank tape suppliers to become more flexible than previously. Maxell has tightened its promotion schedule to coordinate with its dealers' smaller, but faster, reordering. Other suppliers may even trim their audio tape production capacity until blank tape sales increase enough to warrant going ahead full-speed.

**TUNERS:** Tuners are one of those neglected components at the mid-fi range that are often overlooked in favor of integrated receivers. According to a 1981 *Stereo Review* survey of 7,900 readers, tuner sales have only accounted for a steady 4% of the total consumer hi-fi dollar investment.

Part of its problem in gaining a larger market penetration is its high-tech mystique. Tuners' "audiophile" aura has always made the category especially appealing to consumers interested in upgrading their original systems. They delighted in "shooting the specs" with audio sales people, chatting about the increased quality available to them if they separated their tuner from their amplifier. Most of these separates purchasers also appreciated the air of audio sophistication that owning a separate tuner instead of an integrated receiver lent to their hi-fi systems.

But those same qualities that made separate tuners so attractive to the "spec-hound" turned a majority of consumers off to separate components. Fearful of "tech-speak overwhelm," most first-time buyers opted

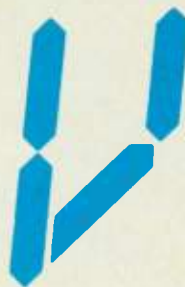
instead for integrated receivers. Or, if they had the money, they purchased a one-brand rack system that came with a separate tuner as part of the package. A very uncomplicated purchase.

In an effort to reach the mass market, suppliers redesigned tuners to make them more "user friendly." They added such consumer convenience features as station pre-set. Size and cosmetics are growing in importance to component shoppers. Digital displays give consumers a feeling of space age technology and a sense of control over their system. "When the station display reads 94.5," says one retailer, "that customer feels he or she has really gotten a lock on that station."

Size is also important. Consumers want components small enough to stack, or slim enough to slide into shelves, but not so tiny (as a microcomponent system) that a visitor to their home can't appreciate the owner's investment.

Increased promotion on separate tuners could be a key to boosting tuner and other component sales. Just as merchants in such categories as games, computers or telephones are investing money in consumer educational advertising, so too, should retailers wishing to make more money selling tuners.

Educational advertising and public relations were marketing tools in which audio dealers once invested heavily. There are still customers out there interested in acquiring sophisticated audio systems (particularly the women's market), but they are usually unsure of exactly what products are available to them. Taking the time to explain to a customer how opting for components offers them the flexibility to add other electronic equipment (additional speakers, amps, compact digital audio discs, etc.) without trashing an entire system (as happens with compacts), could even create a step-up customer out of that first-time buyer.



**VIDEO:** Video isn't just TV and it isn't just VCRs either. The video monitor/receiver is the centerpiece of a vast array of electronic equipment, the focal point of a home entertainment system.

The screen plays images generated by a variety of consumer products. New worlds of fact and fantasy flash on the set: *Kaboom!* You missed one of the bombs dropped by a Mad Bomber created by Atari's video game. *Splash!* Popeye rescues Olive Oyl in the video disc film. *Splat!* There goes the birthday cake on the floor in your home movie shot with your VCR and camera. *Blip, blip.* Up comes your 1982 tax form from your TI 99/4A.

There are many new sources of programming from the broadcast media, from telecomputing data bases, cable TV and UHF. AM stereo will enhance musical events. Direct broadcast satellites will bring the world home. QUBE two-way systems for shopping at home, voting on issues and going to classes via TV are a reality.

With the flexibility of first run films on tape and taping your own home movies, VCRs are a "growth business," commented Arnold Valencia, president of RCA Sales Corp. "Portable VCRs are an increasingly important part of the business . . . [they] offer the same feature package as table models at comparable prices."



ing," he noted. Of course, portables offer another sales opportunity — video cameras — Valencia mentioned.

VCR sales reached 2 million units in 1982, Valencia said. He expects the trend to continue this year, "fueled by lead table models (\$399 retail for beta units, \$449 for VHS)."

Stan Hametz, Panasonic general manager for consumer video, predicted 2.3 million units will be sold this year as the industry approaches 8% penetration. He thinks pricing will be lower depending on the value of the yen.

According to Edward Adis, senior vice president, Sony Consumer Products, the second half of 1982 was a "tumultuous" period for VCRs. There was "tremendous price erosion" brought on by "large inventories" coupled with a downtrend in consumer buying, he explained. However, Adis noted the roly-poly market "broadened the base of the consumer down to the mass market" level.

The Sony executive said 1983 will be "strong" for VCRs with most manufacturers getting inventories in line. "The bulk of the sales will be in low to basic model machines . . . the high-end will suffer," he mentioned. Approximately "70% to 85% of the business" will be in the \$400 to \$600 range.

The hi-fi Beta machines with "true 80 to 90dB dynamic range" will be "great" sellers, said Adis confidently. He said consumers will be enthralled with special effect movies like *Star Wars* on the new Beta recorders.

Although there may be prototype one-piece VCR camera/recorders at CES, Adis doesn't think true compact video is here yet. "Everybody is still talking about a standard" for the videotape, he noted. RCA's Valencia labeled the integrated cameras "a lot of talk." Panasonic's Hametz said there won't be a one-piece camera on the market next year. "If I was planning for next year, I would not count on it [the one-piece camera] until 1984."

However, JVC has developed what may be termed a "transitional" unit, a lightweight camera/VCR system that uses a compact version of standard half-inch tape. The 2.75-lb. camera has reduced lag and burn as well as improved low-light shooting. It is priced at \$895. The unit couples with the HR-C3U recorder which weighs 4.4 lbs.

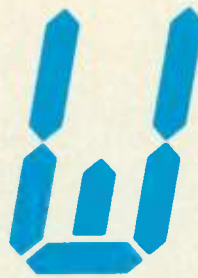
In the projection TV category, Adis thinks there is room for improvement — but not much room in the house. He is looking for "new configurations of projection TV. . . . It's not state of the art" Yet, although the Sony executive did note both the picture itself and the viewing angle have improved. However, people still balk at putting the 'monsters' in their living rooms.

Video experts foresee continued price erosion, particularly in front projection models. These sets are selling for less than half what they were intended to be sold for, according to Henry Kloss, president of Kloss Video and projection TV pioneer.

While Valencia doesn't think component systems will sweep the industry, he said they are a direction for the future although they are currently high-priced.

Kloss agreed the price points are high for component TV. "These can easily add up to \$1,200 to \$2,000. Someone should get something for it more than two pieces," he said. However, the video inventor is glad people are "getting used to \$1,200 to \$2,000 TV."

Valencia said he is encouraged by the "step-up opportunities" offered by component TV in the business. "Clearly there is a perceived consumer advantage. Nobody today is making money on 13-inch or 19-inch product."



**WINDOW DISPLAYS:** Most audio and video retailers have storefront windows for displays, but not all shopowners take proper advantage of their display potentials. The front window is the first physical contact between

store and customer and the display itself, even if fleetingly observed, serves to telegraph an impression of the shop. Naturally, this impression can be for better or for worse.

There are — or should be — two basic types of window displays: walk-by and drive-by. Most urban stores and mall locations use the walk-by variety, while highway or shopping center locations should employ the drive-by type. Unfortunately, many of these latter retailers fail to perceive the difference, instead designing walk-by displays that are useless for drive-by locations.

Walk-by window displays invite the casual passer-by to stop and study. Attractive, timely arrangements of merchandise should be used. Emphasis should be on the newest and nicest, and simple descriptions of product, along with good P.O.P. material, work best. Specific pricing, although traditional, is usually a bad idea. It may stifle a shopper's curiosity by making him think of cost, not value, and invites destructive, price-only competition.

Unusual displays, such as those that demonstrate out-of-the-ordinary products, can be effective. Upside-down turntables and micro components fall into this category. One urban retailer used to provide wordy explanations of policies and personal product experiences on cards, attracting dozens of lunch-hour browsers to loiter and read.

Drive-by locations should avoid using small window displays, or displays that use much print. These retailers only have a moment of the potential shopper's attention to exploit. Large, handsome displays of racked equipment set in spotlights are perfect. Oversized P.O.P.s utilizing light and movement are good, but should be used sparingly to be effective. Rotating posters of product or sale announcements can be used, as in "Demonstrator Sale," or "New Video Cameras." In this case, the less said, the better.

Bad window displays are probably more common in our industry than good. Common mistakes include static displays that are rarely changed and become dirty and boring to passers-by. Remember, many of those shoppers have walked by before — why not give them new reasons to step inside? Even fresh shoppers are quickly turned off by sun-faded sign work and dusty merchandise. Rotate your window display at least monthly, although doing so twice a month or more is better.

Boring displays serve no purpose other than to say "Here's a disc player . . . I have them, too." Remember the sizzle rule. Advertise the latest software releases along with the hardware. Instead of dull, price-only statements, try placing a couple of mouth-watering rack systems out there with sign work stating "Complete audio systems starting at \$399."

Cluttered displays rarely fascinate. They deprive your merchandise of class and water down the impact of individual products. A new turntable is most exciting when given a prominent position on its own, not when plopped atop a mountain of components.

Remember the importance of your window displays.





**XPERTS:** These self-styled technological wizards are a common problem in many audio/video stores. You know the ones; they profess to know more about the merchandise than the sales staff does. Oftentimes they accom-

pany an "ignorant" friend who is looking for equipment. They are difficult at best, and short of shooting them, there is little store personnel can do to deal with them.

**XERCISE** extreme patience. Direct these problem customers into an area where video games are displayed or let them talk to a computer with a voice module.



#### THE YEAR — 1982 AND BE-

**YOND:** In cassette recorders, the self-adjust feature hit some kind of new peak of achievement with the B & O model 9000. While a deck's ability to optimize itself for bias, equalization, and re-

recording sensitivity for various kinds of tapes is not new, thanks to built-in microprocessing, this \$1,800 machine is the first to my knowledge that includes its own measurement of 3rd-order harmonic distortion as a self-guide in the process. Also featured in the B & O recorder is Dolby HX Pro noise reduction (in addition to Dolby B and Dolby C) which helps make lower-priced tapes sound as if they were costlier versions, while the higher-priced tapes begin to approach master-recording status with response to beyond 20 kHz, headrooms in excess of 6 dB signal-to-noise ratios significantly better than 70 dB, wow-and-flutter below 0.04% and so on.

At about half the cost of the famed Nakamichi 1000 in its most recent version, the B & O may well begin to rival it as a new "standard" for cassette performance. Its one major lack, of course, is the fact that it uses a combined record/play head, which means one cannot monitor a tape while it is being recorded. For this function one still must choose a deck with electrically separate record and play heads — of which there are many fine examples.

Speaking of cassettes, don't overlook the appeal of what seems at first glance to be an insignificant item but which I believe has great consumer potential — the storage units for holding cassettes. They're a lot easier to think of along with a cassette deck than disc-storage bins have been for turntables. Cassette storage units are relatively small, attractive and popularly priced.

In FM, the current news concerns the new circuitry for recovering the audio from difficult, noisy broadcast carriers. Whether it's the Schotz or the Carver, it does the job, and for many stereo owners it just could obviate the need for an elaborate antenna. My guess is that several tuners and receivers in the coming year will feature some such circuitry.

In speakers, the new name of the game is dynamic range — not only because that characteristic in itself is desirable for any music reproduction, but also in answer to the demands made by the new spate of "super

records" and in anticipation of the greater demand likely to be made by fully digital recordings. The improvement in dynamic range is a direct result of an apparent across-the-board increase in speaker efficiency or sensitivity, and it is evident in all types of speaker systems, including the air-suspension models that traditionally have been of low efficiency. Even without the demands of digital, a higher-efficiency speaker is desirable if only because it puts less of a "strain" on the driving amplifier, and permits the whole system to operate more within its optimum linear range.

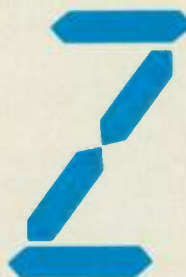
A notable trend in speaker system design is the increase in the number of subwoofer/satellite systems. Freed of the need to attempt to handle the full audio range down to the deep bass, the satellites can be made smaller and more easily tucked into a wide variety of home decor styles. The subwoofer can be placed just about anywhere since the deep bass it reproduces is non-directional. Moreover, many of these systems are offered in convenient step-up manner, which is to say the satellites may be purchased initially for a decent stereo system and then combined later with the subwoofer, at the owner's convenience. This could help a lot of buyers in budgeting for the system.

At last count there were more than 45 brands — some newcomers and some familiar names — offering subwoofers, which is a sizable roster for any product trend in audio.

By now it is apparent that the whole car stereo phenomenon has become an industry within an industry. Car stereo almost sells itself for two good reasons. One, the equipment made today sounds so much better and offers so many more features than did car sound gear of a few years ago. Two, it focuses renewed attention on the car itself, which is an "environment" as dear to many Americans as the home. (The only hitch here is the need for correct installation, which does involve, of course, literally making holes in a car's interior, and linking up the stereo with the car's electrical system. A tie-in with a reliable car-stereo specialist installer might be a good idea unless you can set up your own competent facility for this critical work.

The personalizing of high-quality audio — in the home or in the car — is seen in terms of the many one-brand systems that continue to proliferate. Most of these use "midi" components — smaller than conventional separates but larger than the "mini's" or at least large enough to sport all the controls and features that U.S. buyers want. The nontechnical stereo buyer can appreciate such systems for their total performance and styling, while the spec-minded buyer is bound to be impressed by their technical excellence plus the fact that even most of these can be bought piece-meal, much the same as are conventional components.

