

# STEREO 1972 DIRECTORY & BUYING GUIDE

\$1.50





## Now you don't have to go to Paris, Tokyo or London to buy AKAI.

Now you don't have to be a world traveller to buy Akai. Akai is here... with a wide spectrum of superb audio and video recording systems and components. Until now, the world renowned AKAI line was only available abroad — in over 100 countries where millions of Americans purchased AKAI and brought AKAI's fabulous reputation for quality home to the U.S.

### **MOST COMPLETE LINE OF TAPE RECORDERS**

AKAI offers more than 30 different fine-quality tape recorder models with such exclusive features as the incredible glass and crystal ferrite head delivering over 150,000 hours of re-

cord/playback life. It's guaranteed for life!

### **SUPERB STEREO SYSTEMS**

AKAI's advanced sound systems include a brilliant array of AM/FM multiplex stereo receivers, the amazing AA-6100 true 4-channel amplifier, speakers and stereo headphones.

### **1/4-INCH TAPE VTR**

AKAI introduces a remarkable new line of portable audio/video tape recorders with a revolutionary, exclusive, 1/4-inch tape system. A new video tape standard. The least expensive to own and operate.

Let your AKAI dealer show you the superb AKAI line. It's here and out of this world.

# **AKAI**

AKAI America, Ltd./2139 E. Del Amo Blvd., Compton, Calif. 90220 (213) 537-3880

CIRCLE NO. 59 ON READER SERVICE CARD

# our head is our heart



AKAI's exclusive *glass and crystal ferrite head* is the heart of superb AKAI recording equipment—the little part that makes the big difference. We call it the GX head. It is so unique and dependable that AKAI actually guarantees it for *150,000 hours* of superb fidelity play. That's 80 years if you used it 5 hours a day—every day of the year!

The crystal ferrite core of this remarkable head forms a precise focused field that eliminates bias—records and reproduces high frequencies with absolute fidelity.

It's dust-free, oxide-free and wear-free. As a result, there is no degeneration of sound from tape dust or friction. And, the GX head delivers greater frequency

response as a result of its precision gap width and gap depth. *And, it's only available from AKAI.*

The remarkable GX head is just one of the many innovations that have influenced more than 6,000,000 Americans to buy AKAI in over 100 countries abroad. Now the same matchless quality and craftsmanship are here. There are over 30 fabulous AKAI recorders and tape deck models—a sensational spectrum of advanced sound systems—and also the exciting and exclusive line of video tape recorders using AKAI's revolutionary 1/4-inch tape system. See the entire line at your AKAI dealer.

For those who demand the best, AKAI is heads above all others.

**AKAI**

AKAI America, Ltd./2139 E. Del Amo Blvd., Compton, Calif. 90220 (213) 537-3880

# Choosing the wrong cartridge for a record player is like putting low octane gas in a high-performance car.

## Here's how to choose the right cartridge.

Matching stereo cartridges to turntables and record changers is as important as putting the right kind of gas in your car. Low octane gas just won't work in a high performance car. And high octane gas in an economy car is a waste of money. It's the same with cartridges. In fact, a cartridge that's great for one system could be disastrous for another.

So, we've developed a simple way for you to precisely match one of our XV-15 cartridges to whatever kind of record player you have

or plan to buy. It's called the Dynamic Coupling Factor—DCF for short.

DCF is a numerical index, like an octane rating, that our engineers have assigned to the XV-15 cartridges by pre-analyzing all the electrical and mechanical specifications of all major record changers and turntables. The more sophisticated the record player, the higher the DCF number.

But how we devised the DCF rating system isn't as important to you as knowing what it does. Using

our DCF chart to choose your XV-15 makes sure that you get optimum performance when you play your records. And that you can walk into your high fidelity dealer and know just which XV-15 to ask for.

After all, you don't just drive into a gas station and ask the man to "fill 'er up", do you?

 **PICKERING**

*"for those who can hear the difference"*  
101 Sunnyside Blvd.,  
Plainview, N.Y. 11803



### Cut out this handy DCF Guide.

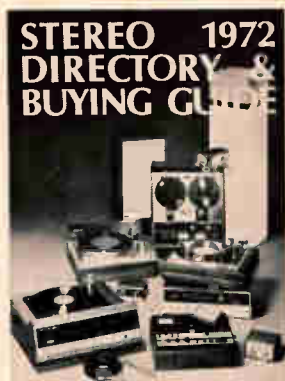
IF YOU OWN	MODEL NUMBER	Use a Pickering XV-15 cartridge with this DCF Number	
		ELLIPTICAL	SPHERICAL
Acoustic Research	XA	750, 400	350
Benjamin Miracord	50H, 750, 770H	750	350
	40H, 40A, 40, 630, 620, 610, 18H, 10, 10F, 10H	400	
Dual (United Audio)	1219, 1209, 1019, 1215, 1015, 1015F	750	350
	1009SK, 1009F, 1009	400	
	1212, 1010A, 1010	200	150
Garrard (British Industries)	SL95B, SL95, SL75B	750, 400	350
	SL75, LAB80MK11, LAB80	400	350
	SL72B, 70MK11, A70, 60MK11, SL65B, SL65, SL55B,	200	150
	SL55, SP20B, SP20, A, AT60, AT6		
	40, 40B, 50MK11, 50, 40MK11, 40Autoslim, Autoslim/P, T11, RC98, 210, 4HF, 301, RC80, RC88	140	100
Lenco	L-75	750, 400	350
McDonald (BSR)	600, 610, 500A	200	150
	510, 500, 400, 310	140	100
Pioneer	PL-30	750	350
	PL-25, PLA-25, PL-41C, PL40F, PL-41A	400	
Perpetuum-Ebner	PE-2018, PE-2038, PE-2020, PE-2040	750, 400	350
Sony	TTS 3000, PS 1800A	750, 400	350
Thorens	TD 125	750	350
	TD 150AB, TD 124	400	

Elliptical styli, because of the way they rest in the record groove, track with less radius distortion, and therefore are capable of playing records in good condition with less overall distortion.