—Norman Eisenberg

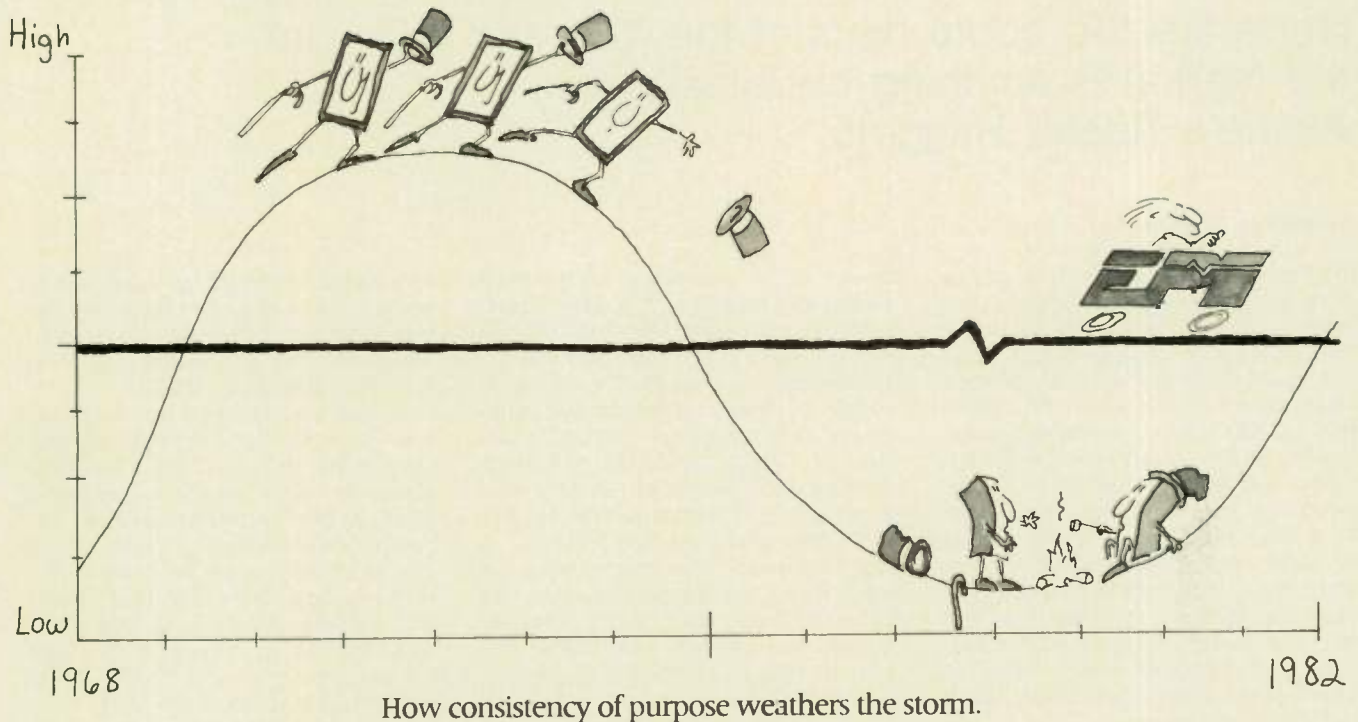


**ZEAL:** To be successful, sales personnel must exhibit enthusiasm for their work and their products. One way to ensure the proper amount of zeal in your people is to reward them properly with money, responsibility,

time off or a combination of these things. Do *not* pay them in zlotys (the basic monetary unit of Poland, whose home electronics market is currently mired in a recession) or zucchini.



# Staying on Linear.



In EPI's 14-year history we have seen a fair number of good times and hard times. As always, when the economy is good everyone does well; and when the economy is rough, only a few do well. We are in hard times now, and the casualty count is growing. When the dust clears we expect there to be 6 to 8 key specialty speaker suppliers left. EPI will be one, for the same reasons we have made it through hard times before.

## VALUE ALWAYS THRIVES; CONSISTENCY ALWAYS SURVIVES.

**VALUE.** At EPI we have always emphasized the contents instead of the package. Our goal has always been the cleanest, purest linear sound possible. Because we have consistently emphasized the contents and consistently received "best buy" ratings, we have a large base of customers who know they can count on excellent quality for a reasonable price.

**CONSISTENCY.** Over a stretch of time that has seen

other hi-fi companies replace its management several times over, we have maintained a consistency of business and marketing philosophy. For instance, we have consistently maintained limited distribution so that our dealers can profitably merchandise their lines. As a result of this and our efficiency in manufacturing, we are able to offer our dealers highly attractive profit margins. It has also given us a financial stability that is greatly envied now by other speaker companies.

## LET LINEAR SOUND SET YOU A TRUE COURSE.

As you are surely seeing, competitive conditions make it necessary that you reduce your speaker line to three, or four at most. This is the way to establish important relationships that will allow you to buy better, improve inventory turnover, and maximize your investment. We have a full line to offer you, and a superb record through thick and thin to reassure you. Call now. There is no time to waste.

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# "A Quiet Recovery Is Happening"

Gone are the boom days of the '60s and '70s, but the market is anything but bleak, says Alpine's Reese Haggott

By Marcia Golden

In the fairy tale about the goose that lays the golden eggs, the farmer, who's impatient at receiving only one golden egg each day, kills the goose to get all her golden eggs at once. But when he opens her up, she's only 'blood and guts' inside, and he's left empty-handed.

The car stereo market is something like the golden goose, in that for a long time it was a golden oasis of audio-related profitability. Hardware manufacturers are somewhat like the farmer, in that they demanded more and more of the category, dumped all their hopes of profitability into it and then were left empty-handed.

When left to its own devices the car audio market (and the goose) produced some spectacular results — especially around the time home audio sales began to decline. Eager to capitalize on the 'golden' windfall, suppliers jumped on bandwagon. They added extensive car-fi lines and aggressive marketing programs. They pushed and pushed and pushed the consumer to buy.

## Not Dead, Just Wounded

It was never enough. More manufacturers brought product to market; an oversupply developed; prices declined and demand slumped. Some suppliers stepped out of the category altogether, and others diversified into other boom markets, such as computers and telephones.

Unlike the goose, though, the car stereo market wasn't dead, just wounded. Talks with various manufacturers indicate that while the market will probably never see the boom days of the '60s and '70s again, a quiet recovery is happening.

Reese Haggott, executive vice president of Alpine Electronics, and Bob Armstrong, manager of marketing services and advertising, shared with *High Fidelity Trade News* their perspectives on what

could be a promising market upswing and on Alpine/Luxman itself.

In general, Haggott feels that the car stereo market has become increasingly hospitable — a welcome relief for many retailers and suppliers who struggled through a period of rapidly declining sales expectations. "According to U.S. Department of Commerce figures, imports per unit have grown 8.5% in the last year," he said. "But we also have to remember that the value of each unit has increased. Dollar volume has risen 12% and part of that is attributed to higher-end sales.

"High-end product is where the demand is, at this point," he continued. "And I'm not just saying that because we're high end. The idea is to give the public what it wants — and if they wanted it packaged in pink boxes, we'd give that to them, too."

"It's been a tough fight out there," agreed Bob Armstrong, speaking of the car stereo market's ups and downs. "But in our short history as a name brand manufacturer, we've had some successes and developed some industry leaders (in product). And, we're hoping to do it again."

## Building A Rapport

How?

"We've been blessed," he replied, "in that most of the dealers we've had have been with us for years. They've had to prove themselves to us, and we did a number of things to prove ourselves to them. One of which is our 'Dealer Council' meeting, which works a lot like the U.S. Senate. Our retailers tell us what they want in car stereo, and what they like, and at what price points, and we will even change our product accordingly."

Alpine's dealer programs also include sales and marketing seminars that are not strictly car-audio oriented. The company works with

its retailers to build up their own internal structures via tax instruction seminars, personnel practices seminars and marketing and merchandising suggestions.

Building a rapport with the dealer and making him or her feel as though the supplier has a personal stake in each retailer's business pays in the current economy. The retailer has certainly become more conservative, Haggott reported. "A lot of people came into the market, but mismanagement forced them out. As we go through the economic recovery, and capitalization eases (money to start new businesses becomes more available), more people will come back into car stereo at the retail level. At the manufacturer level," he added, "the recession caused a lot of people to go into other products as well, like video or games."

## Image of Stability

Currently, Alpine is concentrating on building an image of stability for its dealers at the consumer level. The company plans to run ad campaigns urging consumers to go to car audio specialists rather than shop the discounters.

"We're pedestalling our independent retailers," Armstrong said. "In our print ads, we're trying to tell consumers that they should shop from the people they know will be around to service them tomorrow."

"The ads also urge them to buy from specialists. When a person is throwing a party, he or she goes to the wine store to buy wine and the ice cream parlor to buy ice cream. If you are shopping for quality food and wine, you don't look for it in the local supermarket."

"We're trying to tie that kind of buying philosophy to car stereo," Armstrong said. "Why go to the supermarket or discounter if you're looking for quality when you can go to the car audio specialist instead?"



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# AUDIO/VIDEO SALESMAN



## Perk Post-Holiday Sales

**T**he heavy surge of business that most home entertainment stores see in January is usually a combination of holiday gift money, people seeking post-Christmas bargains and customers who were given components and wish to add to them.

Many a hi-fi gift is a 'starter system' of receiver, speakers and sometimes, turntable. The obvious add-ons to these systems include tape decks, equalizers, head-

phones and audio cabinets. Be sure that you position these add-ons in prominent spots, and emphasize the better models. When people have to shop for gifts for friends, they're often forced to seek bargains to conserve cash. The system's owner, however, is buying furniture for one person — himself. He'll want the glass top model with the roll-out turntable drawer.

The high grade accessory kits,

such as record cleaning packages and maintenance kits for tape decks and VCRs, are perfect add-ons to sales this time of the year. Whenever you deal with a customer shopping for something to put with his new stereo system, be sure to ask him whether the gift included a demagnetizer or a head cleaner. His instruction manuals certainly instruct him to use them. Sell them yourself, instead of letting him pick one up the next time he's in the local record shop.

New tape deck users who are experimenting with the \$1.49 blanks that he uses with his portable recorder needs to be told how important good blank tape is for a deck's performance. Suggest a case of the best, or pick out an assortment of samples for him to evaluate. In almost every case, his deck will be metal-ready. In almost the same number of these cases, the customer does not own nor had he heard a metal tape. You ought to be able to fix him up.

With both home and autosound systems add-on loudspeakers are an excellent suggestion. Bulk pairs of four inch shallow depth car speakers for door or kick panel installation in your car department. Back in the audio room, tag a pair of micro-sized speakers as "Perfect for the bedroom or workshop."

A working VCR camera on a tripod is the proper reminder to recent VCR owners that their deck does more than tape television programs. A large number of these people never even think of the VCR as a replacement for home movies, until they see a system in action.

Home computers will need cassette machines, disk drives, printers and software. Note that many owners of computers may find that hooking them up to their 19-inch portable or console is inconvenient. Show them a compact color set to place on the desk, or demonstrate the enhanced resolution available from your new monitors. Disk and VCR owners, too, may be in the market for the new color TVs. By using their VCR as a tuner, this shopper can upgrade to a monitor, too.





# "P" is for progress!

A new, standardized phono cartridge mounting system has arrived...and it's about time! For decades, the closest we have come to mounting standards for phono cartridges was 1/2" mounting centers, and four separate 0.050" pins to accept the wires at the end of the tone arm. While most cartridges also required a 15mm overhang, and many were about 17mm from the record to the mounting surface, these were just popular dimensions, not standards.

## Installation for Experts Only

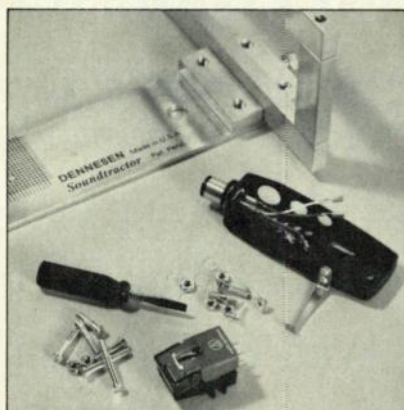
Because the industry couldn't agree on better standards, it's been difficult for users to install, replace, or adjust cartridges. They had to find the instruction manuals for both cartridge and tone arm, have considerable dexterity, and enjoy hunting tiny screws in the carpet.

## Next, the "Universal" Headshell

More recently, the "universal" headshell simplified mounting by allowing the manufacturer or dealer to pre-mount the cartridge, then sell both headshell and cartridge as a single unit. And most tone arms would accept the same universal headshell mounting system. Even so, adjustment was still necessary, and total mass was rather high. But now the linear-tracking turntable is changing everything.

## The Simple, Light P-Mount

Enter the "P-Mount" concept appearing on more and more linear-tracking and now on pivoted-arm turntables. By standardizing the size and location of the electrical terminals, then using them to support the cartridge, direct plug-in with minimum mass is achieved. And with standardized tone arm specs for every turntable, the same cartridge mass, size, and tracking force are correct for every model. While the need for this new system was apparent, no single cartridge manufacturer could bring it about. Hats off to Technics who had the foresight and marketing clout to make the idea work.



## True Plug-In Design

Loosen a retaining screw on any new Technics (and now Hitachi and others) plug-in tone arm and slip out the old cartridge, plug in the new. Consumers can install cartridges with confidence, and with no resetting of tracking force, offset, cartridge height or any of the adjustments common to the old system. Cartridge selling and step-up sales couldn't be easier!

## The Audio-Technica Advantage

While several manufacturers are now making P-Mount cartridges, at Audio-Technica we feel we have an edge on all the rest. For one thing, because we work closely with turntable manufacturers, we got an early start. Our plug-in cartridges were first introduced back in January of 1981. But how we designed these new models gives you a special advantage.

## Our Best-selling Features Intact

If you are already selling A-T cartridges, you'll find an *exact* equivalent in the new Direct Plug-In Series to cartridges you are now selling in our standard line. For instance, the plug-in AT152LP is functionally identical to our famed AT155LC. With all the features you've sold so successfully: Vector-Aligned® design, Para-toroidal coil construction, Radial Damping, square-shank nude-mounted Linear Contact stylus, and all the rest. And the other four models in the Direct Plug-In Series all have their match in our standard models. You offer the same benefits of extended flat response, excellent stereo separation, and superb tracking in either line. With nothing new to learn...or unlearn.

## The Audio-Technica Extra Step

And we have one big advantage not enjoyed by the others. Because we hand-tune *every* stylus assembly during construction, we can match the compliance of each cartridge to the exact requirements of the tone arm far more precisely than anyone else. It's the only way to meet or exceed the design goals of the turntable manufacturer, and our own rigid standards with *every unit* we produce...and *every cartridge you sell*.

## Step-Up Selling Made Easy

Because most linear-tracking turntables are sold with moderate-price P-Mount cartridges (or none at all), every turntable is an opportunity for a *step-up sale*. A sale that is far easier than ever before. And with Audio-Technica the sale is easiest of all. Plug into P-Mount profits today. Your A-T rep has all the details.



*John R. Kelly*

John R. Kelly, President  
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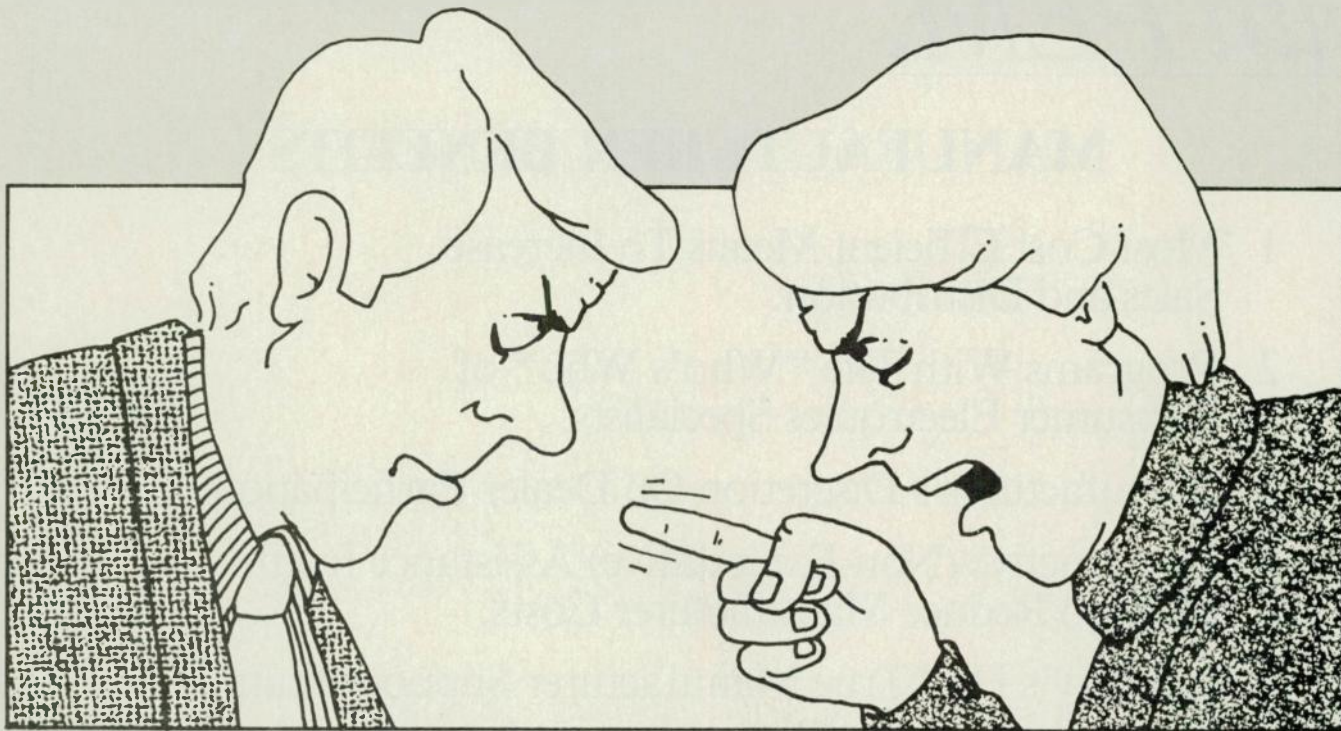
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# AUDIO/VIDEO SALESMAN



## Controlling The Sale

**I**t was unintentional, but the salesman somehow found himself arguing with a customer over the relative merits of some car stereo components. As is the case in all such situations, who lost or won the argument did not matter. The customer left without purchasing anything.