Spherical styli are more rugged and can be used with higher tracking forces.

CIRCLE NO. 41 ON READER SERVICE CARD

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1972 EDITION



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# STEREO 1972 DIRECTORY & BUYING GUIDE

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# FREE...Any 3 Stereo LPs or

## WITH NO OBLIGATION

**66764 ELTON JOHN**  
Tumbleweed Connection  
Uni LP, 8TR, CASS

**66782 BILL COSBY**  
When I Was A Kid  
Uni LP, 8TR, CASS

**68023 WOODSTOCK TWO**  
(2 record set)  
Cotil LP, 8TR, CASS

**68030 CROSBY, STILLS, NASH & YOUNG**  
Four Way Street  
(2 record set)  
Atlan LP, 8TR, CASS

**41213 JESUS CHRIST SUPERSTAR**  
(2 record set)  
Decca LP, 8TR, CASS

**33184 DIONNE WARWICK**  
Very Dionne  
Scept LP, 8TR, CASS

**67517 THREE DOG NIGHT**  
Golden Biscuits  
Dunhi LP, 8TR, CASS

**65797 GABOR SZABO**  
Blowin' Some Old Smoke  
Budda LP, 8TR, CASS

**42780 LED ZEPPELIN**  
III  
Atlan LP, 8TR, CASS

**37833 ROD MCKUEN**  
In The Beginning  
Sunse LP, 8TR

**43871 STATLER BROS**  
Bed of Roses  
Mercu LP, 8TR, CASS

**42988 ROGER WILLIAMS**  
Love Story  
Kapp LP, 8TR, CASS

**75002 JACKSON 5**  
Maybe Tomorrow  
Motow LP, 8TR, CASS

**50506 BUFFY**  
SAINTE-MARIE  
Wanna Be A Ballerina  
Vangu LP, 8TR, CASS

**21597 RIMSKY-KORSAKOV**  
Scheherazade  
Yorks LP, 8TR, CASS

**33093 IAN & SYLVIA**  
Greatest Hits  
(2 record set)  
Vangu LP, 8TR, CASS

**44765 SHIRLEY BASSEY**  
Is Really Something  
UniAr LP, 8TR, CASS

**21551 BEETHOVEN**  
Piano Sonatas  
Yorks LP, 8TR, CASS

**42986 ROGER WILLIAMS**  
Golden Hits  
Vol. II  
Kapp LP, 8TR, CASS

**42665 CROSBY STILLS & NASH**  
Atlan LP, 8TR, CASS

**32882 JOAN BAEZ**  
Joan Baez 5  
Vangu LP, 8TR, CASS

**33182 SUSAN SINGS**  
SESAME STREET SONGS  
Scept LP, 8TR, CASS

**41217 BERT KAEMP-FERT**  
Orange Colored Sky  
Decca LP, 8TR, CASS

**48800 B. B. KING**  
Live At Cook County Jail  
ABC LP, 8TR, CASS

**33099 PDQ BACH**  
Stoned Guest  
Vangu LP, 8TR, CASS

**68019 EMERSON, LAKE & PALMER**  
Cotil LP, 8TR, CASS

**39089 5th DIMENSION**  
Greatest Hits  
SouCi LP, 8TR, CASS

**38368 VENTURES**  
10th Anniversary Album  
(2 record set) Liber LP

**21633 RED ARMY**  
ENSEMBLE  
Yorks LP, 8TR, CASS

**38373 IKE & TINA**  
TURNER Workin'  
Together  
Liber LP, 8TR, CASS

**43870 MELBA MOORE**  
Look What You're Doing  
Mercu LP, 8TR, CASS

**16595 VIRGIL FOX**  
Bach at the Fillmore  
Decca LP, 8TR, CASS

**Compare and see!**

See for yourself why over 1 1/2 million record and tape collectors paid \$5 to join Record Club of America when other record or tape clubs would have accepted them free.