"Why did he argue with me?" wondered the salesman. "I treated him cordially enough, but for some reason he became upset over the equipment that I was trying to show him." The salesman assumed that it must have been some sort of personality conflict. Still, the episode had bothered him enough to talk to his manager about it.

The manager listened patiently to all the details of the sale, up to the part where the customer stormed out of the store. "I see," said the manager. "The problem seems to be that you simply were not in control of the sale."

"Well," answered the salesman, "I think that becoming more aggressive with him would have made matters worse!"

"You don't understand," said the manager. "Controlling the sale doesn't mean bullying the shopper. It means that you are the one who provides a general direction and mood for the sale. You gradually steer your customer towards the right item to suit his desires or solve his problems."

"That's just what I did!" protested the salesman. "I went right to the items that he needed."

"That can't be true," observed the manager. "Because if the customer had thought that you were doing the right thing, then he would not have left. Actually, you've already stated the real problem yourself."

"Did I?"

"Yes. You say that you went 'right to the items' — the classic error of going directly to the presentation without proper qualification. You see, it's impossible to control something without discovering what you need to control, and then selecting the tools needed to do the job."

"First, you have to discover as

much as you can about your customer's needs. Then you've got to take care to relate the product right back to those needs. By doing this properly, you control the important aspect of the sale.

"If you dive into presentations, then you wind up ignoring many of your customer's reasons for buying. He'll have you hopping from one piece to another, asking you to compare 12 products at a time, then asking you why you don't carry the one that he saw down the street. *He* winds up controlling the sale, because *he's the only one who knows what he wants*. You may as well be a clerk in a catalog store, for all that you're able to relate to his needs."

"Next time, be certain to review as much about his reasons for buying, and his likes and dislikes, as you can. Afterwards, *explain exactly why* the product that you're presenting will satisfy him. Only by convincing him thusly can you gain his confidence and have him allow you to control the sale towards its conclusion."



# Are You Ready For A \$77 Infinity Speaker?

If you like pleasant surprises  
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you'll like the surprise party we're giving at the Las Vegas Hilton.

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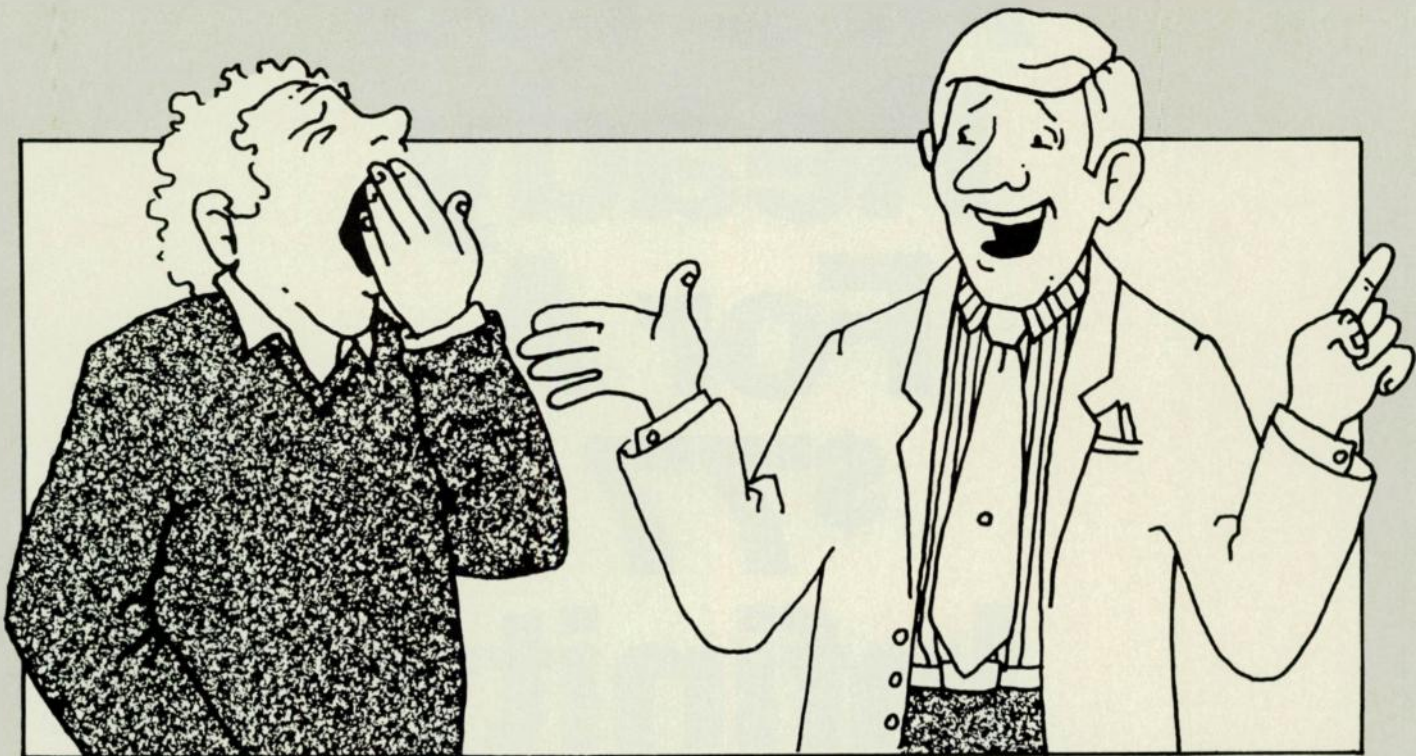
(Otherwise you'll never know what goes on behind closed doors.)



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# AUDIO / VIDEO SALESMAN



## Forming Progress Reports

**W**e are taught that we always should qualify our customers before going to our presentation, and this is true. Yet, our actual sales rarely are divided neatly into qualifications, presentations and closes. We usually have to combine the elements a little, backtracking or jumping ahead sometimes to become effective. Qualification, for example, does not end completely before we present products. In fact, both qualification and presentation must continue until we get actual confirmation of the sale's close.

No matter how well we try to qualify our customers, it's always possible to make an error and show the wrong merchandise. Unfortunately, some salespeople don't discover their error until they've spent three-quarters of an hour pitching their disc player or tuner!

A way to overcome useless presentations of the wrong equipment, and to be certain that you're getting your message across to your customer, is to 'test the water' occa-

sionally as you present. Basically, the salesperson simply stops and asks, "How am I doing?" to the shopper.

For example, imagine that you've just indicated that a certain portable telephone operates on the touch-tone system. You might also have pointed out that the touch-tone system is imperative for most long-distance dialing networks that are becoming popular. Instead of assuming that your customer understands and desires this feature, stop for a second and ask, "That's valuable to have, don't you think?" If the customer responds by agreeing, "Yes, I didn't realize that not all push-button telephones are also touch-tone," then you are that much closer to closing your sale.

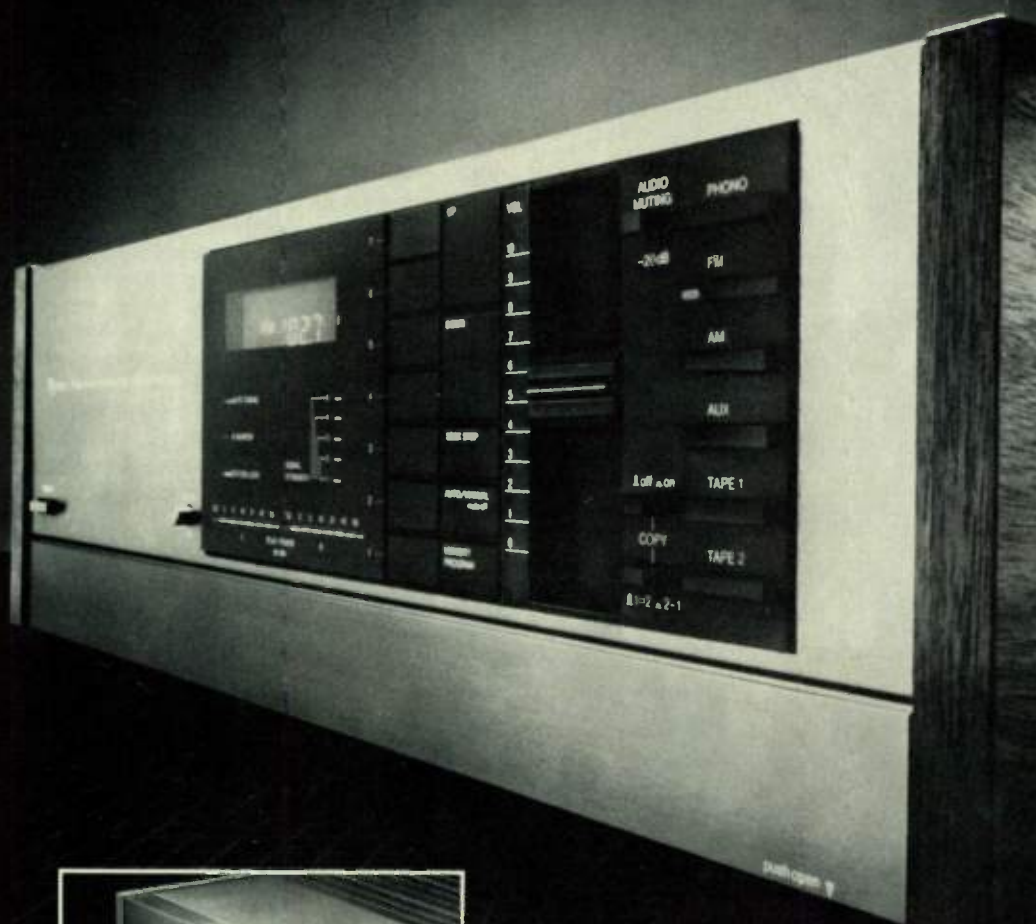
If, on the other hand, your question draws a blank, then you'll have to find out what the problem is. Did he understand the point that you made? Does he use or know about these long-distance networks, or perhaps bank by phone? Did you

forget even to ask whether he has touch-tone dialing available in his area? As you can see, asking these requalifying questions can become very important to the conclusion of your sale.

Sometimes we will make the erroneous assumption that whenever a customer formulates an objection, he will immediately voice it. As we constantly discover, however, nothing could be further from the truth. Often a shopper will think of an objection but not bother stating it because he does not wish to take a contrary position or is so convinced of the objection's validity that he feels it unnecessary to mention it. In his mind, he has come up with a reason why he should not buy the item. You, however, have not learned this. Instead, you'll hear him say later that he'll have to "think it over." Asking questions, to be sure that your customer agrees with the points that you are making, is the only way to overcome these silent objections.



# ONLY ONE AUDIO DEALER IN TWENTY WILL CARRY THE KYOCERA R-851 TUNER/AMPLIFIER WITH MOS FET AMPS.



Our R-851 is only for those dealers whose customers demand the best. Those who want sound that's pure and distinctive... who hear subtleties others miss.

## Demonstrate the silence before you demonstrate the sound.

Switch on the R-851 and let customers switch from one function to another. Let them try Phono. Tape 1. Tape 2. Auxiliary. Back to Phono.

Absolute silence (of course, they'll get sound on AM/FM). Silence is the mark of a great receiver. And great engineering.

## Sound that brings customers closer to the source.

We've turned on the R-851 for some very experienced—even jaded—audio ears, and all we can say is it stops 'em every time. The sound is different. The sense of *being there* is almost overpowering. All this comes from 85 watts per channel of power\* (with dynamic power far above this figure) and some of the most sophisticated circuitry in the business.

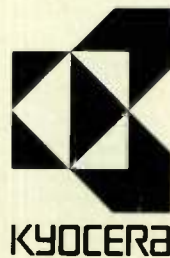
Above all, it uses MOS FET's, the new breed of output transistors, in the amplifier section. They can handle the transients, the power surges, the power requirements of present-day sound (and tomorrow's digital sound) better than bipolar transistors ever could—and give you a sonic purity like no other.

## Fine tuned for every audio need.

From front end to output jacks, the R-851 offers every feature an audio enthusiast might want. The most commonly used controls are right up front—the more esoteric ones are placed behind a neat flip-down front panel. There's microprocessor-controlled quartz-locked tuning with 14 station programmable memory (7 AM & 7 FM); automatic station seek; 3-band parametric-style equalizer; fluorescent display panel; and two-way tape monitoring and dubbing.

Most important, with the R-851 you have a tuner/amplifier that sets you apart from most dealers. A component that will bring in the upscale customers who are willing to invest in the very best. A component that enables you to meet the needs of the most meticulous audiophile.

If you'd like details on the benefits of carrying the Kyocera line, contact: Cybernet International Inc., 7 Powder Horn Drive, Warren, NJ 07060 (201) 560-0060.



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\*85 watts RMS per channel, both channels driven, at 8 Ohms with no more than 0.015% THD from 20-20,000 Hz.



# AUDIO/VIDEO SALESMAN



## Record Care: Seeing Is Believing

**P**eople seem to buy record care kits either when they purchase a new turntable or a cartridge. Otherwise they almost never consider it. Even though cleaners are inexpensive, the I-already-have-one attitude prevents shoppers from considering new ones.

Most hi-fi owners who have owned their record cleaner for several years actually should consider replacing their original cleaner because the devices do not last indefinitely. Plush pick-up bristles can become worn or deformed so that they no longer dig into record grooves properly. People run out of fluid and either do not bother to replace it or cannot find replace-

ments. Cleaning kits, like other components and accessories, constantly are being refined. The \$15 kit that you offer today picks up more dirt and removes more static charge than the model that you sold years ago.

Naturally, kits should be suggested to all hi-fi owners who visit your store. It's not always possible to promote new cleaners effectively, of course, if the shopper believes that his old cleaner is good enough.