	Citadel Record Club (as adv. in TV Guide Oct. 3, 1970)	Columbia Stereo Tape Cartridge Service (as adv. in Esquire Nov. 1970)	Capital Record Club (as adv. in Look Jan. 26, 1971)	Columbia Record Club (as adv. in Playboy Feb. 1971)	RCA Stereo 8 Tape Club (as adv. in Esquire Oct. 1970)	RECORD CLUB OF AMERICA
CAN YOU CHOOSE FROM ALL LABELS? LPs OR TAPES, INCLUDING CARTRIDGE AND CASSETTE TAPES?	NO	NO	NO	NO	NO	<b>YES!</b> Choose any LP or tape on any label! No exceptions! Over 300 different manufacturers including Capitol, Columbia, RCA, Angel, London, etc.
MUST YOU BUY A "MINIMUM" NUMBER OF RECORDS OR TAPES? HOW MANY?	12	12	12	10	6	<b>NONE!</b> No obligations! No yearly quota! Take as many, as few, or nothing at all if you so decide!
HOW MUCH MUST YOU SPEND TO FULFILL YOUR LEGAL OBLIGATION?	\$59.76 to \$71.75	\$83.76 to \$95.40	\$59.76 to \$71.76	\$49.80 to \$59.80	\$41.70 to \$47.70	<b>ZERO DOLLARS!</b> You don't have to spend a penny—because you're not "legally obligated" to buy even a single record or tape!
CAN YOU BUY ANY RECORD OR TAPE YOU WANT AT A DISCOUNT?	NO	NO	NO	NO	NO	<b>ALWAYS!</b> Your discount up to 79% OFF. Guaranteed never less than a third! No exceptions!
DO YOU EVER RECEIVE UNORDERED RECORDS OR TAPES?	YES	YES	YES	YES	YES	<b>NEVER!</b> There are no cards which you must return. Only the records and tapes you want are sent—and only when you ask us to send them.
HOW LONG MUST YOU WAIT FOR SELECTIONS TO ARRIVE?	5 to 6 weeks	5 to 6 weeks	5 to 6 weeks	5 to 6 weeks	5 to 6 weeks	<b>NO LONG WAITS!</b> Your order processed same day received. No shipping on cycle.

### TYPICAL "EXTRA DISCOUNT" SALE

\$4.98 LPs average as low as \$1.96  
\$5.98 LPs average as low as \$2.25  
\$6.98 LPs average as low as \$2.56

Savings of 63% or more from recent Club sales up to \$4.42 per LP. Start these giant savings now... not after you fulfill your obligation like the other clubs.

	Label	List Price	Average Club Price
Andy Williams—Love Story	Colum	5.98	2.25
Anne Murray	Capit	5.98	2.25
Ed Ames—This Is	RCA	6.98	2.56
2001—A Space Odyssey	MGM	6.98	2.56
Mary Travers—Mary	War Br	4.98	1.96
Creedence Clearwater			
Revival—Pendulum	Fanta	4.98	1.96
Miles Davis—Bitches Brew	Colum	5.98	2.25
Love Story—Soundtrack	Param	5.98	2.25
Perry Como—It's Impossible	RCA	5.98	2.25
Bloodrock—3	Capit	5.98	2.25
Santana—Abraxas	Colum	5.98	2.25
Worst of Jefferson Airplane	RCA	5.98	2.25

**RECORD CLUB OF AMERICA—The World's Largest Record and Tape Club**

# Any 1 Tape Cartridge or Cassette Shown Here Worth up to \$20.94

## TO BUY ANYTHING EVER!

Yes, take your pick of these great hits right now! Choose any 3 Stereo LPs (worth up to \$20.94) or any 1 Stereo Tape (cartridge or cassette, worth up to \$13.96) FREE... as your welcome gift from Record Club of America when you join at the low lifetime membership fee of \$5.00. You can defer your selection of FREE items and choose from an expanded list later if you can't find 3 LPs or 1 Tape here. We make this amazing offer to introduce you to the only record and tape club offering guaranteed discounts of 33 1/3% to 79% on all labels—with no obligation or commitment to buy anything ever. As a member of this one-of-a-kind club you will be able to order any record or tape commercially available, on every label—including all musical preferences. No automatic shipments, no cards to return. We ship only what you order. Moneyback guarantee if not satisfied.