A simple and effective way to demonstrate the cleaning abilities of your better kits is to use them in front of your customer on his own

records. Whenever a shopper brings his own discs in to be used for demonstration, give them a good cleaning using a liquid accessory. In most cases, a high quality model will lift out a line of fine grey dust — dust that has been shortening the life of the record and stylus used to play it.

Customers are surprised to find that a seemingly clean disc can contain so much hidden dirt — dirt that their own cleaner is not able to retrieve. Try this demonstration on customers who bring in their records. Whatever else they may buy from you, they'll leave with one of your record cleaning accessories as well.



# THE V-95RX. YOU CAN'T EVEN HEAR ITS BEST FEATURE.



This is the Teac that's quicker than the ear. It features Real Time Reverse. When your cassette comes to its end, a miniature infra-red sensor activates either the independent forward or reverse capstan (as appropriate). Its unique four-channel permalloy record/play head is repositioned. And the tape reverses course. All in an astoundingly swift 0.15 seconds. So quick, the gap is virtually inaudible. In record or play. And you'll never have to flip a cassette again.

Yet this is just one feature of an extraordinary deck which also offers the unusual option of both Dolby NR\* and dbx\*\* noise reduction. Plus Computomatic. So you can program in advance the exact cuts you want. Along with a three-motor transport system. And an optional full-function remote control.

The V-95RX. You won't know if it's coming or going.

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World Radio History



# Inner Workings

Knowing *how* a video camera works may help sell one

By Dawn Gordon

From the moment a person enters the world a chain of natural events takes place. At first, physical growth is the main priority, but soon an infant reaches the speaking stage and a whole new world opens up to him. He wants to know everything from why the sky is blue to who the voice is on the radio. He also wants to know how things work, and very often an unsuspecting parent will come home to find the remains of his telephone scattered about the room in a dismantled mess.

Your customers are much like children; they are curious, they want their questions answered and they aren't as naive as you might think. If a customer asked you how a VCR works, would you be able to give an accurate description? If the answer to that is yes, answer this one: could you explain it in simple terms? Helical scanning may not be your idea of a good time, but your client could benefit from your expertise.

The retailer does have an interesting opportunity here. He can put himself above the competition by knowing the basic operation of various equipment, and at the same time relaying that information to his clients in an easily understandable language. For instance, it's not a good idea to explain binary theory to a person who wants to buy a digital audio disc player. Instead, a retailer might simply explain how a laser reads the information on a disc.

Mark Allan of Video Warehouse in Hallandale, Fla., agrees. "You have to tell the customer what he can relate to," he said. "It's ridiculous to use technical jargon; simple English is sufficient."

It's important for the retailer to establish an easy-going attitude, but at the same time give the impression that he is quite knowledgeable in the particular area being discussed. Jim Coleman, owner of New York's Audio Salon, feels this attitude is essential. "In order to build credibility and to put

the customer totally at ease, he explained, "you must be expert in the conception of why and how the equipment works. This will ultimately benefit the consumer."

Most retailers have a good working knowledge of the equipment they sell, but a more complete understanding of the actual operation can't hurt, either. Because video cameras are becoming increasingly popular, and also because the system in which they work is interesting, this area is a good place to start.

## Video Magic

The imaging tube is where all the magic takes place. This is the heart of the basic camera, and it alone is responsible for manipulating complex light patterns into a language that the other circuitry can understand.

Film-based photography uses a silver-bromide coated base that is light sensitive. When light enters the lens of an average 35mm camera, it strikes the film causing a chemical reaction to take place. The image areas with more light release additional silver bromide, and conversely, areas with little light will release less.

The video camera does this electronically. When light enters the lens, it travels directly to the imaging tube where it strikes a light sensitive plate. In accordance with the photoelectric effect, the plate releases electrons at these points where light strikes its surface. Similar to the release of silver bromide in a film, brightly illuminated areas produce more electrons and darker areas produce proportionately fewer.

The electrons then travel to another plate called the target where they produce a pattern of positive electrical charges equal to the original pattern of light.

An electron gun then scans the target, moving from left to right in narrow horizontal bands. At the end of each band it shifts rapidly back to the left side and moves down a

fraction of an inch to start the next band. When it reaches the bottom right-hand corner it shifts back to the top left and scans a second set of bands between those of the first sequence. This whole scanning process only takes 1/25th of a second, and is repeated continuously.

Where the electrons in the scanning beam fall on an area of the target containing a large positive charge, they are attracted and held. In other areas, a great number of electrons are reflected back to an electron collector. The current flow into the collector is proportional to the charge on the target, and so is the brightness of the original image. This current is then fed to the camera's video pre-amp where synchronized pulses are added. The information can then be sent to a VCR for storage on video tape.

## Armed With Knowledge

Now, how do you describe this process to a customer, and what type of client will want it explained? Basically, your average customer who wants a camera for birthdays and vacations couldn't care less. But a videophile or an amateur filmmaker might very well enjoy the explanation. You don't have to name all the inner parts, but you can give a simple description of the scanning process and compare the electron production to silver bromide film as I did. If you can make a comparison, the explanation will seem simple. After all, if the consumer wanted to take an electronics course he would. But if he can get free information and knowledge from you, his purchase decision will lean in your direction, and the consumer will feel that he is in competent hands. □

*Next month Inner Workings will take a look at the operation of the cathode ray tube, and compare video monitors and conventional television receivers.*



# There's More to Noise Reduction Than Silence.

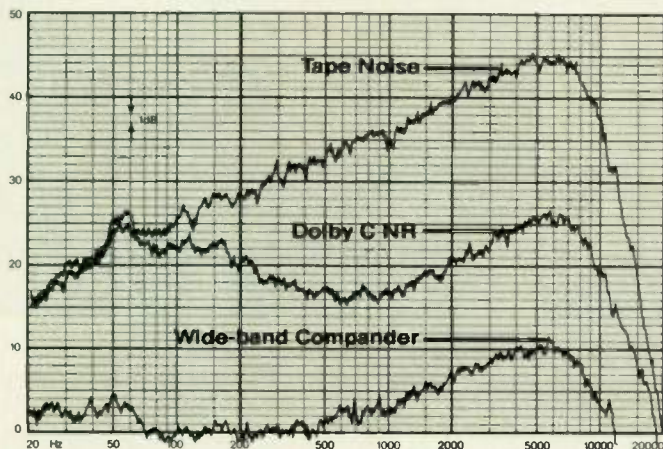


FIGURE 1: NOISE AND NOISE REDUCTION IN THE ABSENCE OF MUSIC.

Noise from biased cassette tape without noise reduction, the effects of Dolby C-type noise reduction, and the effects of a wide-band compander are shown in the *absence* of any signal! Dolby C's noise reduction effect results in an overall perceived noise level below the ambient noise of many listening rooms, even at high playback levels. In the absence of signals, the conventional wide-band compander provides still more electrical noise reduction (but usually no more audible noise reduction).

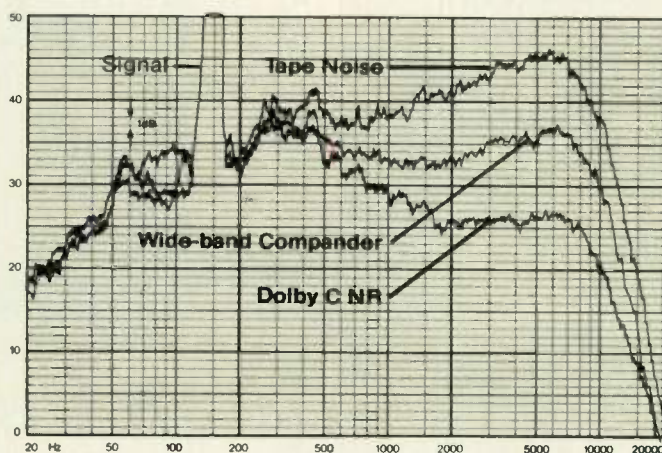


FIGURE 2: NOISE AND NOISE REDUCTION IN THE PRESENCE OF MUSIC.

In the *presence* of a signal (148 Hz, D below middle C on the piano, recorded at Dolby level), in all cases noise in the region of the signal will be masked by it. However, at higher frequencies, especially between 2 kHz and 10 kHz where tape hiss is clearly audible, Dolby noise reduction provides almost as much noise reduction as if the signal weren't there, while the compander allows the noise to increase to a considerably higher level than with Dolby C.

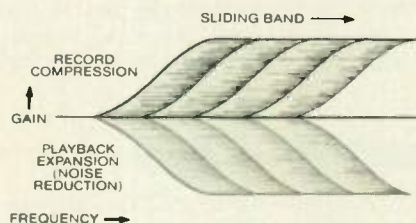


FIGURE 3: THE SLIDING BAND PRINCIPLE.

Dolby noise reduction operates over a band of frequencies which slides up out of the way of the music, resulting in noise reduction just where there is no musical signal to hide the noise. Thus the perceived noise level is consistently low at all times.

Providing noise reduction on silence is not all that difficult. For years, conventional wide-band companders have been available which dramatically reduce noise — between selections on a tape or record.

Yet it is just as important to have noise reduction when there is music playing. While music will mask noise part of the time, there are times when it won't. A bass drum note, for example, cannot hide tape hiss, no matter how loud the drum is: the ear can detect both simultaneously.

Conventional noise reduction systems effect noise reduction at the time of playback by turning down the volume when there is little or no music present. This turns down the noise as well. But they also turn the volume back up again on louder music, and so turn the noise back up at the same time. Thus the bass drum note is accompanied by a burst of tape hiss — hiss which is audible if there is no music at higher frequencies to hide it.

This problem is called noise modulation. It means that with a conventional NR system, the noise level is constantly shifting up and down with changes in the level of the music. But Dolby noise reduction, on the other hand, is free of noise modulation on virtually any type of music (Figures 1 and 2).

Unlike conventional companders, Dolby noise reduction operates over a constantly changing, or sliding band of frequencies (Figure 3). The band extends low enough to provide very effective noise reduction on silence. But in the presence of music, the band slides up just out of the way of the music, so that noise at frequencies above the music is almost as effectively reduced as if the music weren't there.

Both Dolby B-type and Dolby C-type noise reduction are sliding-band systems. With the standard B-type system, noise reduction begins at 500 Hz and increases to 10 dB at 4 kHz and above, while with the new C-type system, noise reduction begins at 100 Hz and increases to 20 dB at 1 kHz and above. With either system, the presence of music does not prevent noise reduction from occurring where it is still needed.

\*70μs equalization, measured with a constant-bandwidth wave analyzer, and weighted (CCIR/ARM) to reflect the ear's sensitivity to noise and noise reduction effects.

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## Loran Offers Tape 'Taste Test'

Loran Premium Audio Cassettes has based a new marketing program the development and distribution of new tape formulations for Loran High Bias II and Loran Normal Bias I cassettes.

The company's primary theme at the Winter CES, as well as the central focus of its new advertising campaign is, "Loran announces the taste test you take with your ears. Test Loran's improved tape formulation against your favorite cassette and see who wins!"

The marketing strategy incorporates new packaging, point-of-purchase displays, window banners, booklets and the in-store promotional event of "Taste Testing," offering the retailer an instant sales tool as well as an attention-grabbing promotion/traffic device. In the Taste Test promotion, Loran offers consumers wine glasses, a wine-tasting book, a corkscrew and a hand-crafted wine rack/cassette holder as premiums with the Loran Taste Test Booklet.

By asking buyers of blank tape to



P.O.P. materials support Loran's "Taste Test" theme

take the Taste Test in their own homes with their own equipment, Loran says it is zeroing in on the key issue for most tape buyers — sound quality. Simultaneously, through a package of point-of-purchase materials, sales are stimulated at a profitable margin with minimal time and effort from the dealer and his sales force. Rob Loran, president of Loran, noted that the reference to wine tasting was an appropriate allusion for the "Taste Test in Sound." "It appeals to the public's intrinsic preference for the very best. At the same time,

it gives consumers a 'fun' activity with a worthwhile purpose. And the Taste Test can be used by aggressive, creative retailers to trigger lifestyle-oriented in-store events designed to stimulate traffic and sales."

The company provides full support to dealers who wish to create an in-store promotion featuring or including the Taste Test.

Loran also is introducing new shrink wrap packaging that uses striking graphics designed to connote an active, outdoorsy lifestyle and bold, gold and silver coloring.



Discwasher's joystick display

## P.O.P. Sales Display Highlights Joystick

Discwasher has introduced a new point-of-purchase display for its PointMaster Competition Joystick.

The red and black display is designed for either counter top display, using one of the shelves, or free-standing display, using four shelves. Each shelf unit holds up to six joysticks and measures 10-by-14¾-by-13½ inches. A 9-inch header atop the display adds to the unit's visibility.

## Contests Support Compact Video Line

More than 1,200 prizes will be won by treasure-hunting consumers in two special nationwide JVC sales promotions that continue through Jan. 31. The program is part of a \$3 million campaign to promote JVC's HR-C3U compact video system. The promotion offers consumers chances to win a grand prize \$5,000 JVC Audio/Video System. Runner-up prizes include 1,200 men's Seiko watches.

JVC has been promoting the Treasure Hunt in a \$500,000 national print advertising campaign. A second event, the Rebus Hunt, is being promoted separately in 12 major markets through a \$500,000-plus budget earmarked for local newspapers in each of the cities involved.

In the national Treasure Hunt contest, entrants must answer each of the clues given with one of 12 cities listed, using images from a four-color illustration as a guide. Each city is used once. The four-color illustrations can be found at JVC compact-video retailers across the country or can be obtained by

writing directly to JVC Co. of America for them.

The Rebus Hunt includes New York, Philadelphia, Boston, Chicago, Minneapolis, San Francisco, Los Angeles, Dallas, Houston, Miami, Washington, D.C., and Baltimore. To participate in the Rebus Hunt, consumers must obtain clues at a JVC compact video retailer. Each city has a different Rebus keyed to the particular city. Each Rebus describes a well known place within the city in question, asking participants for a particular piece of information available at the place described within the city. The information requested is in plain sight at the location.

JVC also is sponsoring a nationwide sweepstakes for JVC retail salesmen designed to support the compact VHS-C video system. Every time a dealer's salesman sells a JVC compact video system he earns the chance to compete in a sweepstakes for prizes to be awarded in his region and for a grand prize awarded nationally.

More than 200 prizes, ranging



from 10-speed bicycles and complete JVC compact video systems to trips to Hawaii or the Virgin Islands, will be awarded in each of four regions. A national grand prize is a new Pontiac Trans Am.

The company is supporting the retailers with a national marketing campaign for its compact video system, including national advertising, a full-scale, point-of-purchase campaign and its Treasure Hunt and Rebus Hunt contest for consumers.

## New Packaging Aims At Impulse Buyers

Retailers should find it easier to appeal to Fuji audio and video cassette consumers with the blister card packages now being offered by Fuji Photo Film USA Inc., the company claims. The new package is designed in a brilliant silver finish to project Fuji's image.

National distribution of the new packaging began last fall after favorable field response during test marketing. Selected audio cas-



Blister cards for video, audio tape

settes are available for "J hook" carded display in single, two-pack and three-pack blister cards. Fuji videocassettes, in both VHS and Beta formats also are available in single-pack blister cards. The company hopes the new blister card packaging will allow retailers to increase product visibility and impulse sales with minimum additional selling space. It also hopes the size of the Fuji blister packages, designed to reduce theft, will be effective.