66738 NEIL DIAMOND Tap Root Manuscript Uni LP, 8TR, CASS



65793 BREWER & SHIPLEY Tarkio KamSu LP, 8TR, CASS



38376 CANNED HEAT 'N JOHN LEE HOOKER (2 record set) Liber LP



42784 STEPHEN STILLS Atlan LP, 8TR, CASS



66709 ORSON WELLES Begatting of the President Media LP



65784 MELANIE Leftover Wine Budda LP, 8TR, CASS



21537 TCHAIKOVSKY 1812 Overture Yorks LP, 8TR, CASS



41152 WHO Tommy (2 record set) Decca LP, TR, CASS



33185 JOSEPH & THE AMAZING TECHNICOLOR DREAMCOAT Scept LP, 8TR, CASS



33183 B. J. THOMAS Most of All Scept LP, 8TR, CASS



67519 STEPPENWOLF Gold Ounhi LP, 8TR, CASS



33092 BEST OF BUFFY SAINTE-MARIE (2 record set) Vangu LP, 8TR, CASS



44746 DUKE ELLINGTON 70th Birthday Concert (2 record set) SolSt LP



33179 DIONNE WARWICK I'll Never Fall In Love Again Scept LP, 8TR, CASS

44726 FERRANTE & TEICHER 10th Anniversary Album (2 record set) UniAr LP

28082 GREGORIAN CHANT TREASURY Yorks LP, 8TR, CASS

33134 B. J. THOMAS Greatest Hits Vol. 1 Scept LP, 8TR, CASS

65775 VERY BEST OF LOVIN' SPOONFUL KamSu LP, 8TR, CASS

33065 JOAN BAEZ David's Album Vangu LP, 8TR, CASS

44757 BEST OF GORDON LIGHTFOOT UniAr LP, 8TR, CASS

42911 MAN OF LA MANCHA Original Cast Kapp LP, 8TR, CASS

65796 CAL TJADER Tjader-Ade Budda LP, 8TR, CASS

44753 TRAFFIC John barleycorn Must Die UniAr LP, 8TR, CASS

## NOW YOU CAN CHARGE IT, TOO!

### AT LAST A RECORD AND TAPE CLUB WITH NO "OBLIGATIONS"—ONLY BENEFITS!

Ordinary record and tape clubs make you choose from a few labels—usually their own! They make you buy up to 12 records or tapes a year—usually at list price—to fulfill your obligation. And if you forget to return their monthly card—they send you an item you don't want and a bill for \$4.98, \$5.98, \$6.98, or \$7.98! In effect, you may be charged almost double for your records and tapes.

#### BUT RECORD CLUB OF AMERICA ENDS ALL THAT!

We're the largest all-label record and tape club in the world. Choose any LP or tape (cartridges and cassettes), including new releases. No exceptions! Take as many, or as few, or no selections at all if you so decide. Discounts are GUARANTEED AS HIGH AS 79% OFF! You always save at least 33 1/3%. You get best sellers for as low as 99¢.

#### NO AUTOMATIC SHIPMENTS

With our Club there are no cards which you must return to prevent shipment of unwanted LPs or tapes (which you would have to return at your own expense if you have failed to send written notice not to ship). We send only what you order.

#### HOW CAN WE BREAK ALL RECORD AND TAPE CLUB RULES?

We are the only major record and tape club NOT OWNED... NOT CONTROLLED... NOT SUBSIDIZED by any record or tape manufacturer anywhere. Therefore, we are not obliged by company policy to push any one label. Nor are we prevented by distribution commitments from offering the very newest LP's and tapes.

#### SPECIAL INTRODUCTORY MEMBERSHIP OFFER

Join RECORD CLUB OF AMERICA now and take advantage of this special Introductory Membership Offer. Choose any 3 LPs or any 1 tape shown here (worth up to \$20.94) and mail coupon with check or money order for \$5.00 membership fee (a small handling and mailing fee for your free

LPs or tapes will be sent later. If you can't find 3 LPs or 1 tape here, you can defer your selection and choose from expanded list later. This entitles you to LIFETIME MEMBERSHIP—and you never pay another club fee. Your savings have already more than made up for the nominal membership fee.

#### NOW YOU CAN CHARGE IT

If you prefer, you may charge your membership to one of your credit cards. We honor four different plans. Check your preference and fill-in your account number on the coupon.

#### LOOK WHAT YOU GET

- FREE Lifetime Membership Card — guarantees you brand new LPs and tapes at discounts up to 79%... Never less than 1/2 off.
- FREE Giant Master LP and Tape Catalog—lists all readily available LPs and tapes (cartridges and cassettes) of all labels (including foreign)... all musical categories.
- FREE Disc and Tape Guide — The Club's own Magazine, and special Club sale announcements which regularly bring you news of just-issued new releases and "extra discount" specials.
- FREE ANY 3 Stereo LPs or any 1 Tape shown here (worth up to \$20.94) with absolutely no obligation to buy anything ever!

#### GUARANTEED INSTANT SERVICE

All LPs and tapes ordered by members are shipped same day received (orders from the Master Catalog may take a few days longer). ALL RECORDS AND TAPES GUARANTEED—factory new and completely satisfactory or replacements will be made without question.

#### MONEY BACK GUARANTEE

If you aren't absolutely delighted with our discounts (up to 79%)—return items within 10 days and membership fee will be returned AT ONCE! Join over one and one-half million budget-wise record and tape collectors now.



#### RECORD CLUB OF AMERICA

CLUB HEADQUARTERS  
YORK, PENNSYLVANIA 17405 X782B

Yes—Rush me a lifetime Membership Card, free Giant Master LP & Tape Catalog, and Disc & Tape Guide at this Special Membership Offer. Also send me the 3 FREE LPs or 1 FREE tape which I have indicated below (with a bill for a small mailing and handling charge). I enclose my \$5.00 lifetime membership fee. This entitles me to buy any LPs or tapes at discounts up to 79%, plus a small mailing and handling charge. I am not obligated to buy any records or tapes—no yearly quota. If not completely delighted I may return items above within 10 days for immediate refund of membership fee.

#### 3 FREE LPs

#### or 1 FREE TAPE

8 track  
 cassette  
or  Defer Selection—send expanded list.

Mr. \_\_\_\_\_  
Mrs. \_\_\_\_\_  
Miss \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

All Servicemen write Soc. Sec. # \_\_\_\_\_

CHARGE IT to my credit card. I am charging my \$5.00 membership (mailing and handling fee for each FREE LP and tape selected will be added).

Check one:  Diners Club  Master Charge  
 American Express  BankAmericard

Acct. # \_\_\_\_\_ Expiration Date \_\_\_\_\_

Signature \_\_\_\_\_

Canadians: mail coupon to above address. Orders to be serviced from Canada.

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## RECORD CLUB OF AMERICA—The World's Lowest Priced Record and Tape Club

# HI-FI MANUFACTURERS

If you have any additional questions about products described in this Directory, do not hesitate to write direct to the manufacturer. He will be glad to be of help.

<b>ACOUSTIC RESEARCH, INC.</b> .....	13, 23, 61, 77, 97
<i>24 Thorndike St., Cambridge, Mass. 02141</i>	
<b>ACOUSTRON CORP.</b> .....	98
<i>7525 Wynlea, Houston, Texas 77017</i>	
<b>ADC</b> —Audio Dynamics Corp. ....	35, 98
<i>Pickett District Rd., New Milford, Conn. 06776</i>	
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<i>377 Putnam Ave., Cambridge, Mass. 02139</i>	
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<i>4215 West 45 St., Chicago, Ill. 60632</i>	
<b>AKAI AMERICA, LTD.</b> .....	13, 43, 51, 57, 61, 91, 92, 98, 125
<i>2139 E. Del Amo Blvd., Compton, Cal. 90220</i>	
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<i>100 East 42 St., New York, N.Y. 10017</i>	
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<i>Div. of Tandy Corp. 2617 West 7 St., Forth Worth, Texas 76107</i>	
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<i>Box 317, Oneonta, N.Y. 13820</i>	
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## Today, stereo is not enough!

This little box can add the delights of four channel sound to your present stereo system. It's the E-V STEREO-4™ Decoder.



EVX-4 \$59.95

And it, plus a second stereo amplifier and rear speakers, provides life-size sound from every corner that closely duplicates the actual listening experience. STEREO-4 sound is being broadcast from many stereo FM stations and recorded on stereo discs. Today,

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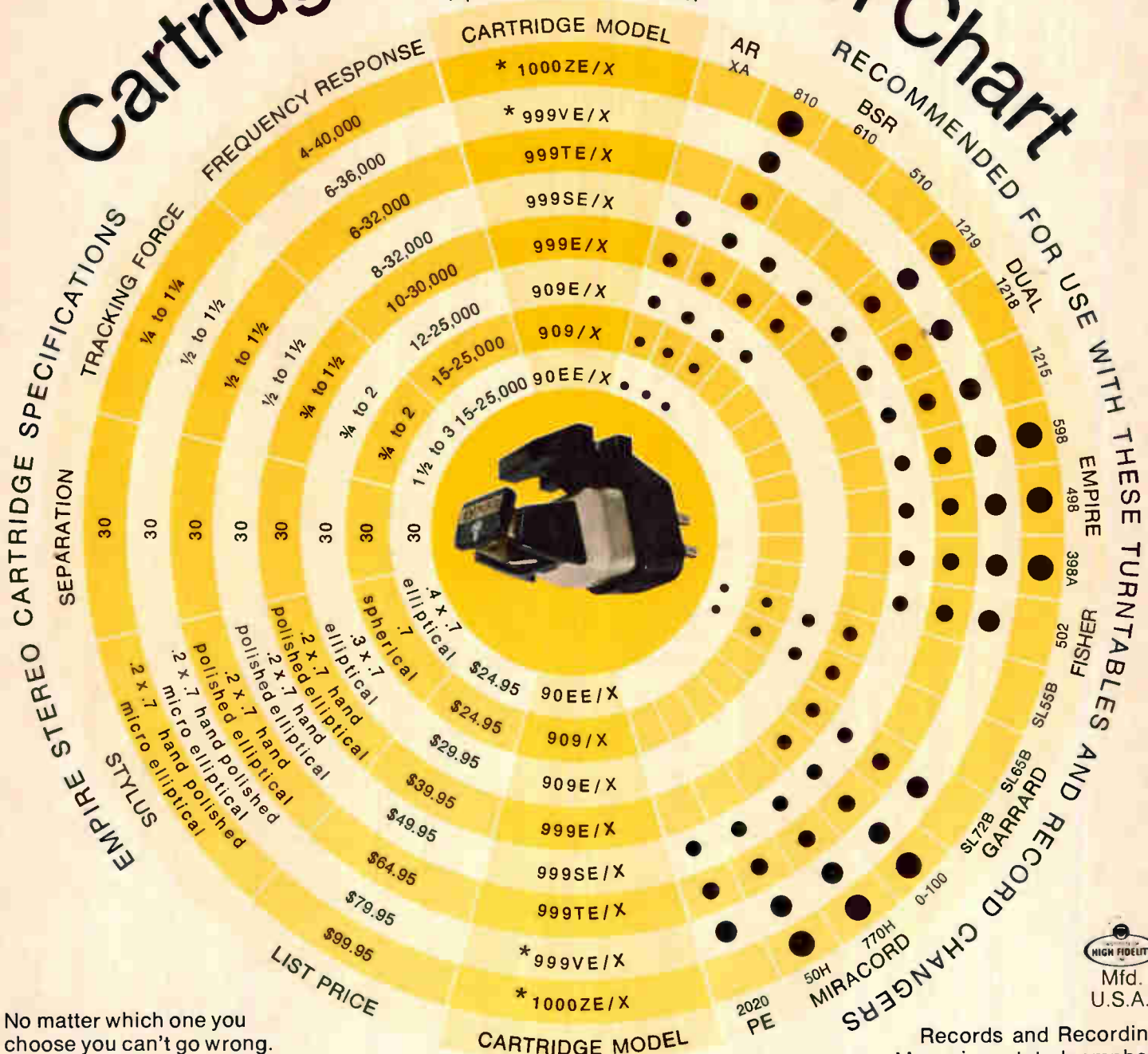
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CIRCLE NO. 24 ON READER SERVICE CARD.