The graphics on the audio cards are color-coded to correspond with the individual tape formulation. The video cards feature the Fuji green logo. All cards include descriptive information on the back to help consumers to select and get the most out of their Fuji cassettes, as well as UPC coding to facilitate cashing.

The company also says that the new Fuji packages have been designed and tested to withstand a variety of climatic and storage conditions.

## Store's Gold Mine Promotes Audio Line

To country and western music aficionados there may be a gold mine in the sky, but to Alan Finger, president of Fingers Furniture, a six-store appliance, audio and video chain in Houston, there was a gold mine in his store.

This year, as last, Fingers marketed Marantz' Gold Series of audio components with an elaborate in-store promotion stressing fun and fantasy.

According to audio buyer Gary Wermuth, the company, in cooperation with Marantz, transformed one room of the chain's flagship store into a fanciful gold mine.

"The outside door was designed to simulate a huge lock," said Wermuth. "We used low-key lighting to simulate a mine effect and surrounded the room with glittering gold rocks complete with pick axes sticking out of the top. The entire Marantz audio line was placed atop the rocks with spotlights from above, as if sunlight was shining on the gold components."

The two-week long promotion was accented by two models dressed in gold Marantz jump suits handing out registration forms for a

\$5,000 Marantz equipment sweepstakes. A clown gave free balloons to the crowd while Fingers offered free T-shirts and bottles of champagne, complete with gold-flecked bases, to those customers purchasing any Marantz gold labeled components.

A series of newspaper and radio spots accompanied the promotion, which, in Wermuth's eye, "was the most successful event we ever staged for a single product line."

## Wire Package Serves As P.O.S. Display

Monster Cable has grappled with the challenge of catching the eye of the customer, delivering the product and handing over the spec sheet when the salesman is busy elsewhere. The company, which recently introduced Hot Wires, speaker wires for autosound systems, has answered the challenge with a multi-function package that also serves as a point-of-sale display and a colorful, two-sided insert listing key features and benefits.

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## Consistency Yields Success For Speaker Maker

While the past fiscal year saw some speaker manufacturers and independent companies going out of business and other major manufacturers either acquiring new divisions, being acquired themselves or branching out into product areas as diverse as personal stereo, it also saw specialist manufacturers of hi-fi accessories bringing loudspeakers to market.

Clearly, the market has created difficult challenges for independent speaker companies that wish to stay in business. Each company must decide whether to diversify or stick to the straight-and-narrow.

"Problems of scale, of distribution and consistency of focus may not be unique to the consumer electronics industry, but companies that fail to consider them are courting disaster," warned George Samuels, president of Genesis Physics Corp.

U.S. business for Genesis increased 15% during the past year, and Samuels, confident about the strategies the company has chosen, discussed several questions independent loudspeaker companies are being forced to consider in order to succeed in today's audio market.

### Sizing Up Distribution

First is corporate size. "A company must operate with a volume of business that is large enough to support a credible national operation," he said. "But at the same time, the business must be small enough to prosper with limited distribution."

He advised that for small- to medium-sized independent companies, limited distribution is best, although this approach does require "the finesse and head for heights exhibited by the best high-wire act at the circus."

A company must be stable with a steady supply of attractive products to attract the retailers it wants but should avoid growing too big for its distribution structure. Samuels explained, "Increasing distribution can yield short term benefits, yet, ultimately, it erodes prices and has retailers looking elsewhere for a new line to sell."

Successful independent speaker manufacturers also must limit their distribution networks to good, suc-



"Increasing distribution can yield short term benefits, yet, ultimately, it erodes prices and has retailers looking elsewhere for a new line to sell."

*George Samuels*

cessful retailers. Of course, Samuels said, every speaker manufacturer is competing for the best of the retailers. "And because we are competing with the same four or five companies, we can only conclude that, in the end, the number of speaker companies that will survive is in direct proportion to the number of good American dealers."

At the same time, retailers want to handle only those products that every other retailer wants to have, and each wants to be the only retailer in his area to handle the best products. "Therefore," the Genesis president explained, "a speaker company must be strong enough to appeal to every retailer and yet be efficient enough to be profitable supplying only one."

Between this rock and hard place, some small audiophile companies have withered away, while other large companies could not break even without three or four retailers in each market.

### 'Consistency of Focus'

Samuels attributes Genesis' success to a rigidly applied policy he calls "consistency of focus" in both product development and marketing.

"Genesis limits its dealership to the most desirable retailer in any given market," he said. "It wasn't an easy road to take, and in many cases it meant we didn't even enter a market until we got the right dealer." In some markets, Genesis still has not found the retailer it

wants, so it has not entered the market. But Samuels said he believes that is one of the main reasons the company has been successful. "We will not alter this policy," he said.

Concurrent with looking at distribution patterns realistically, Genesis, Samuels claimed, has worked to develop a relationship of trust with its dealers. "We give them consistent product with excellent specs and reviews," he said. "They can make money with our products. We do not change lines or models simply for the sake of having something new."

He said the company deliberately limited its product lines to the most successful and best selling speakers in the mid-price range. It currently offers only four loudspeakers and three in-car speakers. "It was a difficult decision to discontinue our state-of-the-art speakers, but they were expensive, and our marketing policy is to deliver the models that people want to buy from us."

He added that by revising production line methods and installing computers, Genesis now is in a position to deliver its specialized product line more efficiently.

Samuels concluded that independent loudspeaker companies can make a place for themselves in today's market, although choices that often can be painful must be made. The successful companies will be the ones that face the facts and stick to the course those facts dictate.



# Retailer Banks On Customer Service Programs

Charles O'Meara, owner of Absolute Sound in Winter Park, Fla., is one dealer who's convinced that good service is vital to his business. In fact, hearing him talk about his service policy conjures up images of the old-fashioned family doctor: someone who carefully takes into account all aspects of his patients' health and is only too happy to go out of his way should an emergency arise.

"It seems to me a lot of people talk about service, and agree it is necessary, but few have a good idea of just what it means," he said. "We offer our customers a turnkey operation on hi-fi; if something goes wrong, we take care of it. The bottom line is that hi-fi is an expensive, luxury item, and I want to do everything in my power to make sure my customers are happy."

He told HIGH FIDELITY TRADE NEWS that a customer's happiness means good word-of-mouth advertising, pointing out that even though Absolute Sound opened its doors only a year and a half ago, close to 70% of his sales are due to word-of-mouth. To assure good word-of-mouth, the store sends follow-up notices to first-time visitors and "Thank You" notes to purchasers. Absolute Sound also covers all its electronics with a five-year protection plan (after the first two years, labor is charged at regular rates). To maintain customer satisfaction, the store "fine-tunes" all equipment it sells, since "the shipping process is bound to alter the performance."

All equipment repair is done in the store's own service and engineering lab, where the store's service engineer also modifies and builds components.

## High Profile

Finally, the store's free pick-up and delivery and customer installation all tie in with the store's quick service policy, but it is custom installation that "really makes us unique" in an upscale resort town like Winter Park. Absolute Sound is "heavily entrenched" with the local members of the American Society of Interior Decorators (ASID) — Absolute Sound does the sound and video system for the ASID's yearly decoration project that is open to the public — which garners the store additional publicity and business.

"Our installation man is especially creative in setups," he said.

"We work with architects so that they angle walls for proper speaker dispersion. We can hide speakers by clever room design."

Another store "special" is its unpublished consumer "Hot Line," a 24-hour number that is given only to buying customers. "We leap to that phone," he quipped.

O'Meara also publishes a quarterly newsletter that typically announces clinics and appropriate

specials. He also advertises in print and broadcast media and promotes through area concerts. Advertising represents 7 to 8% of total yearly sales — estimated at three-quarters of a million dollars in 1982.

One of his most popular lines is McIntosh, joined on the showroom floor by other brands such as Mag-naplanar, Luxman, Celestion, Boston Acoustics, NAD, Carver and Denon.

## Kraco Video Tapes Train Retailers

Kraco Enterprises has introduced a sophisticated videotape training program as an added dimension to its retailer support program, president Larry Kraines announced.

Installation training tapes show store personnel how to remove a factory radio, mount a Kraco stereo, measure for speakers and install speakers and wiring. The tapes are used as a refresher course for those retailers who have attended the Kraco "hands-on" installation training clinic, as well as for those personnel who have had

no installation experience. These tapes are updated periodically to keep current with new products and techniques.

Kraco sales training tapes and slides are custom-made for each retailer, with some taping done in-store to duplicate the actual sales environment and procedures. With voice-over instruction, the tapes demonstrate the various Kraco autosound products, operation of the Kraco display/demonstration unit and how to build customer interest into a sale.

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# Curtain's Up On The WCES

Here's a look at some of the products that will be introduced at the Winter Consumer Electronics Show.

## Sanyo's Video/Audio Line-Up

Sanyo's WCES product introductions focus on two new video cassette recorders, one priced less than \$600 and one priced less than \$400. The Betacord VCR 6300 is Sanyo's first front-loading VCR. It features 13-function infra-red wireless remote control, 10-key frequency synthesized tuning, 105 channel capability, two-speed operation, Betascan visual picture search, instant freeze frame and a seven-day/single event programmable timer. Suggested retail is \$599.95.



*Betacord VCR 6300*

The Betacord VCR 3900 includes Betascan high-speed search, instant freeze frame and a compact design. At a suggested retail price of \$399.95, the 3900 offers three-day/single event programmable timer, two-speed operation, four-motor, quartz locked tape drive mechanism, feather-touch controls and advanced "noise" canceling circuitry.

Sanyo's audio team is debuting four systems of pre-matched audio components, complete with cabinet and matching speakers. The System 250 D includes a JA300 integrated stereo amplified with 20 watts per channel power output, JT300 AM/FM stereo tuner, RD300 cassette deck featuring Sanyo's automatic music select system, TPX1CN semi-automatic belt drive turntable, SS250 speaker systems and the AF400 cabinet. It retails for \$499.95.

The System 350 D includes JA400 amplifier with 30 watts per channel, the JT300 tuner, RD400 cassette

*SYS350 D Audio System*



deck, TPB2CN turntable with semi-automatic design and straight, low-mass tubular tone arm, SS350 speaker systems and the AF400 cabinet. It retails for \$599.95.

The System 360 D includes the JA300 amplifier, JT300 tuner, RDW310 dual-well cassette deck featuring high-speed tape dubbing, the SS250 speaker systems TPX1CN turntable and AF400 cabinet. It also sells for \$599.95.

The System 370 D includes the JA400 amplifier, JT400 frequency synthesizer tuner, RD400 cassette deck, SS370 speaker systems, TPX3CN fully automatic turntable with stereo magnetic cartridge and the AF410 cabinet. It retails for \$699.95.

New audio components from Sanyo include the budget-priced, semi-automatic belt drive TPB2 turntable with frequency generator servo speed control. It features a straight, tubular low-mass tone arm and lightweight headshell, illuminated stroboscope and top mounted controls and retails for \$99.95.

Sanyo is showing five cassette decks, ranging from the RDS11, featuring Dolby B noise reduction, metal tape compatibility and twin five-stage LED VU meters, priced at

\$89.95, to the RDF70, which offers two DC motors for capstan and reel drive, triple mode digital tape indicator, switchable Dolby B/Dolby C and the automatic music select system and retails for \$199.95.

The company is making a big move into the portable stereo market with two multi-band AM/FM recorders, two portable mini-component systems, six mini-sized "personal portable" recorders, a portable AM/FM double stereo cassette recorder, three AM/FM headphone-style personal stereo radios (one with a built-in arcade-type game) and eight personal stereo cassette players with headphones for its "Sportster" line. Prices range from \$24.95 for the RP50 AM/FM personal stereo headphone radio to \$199.95 for the MW15F mini portable AM/FM double stereo cassette recorder, the M7790 "personal portable" AM/FM cassette recorder and the M9880K multi band/multi voltage AM/FM stereo cassette recorder with five-band graphic equalizer and Dolby B noise reduction.



*M9880K Portable Stereo*

Rounding out Sanyo's 1983 line is a range of car stereo products. They include two under-dash, auto reverse cassette car stereos, eight in-dash AM/FM cassette car stereos (with most models incorporating high-power 9.5 watts per channel amplifiers and auto reverse tape transports) and nine new car stereo speakers.



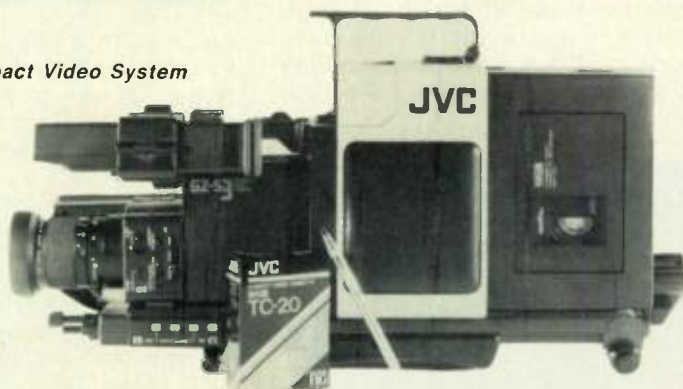
## JVC's Compact Video System

JVC is focusing its efforts on meeting market demand for a lighter, more compact portable video cassette recorder system with its VHS-C line of VCR, camera and accessories. The HR-C3U video cassette recorder uses the newly developed VHS compact video cassette that JVC claims maintains the high picture quality of the VHS system due

to the full compatibility assured by a cassette adapter. The unit weighs 4.4 pounds without battery pack and records for a maximum of 20 minutes. It accepts power from the nickel-cadmium battery packs, household AC or from a car battery.

Other features include automatic backspace editing, power saving switch, remaining time display, two-way shuttle search and full-function remote control.

### JVC VHS-C Compact Video System



Complementing the compact VCR is JVC's GZ-S3U compact video camera. It uses a professional-type 1/2-inch Saticon pickup tube, an exclusive front bias light system, automatic beam control circuit and f/1.2 lens to reduce image lag and allow available-light recording in light as low as 30 lux. Power for the recorder can be switched on or off from the camera. Other features include a 6X power zoom lens with macro setting, automatic or manual iris with lock, compact electronic viewfinder and a built-in microphone minijack that accommodates either monaural or stereo microphone. It weighs 2.75 pounds.

The recorder retails for \$850; the camera retails for \$895.

Rounding out JVC's compact video system is a variety of accessories. They include the SF-P3U shoulder frame that combines the camera and recorder in a single piece assembly for on-the-shoulder operation and sells for \$150; the SS-P3U shooting strap designed so the user can carry the camera and be ready to shoot at any time, selling for \$18; the RM-P4U remote control unit that controls camera start, stop and zoom and the re-

color-coded function buttons with micro-processor based, fully electronic logic control. It features 10-day/1-event programmability, shuttle search and a four-head system for standard and extended play recording.

## JBL Expands Speaker Line

JBL Inc. plans additions to each of its three consumer loudspeaker lines at the WCES. A new compact bookshelf system, the three-way 8-inch L86, joins the company's high performance L Series; the T425, a new 6 1/2-inch three-way system, adds further dimension to the six-model automotive loudspeaker line; and the two-way 6 1/2-inch J216, three-way 8-inch J320 and three-way 10-inch J325 bookshelf systems replace the current Radiance Series.