STEREO DIRECTORY

# Cartridge Identification Chart

\*Approved for 4 channel



No matter which one you choose you can't go wrong. Every Empire long playing cartridge is fully shielded, with four poles, four coils, and three magnets (more than any other brand). Perfect magnetic balance, with a signal to noise ratio of 80 dB, they feature a moving magnetic element and stylus lever system .001 inch thick. The performance is phenomenal!

The Experts Agree - For example: Stereo Magazine who tested 13 different cartridges rated the 999VE tops in lightweight tracking ability. Hi Fi Sound Magazine called the 999VE "a real hi-fi masterpiece...a remarkable cartridge unlikely to wear out discs any more rapidly than a feather held lightly against the spinning groove." High Fidelity Magazine said of the 1000ZE "The sound is superb. The performance data among the very best."

'X' designates newest improved version.  
Records and Recording Magazine stated emphatically that the 999VE stereo cartridge is "a design that encourages a hi-fi purist to clap his hands with joy."

FM Guide wrote "...using the 1000ZE. It works beautifully...giving great results."  
Audio Magazine observing a remarkable 35 dB stereo spread between left and right channels in the 999VE said "Outstanding square waves. Tops in separation."  
Popular Science Magazine picked the 999VE hands down as the cartridge for "the stereo system I wish I owned" designed by Electronics Editor Ronald M. Benrey.



Write for free 1971 Guide to Sound Design: Empire Scientific Corp., 1055 Stewart Ave., Garden City, N. Y. 11530.



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<b>SONY/SUPERSCOPE</b> — ..... 47, 56, 59, 91, 132, 135, 138 Superscope, Inc. 8150 Vineland Ave., Sun Valley, Cal. 91352	<b>UNIVERSITY SOUND</b> —Div. of LTV Ling Altec, Inc. .... 120, 136 1515 S. Manchester Ave., Anaheim, Cal. 92803
<b>SOUNDCRAFT</b> — ..... 132 CBS Records Div., Columbia Broadcasting System, Inc. 15 Great Pasture Rd., Danbury, Conn. 06810	<b>UTAH ELECTRONICS</b> —Div. of Utah-American Corp. .... 120 1124 E. Franklin St., Huntington, Ind. 46750
<b>SOUNDCRAFTSMEN</b> ..... 119, 138 Box 2361, Santa Ana, Cal. 92707	<b>V-M CORP.</b> ..... 32, 49, 74, 121 Box 659, Benton Harbor, Mich. 49022
<b>SPEDEX</b> —GC Electronics Div., Hydrometals, Inc. .... 136 400 S. Wyman St., Rockford, Ill. 61101	<b>WATTS, C. E.</b> —Elpa Marketing Industries, Inc. .... 140 Atlantic & Thorens Aves., New Hyde Park, N.Y. 11040
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<b>STANFORD INTERNATIONAL</b> — ..... 127, 136 Div. of Dobb-Stanford Corp. 569 Laurel St., San Carlos, Cal. 94070	<b>WHARFEDALE</b> —British Industries Co., Div. of Avnet, Inc. .... 121 Westbury, N.Y. 11590
<b>STANTON MAGNETICS, INC.</b> ..... 40, 127 Terminal Dr., Plainview, N.Y. 11803	<b>WOLLENSAK</b> —3M Co. Mincom Div. .... 49, 56, 59, 121 3M Center, St. Paul, Minn. 55101
<b>SUPEREX ELECTRONICS CORP.</b> ..... 95, 128, 140 151 Ludlow St., Yonkers, N.Y. 10705	<b>YAMAHA INTERNATIONAL CORP.</b> ..... 32, 74, 80, 88, 121 Box 6600, Buena Park, Cal. 90620
	<b>ZENITH RADIO CORP.</b> ..... 88 1900 Austin Ave., Chicago, Ill. 60639

# COVER STORY

High-fidelity has evolved to the point where the ultimate in sound reproduction is now available to the consumer . . . and 4-channel sound is this year's exciting new development in listening pleasure. All the models on our cover are identified below; prices and technical characteristics appear in the body of the book; and manufacturers' addresses begin on page 6. We hope you will enjoy "window-shopping" through the over-1500 products in this Directory for the one that is just right for you.



- 1—Shure 578 microphone
- 2—Altec-Lansing 911 stereo music center
- 3—Lafayette Dynaquad 4-channel adapter
- 4—Empire Troubador 598 turntable
- 5—Dynaco A-25 speaker system
- 6—Sony/Superscope 650-4 tape recorder
- 7—Koss Red Devil headphones
- 8—James B. Lansing Aquarius 4 speaker system

- 9—Garrard Zero 100 turntable
- 10—Fisher 701 receiver

- 11—Electro-Voice EVX-4 4-channel decoder
- 12—Advent 201 cassette tape deck

# Introducing the BSR McDonald 810 Transcription Series automatic turntable.

## Sequential Cam System

Replaces conventional cam gear and swinging plate used in every other automatic turntable. This revolutionary engineering breakthrough results in a smoothness and quietness of operation and an overall reliability never before achieved. The utilization of eight independent pre-programmed cams eliminates the multiplicity of light stampings and noisy moving parts required in every other automatic turntable mechanism.

## Transcription Tone Arm System

The longer the tone arm the less the tracking error. 8.562" pivot-to-stylus length reduces tracking error to less than 0.5° per inch. Resiliently mounted gliding one-piece counterweight provides precise "zero-balance" adjustment over full range of cartridge and stylus masses. A precision micrometer wheel allows continuous infinite stylus pressure settings between 0 and 6.0 grams. Low-mass aluminum tone-arm assuring extremely low resonance is counterbalanced in both horizontal and vertical planes.

## Synchronous Power Unit

As one of the world's largest designers and manufacturers of sub-fractional horsepower motors, BSR set its resources to develop a motor to match the performance of the Sequential Cam System. The result is the new high torque ultra-quiet synchronous induction power unit, which achieves an unwavering constancy of speed independent of voltage input or record load.

## Automatic Tone Arm Lock

Exclusive feature automatically locks tone arm to rest post whenever unit is in the off position to eliminate possibility of accidental damage to stylus or record. Automatically unlocks in any operational mode.

## Viscous-damped Cue and Pause Control

Provides gentle silicone oil-damped tone arm descent. In all other automatic turntables, the anti-skate system tends to move the tone arm outwards while it descends. BSR designed an

exclusive positive friction Cue-Clutch that prevents this. After pause, the 810's tone arm returns to the very same groove every time. Also, the cueing control is operative in both automatic and manual modes.

## Viscous-damped Tone Arm Descent

The identical gentle viscous controlled descent provided in the cueing operation also functions during automatic and semi-automatic play.

## Dual-Range Anti-Skate Control

Adjustable, dynamic

anti-skate control system provides settings for the substantially different requirements of elliptical or conical styli. Unfailingly applies a continuously corrected degree of compensation regardless of where the stylus is on the record.

## Concentric Gimbal Arm Mount

Gyroscopically pivoted on four pre-loaded ball-bearing races to assure virtually no friction in either the horizontal or vertical planes. This design gives the 810 a tracking capability of 1/4 gram.

## Stylus Overhang Adjustment

An important added feature of the slide-in cartridge head. Provision is made on the cartridge slide for a  $\pm 1/8$ " range of stylus overhang which can be quickly and accurately set by means of the removable locating gauge. Once the stylus overhang is set, the locating gauge can be replaced by a soft stylus whisking brush, which is also provided.

## Push-Button Operation

A series of featherweight push-buttons provides unexcelled operational flexibility. Settings for manual play, semi-automatic play, infinite repeat of one record, or fully automatic play. The push-button feature assures jar-free function selection even at extremely light stylus forces. **What price glory?** \$149.50. Yes, \$149.50.



## 12" Dynamically Balanced Turntable Platter

Full 12" diameter provides maximum record support. Cast, non-ferrous 7-pound platter is machined and precision-balanced to provide optimum performance. Platter mat is deep-ribbed rubber for maximum record protection.

## Integral Strobe Disc

Platter-mounted strobe disc enables precise adjustment of turntable speed when pitch control is utilized. Markings for

## both 33-1/3 and 45 RPM Rotating Manual Sub Spindle

Rotates with platter, eliminating center-hole wear. Interchanges with umbrella-type spindle for automatic play.

## Variable Pitch Control

Provides an infinitely variable 6% range of speed adjustment (for the 810's 33-1/3 and 45 RPM speeds) to match the pitch of a record to a live instrument or other playback device.

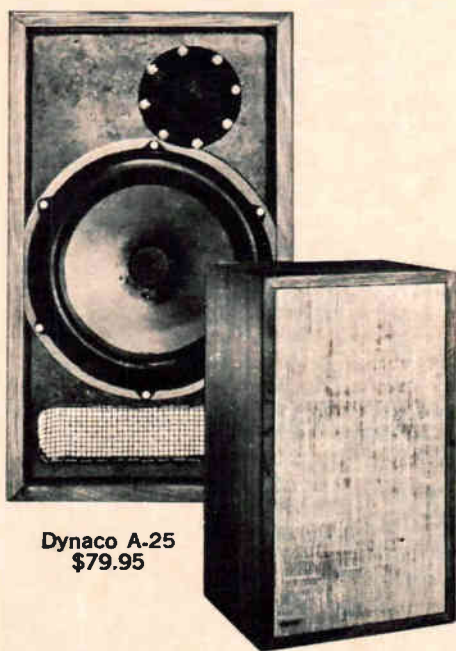
# BSR

## McDONALD

BSR (USA) Ltd. Blauvelt, N.Y. 10913

**"... (The Dynaco A-25)  
has established a  
new standard of performance  
in uncolored, natural sound."**

THE HI-FI NEWSLETTER (P.O. Box 539, Hialeah, Fla. 33011)



Dynaco A-25  
\$79.95

**"... you'll have a  
hard time buying  
more musical  
naturalness  
at any price."**

THE STEREOPHILE (Box 49, Elwyn, Pa. 19063)

The critiques from these hobbyist magazines have unusual merit as these publications accept **no** advertising. Their comparative evaluations are funded solely by the subscriptions of ardent audiophiles.