Of particular interest to car audio retailers is JBL's improved version of its product demonstration center. With specially designed cutaway panels for each of JBL's front-end car speakers, this display unit allows hook-up with up to five separate electronics systems. The center also accommodates JBL's multi-functional LT-1, which is suitable both for rear deck mounting in automobiles, or for use as a secondary home high fidelity system.

JBL's exhibit will be located in audio demonstration rooms at the Riviera Hotel.

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Yes, dry!

The Discwasher® Video Head Cleaner is the only truly nonabrasive dry head cleaner on the market today.

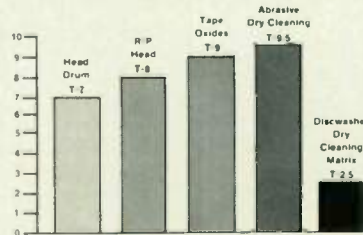
Its superior cleaning action is the result of its textured fabric matrix, not the result of abrasive properties (like those often utilized in aluminum oxide cleaners). This exclusive matrix safely cleans not only the video heads, but the audio and sync heads as well.

The Discwasher Video Head Cleaner is less abrasive than both the video head and video drum. In fact, it's even less abrasive than video tapes themselves.

And best of all...it works. Easily, safely, and quickly.



The graph below represents approximate hardness ratings of individual VCR components and various tapes and cleaners using the Temper scale, developed by industry to measure materials. A diamond, one of the hardest materials known, rates T-10.



**discwasher**

1407 North Providence Road, P.O. Box 6021, Columbia, MO 65205 USA  
A DIVISION OF JENSEN an ESMARK Company

Circle No. 24 on Reader Service Card



## TEAC Offers Professional Cassette Decks

TEAC is introducing its new Z-series of professional cassette decks at the WCES. The company says the line offers better performance, more features and more sophisticated technology than its C-series of decks.

Each of the units uses three noise reduction systems — Dolby B, Dolby C and dbx — making them compatible with cassettes recorded on any other deck. They also feature TEAC's solid die-cast chassis, bias/level/EQ calibration capability

and reference, a real-time digital linear tape counter, TEAC's Com-pu-tomatic Program System that lets the listener select up to 19 program selections automatically, memory repeat/playback/stop, motorized head loading, automatic spacing and fluorescent peak level meters.

The \$1,800 Z-7000 is equipped with fully automatic bias/level/EQ calibration and TEAC's Auto Tape Selector that automatically sets bias and EQ parameters according to the type of tape used. It also fea-

**TEAC Z6000  
Cassette Deck**



tures such computer-automated functions as search to zero, search to cue, search to record and intro check, which plays the first 10 seconds of each selection in sequence, as well as a dbx disc button, spot erase system for editing out program material after it is recorded, automatic fade-in/fade-out, a built-in headphone amplifier with volume adjust, pitch control, power eject and MOL balance controls.

The \$1,400 Z-6000 has three motors, auto tape selector, intro check, pitch control and power eject and is designed for manual bias/level/EQ calibration.

The \$800 Z-5000 is a two-motor deck with manual bias/level/EQ calibration and power assisted eject.

## Profit with Polk Incredible sound at every price



**"Polk Audio is one of the finest suppliers in the Audio Business."**

Wayne Puntel — Audio Craft, Cleveland OH

Polk Audio is one of the industry's most profitable and exclusive lines. Not only are Polk speakers (7 models from \$100-\$850) the best, but Polk Audio as a company to do business with is also very special. If there is no Polk dealer in your area this may be your golden opportunity.

Find out more, call toll free Mr. Sandy Gross, VP of Marketing, 800-638-7276. It could be your most profitable move this year.

Polk Audio, Inc., 1915 Annapolis Rd., Baltimore, MD 21230. 800-638-7276.

**polk audio**  
The Speaker Specialists

## Monster Cable Spotlights Technology

Monster Cable is featuring its new Interlink "Bandwidth Balanced" and Interlink Reference cables, each featuring two multiple gauge litz wire conductors inside a densely braided copper shield, at the WCES. Also being debuted is a new tone arm adaptor enabling utilization of high quality interconnects between the turntable and preamp, a breakthrough that can result in dramatic improvements in system performance at the source.

Bruce Brisson, Monster Cable's director of research and development, plans to conduct a continuing series of technical seminars dedicated to the new "Bandwidth Balanced" cable technology at the firm's suite in the Riviera Hotel. In addition to several audio demonstration rooms at the Riviera, Monster Cable's "Hot Wires" car audio products will be showcased in Booth 2018 on the main floor of the Las Vegas Convention Center, and the Porsche 944 with super high power sound system will be displayed in the parking area adjacent to the Las Vegas Hilton.

Circle No. 25 on Reader Service Card





The world's quietest tape.



# THE SMART MONEY TURNS

VHS or Beta  
Replay or re-record.  
The quality never fades.



# BASF CHROME INTO GOLD.

Turn BASF Chrome into gold with higher profits on every sale! The smart money knows the unique benefit of BASF Chrome sells both video and audio tapes fast. That's turning Chrome into gold.

BASF sweetens the pot even more. Gives you heavy advertising support to the buffs and mass consumers, plus ongoing promotions to accelerate the movement of BASF tapes through your store.

And, right in your market, BASF stands behind you with co-op allowances, POP and premium incentives.

So, do what the smart money does. Feature BASF Chrome video and audio tapes in your store. Turn Chrome into gold.



## BASF

Chrome Audio & Video Tapes

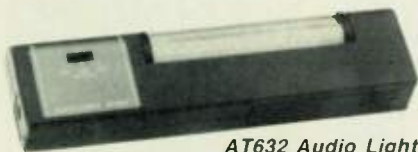
At WCES see us at BASF booth #417.

Circle No. 26 on Reader Service Card



## Audio-Technica Previews Accessories

Among Audio-Technica's WCES product introductions are an audio light, a microphone and a Telarc two-record test set. The AT632 audio light provides fluorescent light for cueing, equipment maintenance or reading record labels and mounts on equipment, an adjacent wall or cabinet or the back or side of a turntable dust cover. When mounted on dust cover, a mercury on-off switch automatically turns the light on when the lid is lifted and off when the lid is closed.



AT632 Audio Light

The AT9200 Electret Condenser Microphone's unidirectional pickup is designed to reduce unwanted ambient sound and permit longer range use. It features extended high frequency response and is compatible with most home tape recorders. A mini phone plug adapter is included. A protective windscreen reduces wind noise and "popping" sound when the microphone is used close up, and a shielded, single conductor cable is attached.



AT9200 Microphone

The Telarc Omnidisc includes recorded materials and instructions to help evaluate, adjust and locate components for optimum performance using only a bubble level and screwdriver.

## More CES Selections

### Cartridges From Signet

Four Signet moving-magnet direct plug-in phono cartridges, which feature the company's Twinflux design with two separate and discrete generating elements, are being debuted at WCES. The TK8LCp has a frequency response range of 5-35,000 Hz and a beryllium cantilever provided with a square shank nude straight line contact stylus. It uses Unicore coils. A step down in the line is the TK6Ep with a tapered tube cantilever, 0.2 by 0.7 mil nude square shank diamond stylus, Unicore coils and frequency range of 10-30,000 Hz. The TK4Ep, with its straight pipe cantilever and 0.3 by 0.7 mil nude diamond stylus, provides 15-28,000 Hz range. The TK2Ep offers 15-25,000 Hz response range. Its straight pipe cantilever is fitted with an 0.4 by 0.7 mil diamond stylus.

### Dynavector Cartridge

The DV10X3 high output moving coil cartridge by Dynavector Systems USA incorporates a shorter cantilever, reduced from 7 mm to 6.5 mm, higher output, resulting



DV10X3 Cartridge

from the 95% silver/5% copper alloy wire used in the precision winding of the coils, and less mass. It also features a Samarium Cobalt Magnet and silver plated, seven stranded stainless steel wire in the suspension systems for "temperature independent" damping. Suggested retail price is \$150.

### Tandberg Amplifier

Tandberg hopes to "bridge the gap" between what it terms "eso-



TIA-3012 Integrated Amplifier

teric equipment" and the majority of "adequate mass market" merchandise on the market with the TIA-3012 Integrated Amplifier. The digital-ready, 100 watt-per-channel unit features "state-of-the-art" components and design and lists for \$995. With a pair of rosewood side panels (optional), the TIA-3012 can be paired with either the TPT-3001 or TPT-3022 tuners.

### Phase Linear CD Player

Phase Linear plans to become the first U.S. company to introduce a compact digital disc player when it unveils the long-awaited technology at the WCES. The programmable Model 9500 offers a full range of functions, including three music location functions. It can be keyed to find specific selections, or particular passages of specially encoded discs or to play a selection for a specific time or repeatedly. Phase Linear expects to begin marketing the 9500 in the spring.

### Spectra Video Computer

Spectra Video Inc. begins delivery in March of the Spectravideo SV-318 personal computer system. The \$299.95 base-priced system will come to market with 14 hardware peripherals and more than 100 software programs to support it. Features include built-in extended Microsoft BASIC interpreter and 80-column CP/M 2.2 and CP/M Plus compatibility, built-in 32K ROM (expandable to 96K) and 32K RAM (expandable to 144K); built-in powerful Z80A CPU; and ergonomic keyboard with 71 keys.

## B & O Aims At Mid-Price Market

Bang & Olufsen is launching an aggressive campaign to gain market share in the mid-price audio market.

In a move one industry insider said would be "a direct attack on Yamaha's market share," B & O could introduce three radial tracking turntables at the Winter Consumer Electronics Show. The tonearms of the new turntables, Beogram 2404 (\$330), 1800 (\$250), and RX (\$195), are compatible with any

of B & O's MMC Series cartridges.

These five cartridges, also slated for a CES debut, are designed to minimize resonance and to facilitate optimum tracking on warped records or digitally mastered or encoded discs. Suggested list prices will range from \$60 to \$445.

The company also is introducing a remote-controlled Master Control System for use with the Beocenter 7700. To use the system, the consumer wires any number of Control

Links and a maximum of five pairs of speakers in various rooms of a house. Through the Master Control, it is possible to activate the 7700's receiver, tape deck or turntable from another room of the house.

A button pressed on the Control Link (an infra-red transmitting and receiving device) conveys a message to the Beocenter to direct music from whatever program source is in operation to the room where music is desired.



# Tune in on a large market of proven consumer electronics customers... in The Ziff-Davis Magazine Network. Efficiently. Effectively. Precisely.

Today, the challenges of marketing consumer electronics equipment in the current electronic boom are enormous. Heightened competition, new product entries and buyer confusion have all impacted on the consumer electronics market. So finding customers who appreciate value and performance in a product is more important than ever for sales.

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The Ziff-Davis Magazine Network delivers more than 9 million of these young, upscale men. Enthusiasts whose lifestyle and commitment to active leisure pursuits make them an elite group of customers.

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For more information on how The Ziff-Davis Magazine Network can help you increase sales, please contact Charles Alexander, Advertising Director (212) 725-7940. He'll put you in touch with 9 million customers.

## The Ziff-Davis Magazine Network

Source: 1982 SMRB

(Gross Audience)

**Examples of how the Ziff-Davis Magazine Network can help you meet your marketing objectives.**

Key:  
BO = Boating  
CD = Car & Driver  
CY = Cycle  
FL = Flying  
PP = Popular Photography  
SK = Skiing



<b>Target: Men Who Own Separate Stereo Components</b> Ranking Criterion: Composition Index Best Ranked 3 & 4 Title Combos (exc. Stereo Review)				<b>Target: Men Who Own Separate Stereo Tuners</b> Ranking Criterion: Composition Index Best Ranked 3 & 4 Title Combos (exc. Stereo Review)			
	Audience (000)	Coverage	Comp Index US 100		Audience (000)	Coverage	Comp Index US 100
ZIFF-DAVIS MAGAZINE NETWORK (Gr.)				ZIFF-DAVIS MAGAZINE NETWORK (Gr.)			
CY/PP/SK	2492	8.9	151	CY/PP/SK	913	11.9	209
CY/PP/SK/FL	3040	10.9	145	CY/PP/SK/FL	1065	13.9	194
COMPETITIVE TITLES				COMPETITIVE TITLES			
Omni	1100	3.9	145	Rolling Stone	393	5.1	168
Penthouse	2761	9.9	126	Omni	304	4.0	146
Rolling Stone	1071	3.8	126	Sports Illustrated	1465	19.2	137
Newsweek	4396	15.7	124	Newsweek	1330	17.4	136
Time	5160	18.5	120	U.S. News	857	11.2	135
Playboy	4541	16.3	118	Time	1576	20.6	134
U.S. News	2704	9.7	117	Penthouse	771	10.1	128
Money	1013	3.6	117	Playboy	1308	17.1	124
Sport	1041	3.7	109	Sport	282	3.7	108
Sports Illustrated	4242	15.2	109	Money	254	3.3	107
Esquire	646	2.3	80	Esquire	130*	1.7	59
TOTAL U.S.	27,934	100.0	100	TOTAL U.S.	7,650	100.0	100
<b>Target: Men Who Own A Cassette Deck</b> Ranking Criterion: Composition Index Best Ranked 3 & 4 Title Combos (exc. Stereo Review)				<b>Target: Men Who Own Stereo Headphones</b> Ranking Criterion: Composition Index Best Ranked 3 & 4 Title Combos (exc. Stereo Review)			
	Audience (000)	Coverage	Comp Index US 100		Audience (000)	Coverage	Comp Index US 100
ZIFF-DAVIS MAGAZINE NETWORK (Gr.)				ZIFF-DAVIS MAGAZINE NETWORK (Gr.)			
CD/FL/SK	886	11.2	194	BO/CY/SK	1016	9.2	202
CD/FL/SK/CY	1105	14.0	182	BO/CY/SK/FL	1330	12.0	196
COMPETITIVE TITLES				COMPETITIVE TITLES			
Omni	455	5.8	212	Omni	568	5.1	189
Money	391	4.9	160	Time	2368	21.4	140
Rolling Stone	364	4.6	151	Newsweek	1853	16.7	132
Penthouse	856	10.8	139	Penthouse	1100	9.9	127
Time	1632	20.6	135	Playboy	1927	17.4	127
Newsweek	1341	17.0	133	U.S. News	1138	10.3	125
U.S. News	822	10.4	127	Sports Illustrated	1802	16.3	117
Playboy	1363	17.2	126	Rolling Stone	391	3.5	116
Sports Illustrated	1294	16.4	118	Money	387	3.5	113
Esquire	174	2.2	77	Esquire	265	2.4	84
Sport	160*	2.0	59	Sport	248	2.2	66
TOTAL U.S.	7,909	100.0	100	TOTAL U.S.	11,074	100.0	100

\*Projection relatively unstable—use with caution Composition Index based on: TOTAL MEN (Net) Source: 1981 SMRB

NOTE: Stereo Review Magazine not included in this analysis in order to illustrate the unbiased strengths of the other network titles.

Circle No. 27 on Reader Service Card  
World Radio History



## WAVEMAKERS



Yamada



Byrne



Armstrong



Harper



Crain



Nestor

**Shoichi Yamada** has been appointed executive vice president of the home audio division of **Pioneer Electronics (USA) Inc.** Yamada serves as a liaison between Pioneer Electronic of Japan and Pioneer Electronics (USA) Inc., monitoring advances in the home audio market. He has been with Pioneer for 18 years, most recently as general manager/North America Sales Department with the parent company in Tokyo. He started his Pioneer career in Japan as regional sales supervisor of domestic sales, moving into product planning with the international division before being promoted to an administrative position in sales-coordination. Pioneer also has appointed **Chris Byrne** vice president/marketing for the home audio division. Byrne has been with Pioneer since April 1982, serving as brand manager for home audio. Previously he was a merchandising manager for Pacific Stereo and has worked in the home audio industry for the past seven years.

**Robert G. Armstrong** has been named marketing services manager for **Alpine Electronics of America**. He is responsible for all marketing services, advertising, sales support and public relations for Alpine Car Audio Systems and Luxman Hi-Fidelity component brands. Armstrong has been merchandising manager for Alpine of America for the past year and continues to serve as Alpine/Luxman representative in the Electronic Industries Association. Prior to joining Alpine, Armstrong had 16 years experience in advertising and sales with the Lane Publishing Co. He replaces George Savage who left Alpine to pursue other interests.

**Keith Urban** has been promoted to product manager at **Jensen Car Audio**. Urban is concentrating his efforts in the car speaker market, working with Jensen's retailers and salespeople to keep the company

advised of changing needs in the marketplace and devising programs to meet those needs. Most recently Urban was engineering services manager for the company. He began his career with Jensen nine years ago as a draftsman and held the position of manager of the design and drafting department for five years.

**Charles "Chuck" Harper** has been appointed national sales manager for **Sherwood**. A 25-year industry veteran, Harper was instrumental in turn-around situations at KLH and Harmon Kardon and also served as vice president/sales for Altec Lansing. He said his first priority is to get the company ready for 22 product introductions at the January CES. Sherwood also has appointed **Mel Graham** national credit manager and **Dan Brostoff** national service manager. Graham spent 14 years at Altec Lansing, serving in a similar capacity as his Sherwood position. Brostoff is in charge of quality control, quality assurance, warranty policy, service and parts. He comes to Sherwood after four years with U.S. Pioneer.

**Paul Crain** has been appointed sales manager for **Yamaha Electronics Corp.'s** Western Region. Crain works in a management capacity with representative firms and with dealers. Prior to his appointment at Yamaha, Crain was national sales manager for Sherwood and also served as Western Region sales manager for the Optonica hi-fi division of Sharp Electronics. Crain is based at Yamaha's Buena Park, Calif., headquarters.

**Ron Emery** has been named Western regional sales manager for **Sampo Corp. of America**. Emery is responsible for all sales and marketing activities in Texas, Oklahoma, Montana and everything west of those states. Emery previously was a Sampo rep with the firm of J. Vahl Associates. Emery is

headquartered at Sampo's West Coast office in Huntington Beach, Calif.

**Richard Sirinsky** has been appointed director of sales development for **Ampex Corp.** He now directs activities of the training and teleproduction center and corporate advertising department. Sirinsky formerly was marketing manager for the Ampex Audio-Video Systems Division and has 25 years of experience with Ampex in various sales and management positions.

**Ken Ross** has been promoted to assistant product manager for **CBS/Fox Video**. He now takes an active role in all aspects of marketing and product planning for the company's prerecorded video cassettes and video discs. Ross was promoted from his position as senior sales administrator for CBS/Fox Video in Farmington Hills, Mich. Prior to that he was with The Rainbow Collection in New York.

**Martyn Markowitz** has assumed the position of president of **Video 22 Systems**, a retail chain with stores in Houston and Dallas. He held positions with Polygram Distribution and Peter Pan Industries before joining Video 22 and has more than 13 years of experience in sales, marketing and promotion. Video 22 currently has three locations offering movie rentals and sales, video hardware rental and sales and other video services.

**Ted Nestor** has been appointed national sales manager of **Quasar Co.'s Audio Division**. Nestor formerly was Western regional audio sales manager. He also has industry experience from Panasonic Co.

**Tom McLaughlin** has been named vice president/sales for **Epicure Products Inc.** in Newburyport, Mass. Formerly he was Western regional sales manager.





DeFazio



Pepper

**Bill DeFazio**, controller of the **H. M. Warren Co.**, has been appointed its treasurer and director. The company also has appointed **Steven Markel** head of franchise sales for U.S. Stereo and Video Centers, headquartered in Denver. Markel also participates in the company's

public relations campaigns. Previously Markel was a manufacturer's rep for B & B Electronics in the Rocky Mountain area.

**John B. Brown** has been added to the sales management team of **Atari's Consumer Division** in the position of vice president/national accounts. Before joining Atari, Brown was national sales manager for Johnson and Johnson's McNeill Consumer Products Division. Atari also has named **W. Lee Henderson** to the new position of vice president/field sales. He is the former vice president of sales for Jovan Inc. and, prior to that, was in sales management positions for Revlon Inc. and Faberge.

**Arthur Christian Booth** has been appointed Midwestern regional sales manager for **Activision Inc.** He formerly was national sales manager for the supermarket division of Western Publishing in Wisconsin. Activision also has added **Lawrence F. Probst III** to its sales management team as Eastern regional sales manager.

**Joel Kochman** has been appointed Eastern region manager for the Consumer Products group of **Swire Magnetics Co.**

**Gail Pepper** has been appointed sales coordinator for **Wald Sound Inc.**, marking a new chapter in the company's growth.

## CALENDAR OF EVENTS

**January 6-9 — 1983 International Winter Consumer Electronics Show**, Las Vegas Hilton, Las Vegas, Nev. With more than 1,000 exhibitors and more than 65,000 attendees, the 1983 Winter CES will feature thousands of the newest consumer electronics products and technologies in video, audio and personal electronics. The show also features 15 hours of "Outlook '83" conferences and workshops. *Contact:* Consumer Electronics Show, Two Illinois Center, Suite 1607, 233 N. Michigan Ave., Chicago, Ill. 60601.

**January 9-12 — Retail Directions: National Retailers Business and Equipment Exposition**, New York Hilton Hotel and Sheraton Centre Hotel Exhibition Hall, New York, N.Y. Conducted by the NRMA in conjunction with its 72nd Annual Convention, the exposition will emphasize the impact of new technologies and marketing procedures on retailers. *Contact:* Dan Soskin, NRMA Enterprises, 100 W. 31st St., New York, N.Y. 10001.

**January 24-26 — LPTV Programming Festival**, LPTV West, Disneyland Hotel, Anaheim, Calif. The Festival will respond to the boom in the low power television industry by allowing attendees to view programming options and by putting lptv professionals directly in touch with distributors, independent producers and syndicators. *Contact:* Frank Camoro, 203 852-0500.

**February 11-13 — Hi Fi Stereo & Video Show**, Washington Convention Center, Washington, D.C. Te-

resa Rogers has renamed her Washington, D.C., consumer show for 1983 to reflect trends in the industry during recent years. The Rogers hi-fi show, first presented in March 1954, will encourage manufacturer and dealer participation with emphasis on direct sales. *Contact:* High Fidelity Music Show Inc., P.O. Box 67, New Hope, Va. 24469.

**March 6-9 — 13th Annual International Tape/Disc Association Seminar**, Diplomat Hotel, Hollywood, Fla. *Contact:* International Tape/Disc Association, 10 Columbus Circle, Suite 2270 New York, N.Y. 10019.

**March 11-13 — 1983 Houston Hi Fi Stereo & Video Show**, Houston Convention Center. A similar format to the Rogers' Washington, D.C., show in February, the Houston consumer hi-fi show is the first for the organization in that city. *Contact:* High Fidelity Music Show Inc., P.O. Box 67, New Hope, Va. 24469.

**March 11-17 — Electronic Representatives Association 24th Annual Management Conference**, Cancun, Mexico. This year's program has been expanded to allow for an additional full day of educational programming featuring participants from UCLA's Graduate School of Business & Executive Development Center as well as expanded specialty seminars. *Contact:* Electronic Representatives Association, 20 E. Huron St., Chicago 60611. (312) 649-1333.

**March 16-20 — International Exhibition for TV + Videotech, Hi-Fi,**

**CE, Music**, Abu Dhabi, United Arab Emirates. Produced by Gulf Expo 2000, a cooperation of AMK Berlin and GAME, Abu Dhabi. *Contact:* AMK Berlin, company for Exhibitions, Fairs and Congresses Ltd., Messedamm 22, D-1000 Berlin 19, Federal Republic of Germany.

**April 16-19 — Professional Audio Retailers Association Jamaica Conference: Strategies for a Changing Market**, Sheraton Ocho Rios, Mallard Beach, Jamaica. Topics include The Image and Market Positioning of the Audio Specialist, Retailing Strategies for the '80s, a human resources seminar with a guest speaker and a conclusion to PARA's service discussion begun two years ago at the first conference. *Contact:* Professional Audio Retailers Association, 9140 Ward Parkway, Suite 200, Kansas City, Mo. 64114.

**June 5-8 — 1983 Summer Consumer Electronics Show**, McCormick Place, Chicago. EIA/CEG's second installment for 1983 will include more of the newest consumer electronics products in every category. *Contact:* Consumer Electronics Show, Two Illinois Center, Suite 1607, 233 N. Michigan Ave., Chicago, Ill. 60601.

**June 9-14 — Sim-Hi-Fi-Ives: International Exhibition of Music, High Fidelity, Video and Consumer Electronics**, Milan Fair Centre, Milan, Italy. The last two days will be reserved for the trade. *Contact:* Segreteria generale: Via Domenichino, 11-20149, Milano. Telex: 313627 GEXPO I.



### Acquisitions

**Harman International Industries Inc.**, parent company of JBL Inc., signed a letter of intent in November to purchase **United Recording Corp.**, parent company of UREI, manufacturer of professional electronic products.

**American Antenna**, a division of American Research & Engineering of Elgin, Ill., has purchased **Audiomobile** of Costa Mesa, Calif., for \$3.9 million. American Antenna said the principal asset at Audiomobile was its recent completion of a new technology in tri-amplified stereo systems that the company expects to have a major impact on the auto stereo market.

### Management Counseling

John A. Hall has established a professional services firm providing management counseling in strategic planning and marketing for consumer electronics and related high technology industries. **John Hall & Co.** is located at 260 Columbia Ave., Fort Lee, N.J. 07024. Hall resigned as vice president/corporate planning of Pioneer North America to begin his new management firm. While at Pioneer, he also served as chairman of Phase Linear Corp., vice president of Pioneer Artists and a member of the office of the president of U.S. Pioneer.

### New Divisions

**Shure Brothers Inc.** has announced formation of Shure Electronics of Illinois, a new division involved in the manufacture, marketing and sales of Shure's communications microphone products, including mobile and base station microphones. The division also is responsible for the manufacture of Shure circuitry products. Company spokesmen say the division was formed to expand service to the commercial and industrial markets. Manufacturing facilities for SEI are at 985 Chaddick Drive in Wheeling, Ill., with sales, marketing and engineering departments at Shure's Evanston, Ill., headquarters. Harvey Amend is SEI's operations manager; Harry Waller is sales/marketing manager for the division.

**Warner Publishing** has established a computer software division and has appointed Albert B. Litewka as its president. With Warner Software

Inc., the company plans to develop and distribute a range of electronic information, education and entertainment for the computerized American home.

### Fiscal Reports

**Zenith Radio Corp.** reported earnings for the third quarter of 1982, which ended Oct. 2, of \$1.9 million, or 10 cents per share, compared with net income of \$6.1 million, or 32 cents per share, in 1981. Net income in the third quarter of 1982 included 9 cents per share resulting from a change in the estimate of 1982 income taxes. A loss of \$4.6 million was recorded for the first nine months of 1982, compared with earnings of \$14.1 million for the same period in 1981.

With current demand for **Commodore** products at an all-time high, company spokesmen reported record sales, net income and earnings per share for the first quarter of fiscal 1983, which ended Sept. 30. Net income was \$14.95 million during the period, compared to \$7.58 million in the first quarter of fiscal 1982. Earnings per share as of Sept. 30 were 97 cents compared to 49 cents as of Sept. 30, 1981.

Although sales in the third quarter of 1982 of electrical and electronic components and consumer electronics products were reduced from the same period in 1981, **North American Philips Corp.** recorded an increase of almost \$15.9 million in overall sales.

Nine month figures showed increases for all products, with the exception of electrical and electronic components. Net gain for the nine months ended Sept. 30 was \$43,833, or \$3.18 per share, compared to \$77,422, or \$5.73 per share, for the first nine months of 1981.

### Facilities

**BSR (USA) Ltd.** has relocated ADC from New Milford, Conn., to BSR's Tetrad ceramic cartridge and industrial product facility in Blauvelt, N.Y. BSR spokesmen say the move gives the company greater control over all phases of ADC's business as both companies implement a new expansion plan. Tetrad has been making most of the tooled parts for ADC products, and the move is expected to result in improved efficiency at ADC.

Operations have begun at the **Matsushita Electric Components Co.** facility in Knoxville, Tenn., according to **Matsushita Electric Corp. of America**. The new facility manufactures speakers and electrolytic capacitors.

**Data Age Inc.** has relocated its Saratoga, Calif., offices to a 24,000-square foot corporate headquarters facility in Campbell, Calif. The new facility houses all corporate, product development, sales and marketing operations and was designed to accommodate the growth expected by the company during the next few years. Data Age manufactures and markets video game software.

The **Du Pont Co.** has begun the second phase of a multi-million dollar expansion and modernization program that ultimately will more than double its capacity to produce chromium dioxide magnetic particles at its Newport, Del., plant. Du Pont manufactures and sells a proprietary form of chromium dioxide for use in audio tape and videotape.

### Reps And Distributors

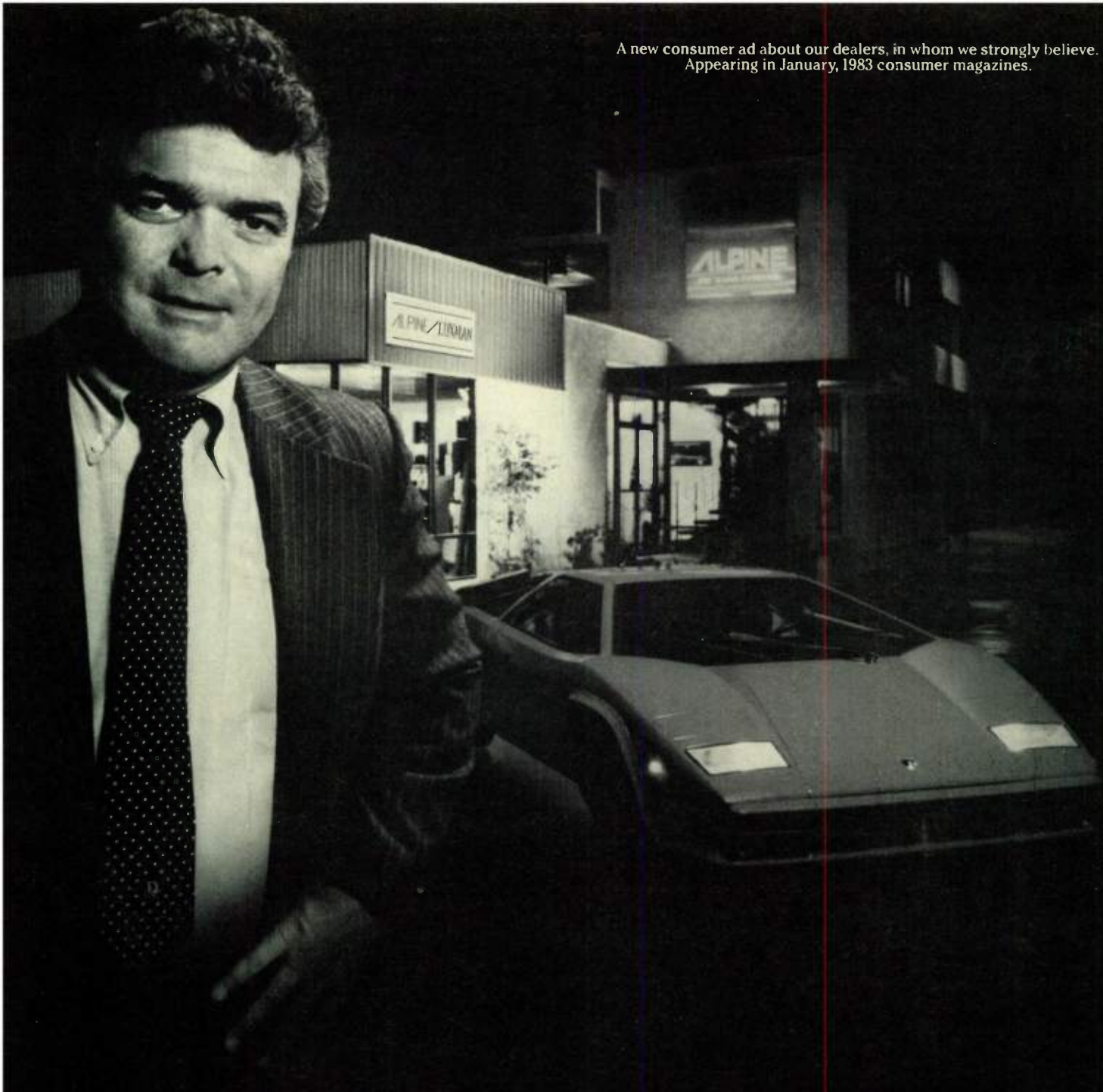
Jack Dreyer and Walter Kelleher have formed **Dreyer-Kelleher Associates Inc.**, a New England-based manufacturers representative organization specializing in audio and video lines. Dreyer is former vice president and general manager of consumer products for CBS/Fox Video, and Kelleher worked most recently as executive vice president of American Home Video, owners of the Video Concepts retail chain. The two have almost 40 years combined experience in the consumer electronics field.

**Shure Brothers Inc.** has appointed **R. M. Associates Ltd.** as regional sales representative for the company's line of phonograph cartridges, microphones and related circuitry products. The rep firm is responsible for sales in Kansas and parts of Nebraska, Illinois, Iowa and Missouri.

**AudioSource**, distributor of audio-ophile and specialty recordings, has entered the electronic game business with a new subsidiary called **Thumb Power**. The subsidiary offers a line of eight hand-held games from Masudaya of Japan, named **Thumb Games**.



A new consumer ad about our dealers, in whom we strongly believe.  
Appearing in January, 1983 consumer magazines.



## "The Butcher, the Baker, the Audio Systems Maker."

Often you read messages from manufacturers who talk only about their products. Yet, in your world of audio listening pleasure, you value an even higher level of understanding. After all, music which soothes, stimulates and entertains is also on a high level of your daily activities.

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Circle No. 28 on Reader Service Card

World Radio History



# Polypropylene Mid-range From Infinity

Seven high fidelity speaker systems, the result of an engineering program lasting more than a year, are being shipped to U.S. retailers by Infinity Systems Inc. All new models utilize polypropylene low frequency drivers and six of the seven models employ EMIT high frequency drivers, a super-high-speed tweeter first developed by Infinity for its state-of-the-art Reference Standard series.

In addition to polypropylene and EMIT tweeters, the models employ a newly designed mid-range dome driver, called the Infinity PolyDome, that for the first time utilizes polypropylene in this type of configuration. The polypropylene membrane is driven around its entire periphery so the voice coil can control the movement of the dome more accurately, resulting in less ripple and break up, factors that greatly reduce time-smear distortion. Mass of the moving element has been lowered substantially, while stiffness is equal to or greater than treated paper or phenolic. The result, the company says, is extraordinary transient response in a spectral segment where it is needed most.

Its designers say the PolyDome produces low distortion and color-

ation plus broad dispersion characteristics that yield dramatic results in achieving the width, depth and height of the sound field.

Another sonic anomaly known as "diffraction distortion" has been reduced in this speaker line, which, according to Infinity, results in cleaner, more expansive sound due to the reduction of out-of-phase dif-



fracted waves that build on the front and sides of the cabinet and cause smearing of the sound and a reduced sound field.

The new line includes the Reference Standard IIIA, which has a frequency response of 35 Hz to 32 kHz,  $\pm 3$  dB, with power capacity of 50 through 200 watts per channel, and retails for \$1,170 per pair.

The RS4 has a frequency response of 40 Hz to 32 kHz,  $\pm 3$  dB, with power capacity of 40 through 150 watts per channel. They retail for \$449 each.

The RS5 has a frequency response of 43 Hz to 32 kHz,  $\pm 3$  dB, with power capacity of 35 through 125 watts per channel, and retails for \$349 each.

The RS6 is the smallest enclosure in the new series. Frequency response is 45 Hz to 32 kHz,  $\pm 3$  dB, with power capacity of 35 through 100 watts per channel. Retail price is \$259 each.

The RS7 has power capacity of 30 to 125 watts per channel and frequency response of 45 Hz to 32 kHz,  $\pm 3$  dB. Retail price is \$199 each.

The RS8 has frequency response to 45 Hz to 32 kHz,  $\pm 3$  dB, and power capacity of 25 through 100 watts per channel. Retail price is \$149 each.

The RS9 has power capacity of 20 through 75 watts per channel, with frequency response of 48 Hz to 22 kHz,  $\pm 3$  dB, and retails for \$98 each. This low-cost model uses a newly designed PolyCell tweeter instead of an EMIT high frequency driver.

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# Pioneer Enters Digital Equipment Market

The P-D1 Compact Disc player, Pioneer Electronics' venture into the world of digital audio, became available in Japan in November. Using the now-familiar laser-scanning technology to play music recorded in digital form on optical discs, the P-D1 reduces harmonic distortion to below 0.006%, which compares to a 1% distortion level produced by phonograph records played with magnetic cartridges. The digital signal is in a 16-bit, linear-encoded format that allows signal-to-noise ratio of more than 90 dB, reducing background noise to an inaudible level. The P-D1 player has random access programmability to allow the play of any cut on the disc in any order and even can locate a specific verse in a song. It features index scan, repeat and pause. The front panel digital display shows the track number and playing time of the selection being played.

Pioneer also has been developing a prototype of an audio tape recorder that uses Pulse Code Modulation digital technology to produce tape recordings of higher quality. Unlike the digital audio disc player, which is a playback only system, the Pioneer model/2814 records onto magnetic tape. Previously, PCM recorders required expensive, special tape, but Pioneer spokesmen explain that innovations in circuitry and development in head technology allow the 2814 to use a small tape, similar in appearance to an ordinary audio compact cassette and similar in substance to the tape used in video recorders.

The signal is recorded on eight parallel tracks at a linear tape speed of 3-3/4 inches per second. The signal is pulse code modulated with 14-bit digital words at a 44.1 kHz sampling rate. Pioneer says frequency response in this still ex-

perimental model is 2 Hz to 20 KHz,  $\pm .5$  dB, and signal-to-noise ratio is 85 dB.

More immediate U.S. product introductions from Pioneer include the CT-9R cassette deck and two front-loading component turntables, the PL-88F and PL-44F.

The CT-9R cassette deck features micro-computer operation, three-motor direct drive, a system that analyzes tapes and automatically matches the electronics and a digital timer that computes remaining tape time.

Pioneer's PL-88F front-loading turntable has a built-in micro-computer that plays up to 14 pre-programmed tracks in any sequence on a maximum of eight cuts and index-scan that uses an infrared sensor to play the first 10 seconds of every track as a sample.

The front-loading, fully automatic PL-44F is the more basic compan-



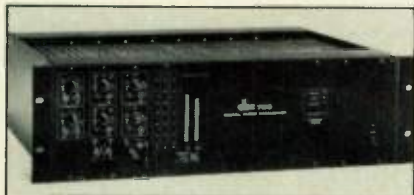
ion to the PL-88F. It uses a DC-servo motor, coupled by a belt drive system to a heavy platter fitted with Pioneer's stable hanging rotor. It has repeat capability, deck syncro and can be operated manually.

Both turntables are strong enough to support 88 pounds of components, or anything else, that might be stacked on top. With the push of one button, the platter assemblies glide in and out for ease in changing records.

*Circle No. 201 on Reader Service Card*

### Low-Cost Digital Processor

dbx Inc. has developed a low-cost digital audio processor for the professional market. Scheduled to sell for less than \$5,000, the Model 700 Digital Audio Processor does not employ the complicated and expensive Linear PCM technology upon which other digital processors are based. Instead, dbx engineers devised a system called companded predictive delta modulation



with two technical innovations that reportedly solve the noise problems associated with delta modulation procedures to date. The linear prediction circuit estimates a signal's future by monitoring its recent past, 700,000 times per second, avoiding audible noise modulation effects and increasing the dynamic range of the basic delta modulator from 55 dB to 70 dB. The precision companding circuit is designed with a direct digital link between encoder and decoder that eliminates mistracking and increases the dynamic range to more than 110 dB with a low noise floor.

*Circle No. 202 on Reader Service Card*

### High-Power Compact

Measuring only 8 by 13 by 10 inches, the MLP-202 speaker from Morel Acoustics provides 150-watt power handling and wideband efficient frequency response of 60-28,000 Hz,  $\pm 3$  dB. It uses a Morel-designed 6-inch woofer with a 3-inch voice coil, the smallest woofer currently available that uses a coil of that size, according to the company. The speaker also incorporates the MDT-28 tweeter, a thick, flat aluminum plate designed by Morel to be more compatible with the other speaker technology. The 28-mm soft-dome tweeter uses

ferro-fluid cooling liquid, contributing to the small speaker's power handling capability. Morel also designed a new crossover, 6 dB per octave, tailored specifically to conform to the response curves of the individual drivers. Suggested retail price is \$395 per pair.

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### Titanium Tone Arm

Music and Sound Imports has begun importing the Alphason HR 100S tone arm. The patented one-piece fabrication of the arm tube is

designed to eliminate resonances and headshell flexibility, providing rigidity in both horizontal and vertical planes with none of the heavy couplings needed with other designs. The tube/headshell is made of titanium, because it acoustically is dead, damps out structural vibration and gives the arm high rigidity with low effective mass. The bearing system is designed with precision ceramic (tungsten carbide) pivots and balls. The hardness of these pivots is measured in the same units as diamonds,

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### Electronics Market Data

A six-volume series of market data from Venture Development Corp. includes facts and forecasts about sales, revenues, consumption, market share, imports, exports, shipments and more for a wide range of electronic products and services. **Venturecasts** is designed to help companies reduce the cost of gathering and analyzing information. Books are available in subject categories of consumer electronics, computer/communications, electronic components, instrumentation, European electronics industry and Asian electronics industry. In addition, several selected sub-categories are available from the 1981 volumes. Volumes are priced at \$595 each, although Venture is providing some samples of the data free.

Circle No. 250 on Reader Service Card

### Compatibility Standards

The International Electrotechnical Commission has published a new world standard for audio-visual, video and television equipment and systems. It states preferred electrical values for the correct interconnection of tape recorders, tuners, amplifiers and loudspeakers in audio-visual systems. It is IEC publication 574-4.

Circle No. 251 on Reader Service Card

### Computer Newsletter

**Views** is a monthly news publication offering timely data and analyses about product and company trends for the personal computer industry. It is written by Dr. Egil Ju-liussen, chairman of the board of Future Computing, and Portia Isaacson, president of Future Computing. Subscriptions are \$325 per year.

Circle No. 253 on Reader Service Card

### Franchise Factbook

A comparison of the features, capital requirements and estimated operating costs of the franchise and affiliate offerings of seven major home video retail organizations is included in the **Video Marketing Franchise Factbook — An Objective Analysis of Franchise, Affiliate and Independent Approaches to Home Video Retailing**. Franchisors Video Connection, Video Station,

Video Cross Roads and National Video and affiliate networks Video Depot, Video Biz and Video Movie Centers are studied. The 100-page report explains the different types of franchise and affiliate operations and details the workings of the individual home video retail networks. The cost is \$197.

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### Video Cassette Catalog

More than 500 rare and unusual film titles have been compiled in a video cassette catalog published by Discount Video Tapes Inc. Among the titles are *The Jungle Book* with Sabu, *The Third Man* with Orson Welles and *The Little Princess* with Shirley Temple. Film enthusiast Woody Wise researched the catalog and found copies of films that some historians believed were no longer in existence. The free catalog is designed for retailers who will special order a tape for a customer.

Circle No. 254 on Reader Service Card

### Radio Tube History

The history of the radio tube, from its invention in 1904 to its gradual eclipse in the 1960s as it was replaced by solid-state devices, is covered in **70 Years of Radio Tubes and Valves — A Guide for Electronic Engineers**. Author John W. Stokes, a student of tubes and valves for many years, discusses developments throughout the Western World, including more than 430 pictures, drawings and early advertisements. Published by The Vestal Press, the book sells for \$21.95 at bookstores or from the publisher.

Circle No. 255 on Reader Service Card

### Mail Order How-To

A 96-page illustrated manual shows retailers how to produce such advertising literature as sales letters, brochures, flyers, catalogs and newsletters quickly, easily and at relatively low cost. **How To Prepare Your Own Mail Order Catalog for Pennies** covers subjects from layout and typing techniques to special effects and reproduction of photographs, as well as tips about mail order, drop-shipping and mailing lists. The cost is \$10.95.

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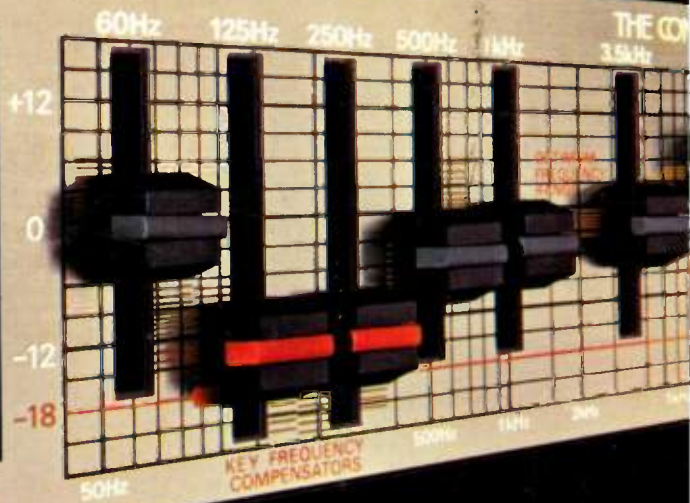
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