The A-25's sound quality is a direct consequence of its smooth frequency response, outstanding transient characteristics, and very low distortion. Its aperiodic design (virtually constant impedance over its range) provides an ideal load so any amplifier can deliver more undistorted power (and thus higher sound

levels) for a given speaker efficiency.

Uniformity of impedance also makes the A-25 the best choice for adding two new speakers to an existing stereo setup using the Dynaco system\* for four-dimensional reproduction. In this way, true "concert hall sound" can be enjoyed with a standard stereo amplifier. Many existing stereo discs, tapes and FM broadcasts already contain this ambience information which, now revealed in the additional loudspeakers, gives far greater realism to your listening.

\*Send for literature or pick some up at your dealer where you can see and hear Dynaco equipment.

***DYNACO INC.*** 3060 JEFFERSON ST., PHILA., PA. 19121

# 1

# Amplifiers

## Power Amps, Preamps, Integrated Amps

**T**HE amplifier is the "inaudible" component of a hi-fi system. Its task is to convert the small signal voltage from a tuner, phono cartridge, or other program source to a higher power level suitable for driving a loudspeaker. If the amplifier changes only the magnitude of the signal, affecting all frequencies equally, and does not add audible distortion or noise, it can be considered as an ideal device. Most modern amplifiers satisfy this requirement to a remarkable degree.

The preamplifier serves as the control center of the system. It accepts inputs from several sources, any of which can be selected for listening. The low-level signals from magnetic phono cartridges are equalized to provide a "flat" frequency response and amplified to match the higher levels of other sources such as tuners or tape decks. The volume control and tone controls are part of the preamplifier. Often there is a switch which adds loudness compensation to the volume control. This causes the lower frequencies (and sometimes the higher frequencies as well) to be reduced less than the middle frequencies when the volume is turned down. This reduces the tendency of music to sound "thin" at low volume levels.

The tone controls may allow separate adjustment of the two channels or may be ganged for simultaneous control. If the speakers are identical, the latter arrangement is perfectly satisfactory. Usually a separate balance control adjusts the relative volume in the two channels; sometimes separate, concentrically mounted controls are used for this purpose.

Preamplifiers frequently contain filters which can be switched in to attenuate signals below or above a certain frequency. A low-cut filter is designed to reduce rumble from the record player, while a high-cut filter minimizes hiss or other unwanted noise in the program. Since all filters affect the desired program as well, they should be used sparingly.

Most preamplifiers include a tape-monitoring function. The selected program source is supplied to an external tape recorder, unaffected by the preamplifier control settings. The output of the recorder's playback amplifiers re-enters the preamplifier at the same point in its circuit. By operating the tape-monitor switch, a three-head tape recorder can be inserted into the signal path so that you can listen to a recording from the tape as it is being made. The monitor switch also allows an instant comparison of the original and recorded programs.

An integrated amplifier is a combination of preamplifier and power amplifier in a single unit, usually little larger than the preamplifier alone. In addition to saving space, the use of a common power supply, chassis, and cabinet makes an integrated amplifier somewhat less expensive than equivalent separate components. It includes all their operating functions, plus (in many cases) provision for connecting a second pair

of remote speakers. Switches allow either or both sets of speakers to be activated. Most integrated amplifiers have a front-panel stereo headphone jack for driving low-impedance phones and frequently the speakers may be silenced for headphone listening. Some amplifiers include a center-channel output, which supplies the sum of the left- and right-channel signals to an external amplifier and speaker for installations where the stereo speakers are widely spaced.

Stereo amplifiers contain two identical channels, with all control functions in duplicate. In most cases, the controls are ganged to affect both channels simultaneously. Aside from its functional control features, which can be determined from this Directory or the manufacturer's literature, the most important characteristics of an amplifier are its power output and distortion, over the audio-frequency range of 20-20,000 Hz. The power output must be compatible with the requirements of the associated speakers and the size of the listening room. The recommendations of the speaker manufacturer are the best guide to amplifier power requirements.

Amplifier power ratings can be confusing, since several (IHF, rms, dynamic, and peak) rating systems are employed. It is best to use the continuous (rms) power per channel as the basis for selection, since this is usually how a speaker manufacturer specifies his driving-power requirements. If your speakers should be used with an amplifier of at least 20 watts output, this means 20 watts rms per channel into the rated speaker impedance. Such an amplifier might also be rated by its manufacturer at 40 watts (the sum of the two channel outputs), or with an IHF Music Power rating which might be as high as 60 or 70 watts for both channels. Some amplifier power ratings are based on 4-ohm speakers. Since considerably less power can be delivered to 8-ohm or 16-ohm speakers (most speakers are 8-ohm types), read the specifications carefully.

Harmonic distortion (HD) is often specified at rated power output and should be less than 1% for a good amplifier. It should also decrease at lower power levels, but many amplifier specifications are incomplete in this respect. It is common, especially in low- and medium-priced amplifiers, for distortion to rise considerably at very low and very high frequencies. The ability to deliver its rated power over the full frequency range with acceptable distortion is the mark of a good amplifier, and many manufacturers supply complete specifications which can help you judge their products. Sometimes the rating is in terms of intermodulation distortion (IM), which is a different way of describing the same characteristic. This IM rating may be about the same as the HD rating, or twice as great.

JULIAN D. HIRSCH

### ACOUSTIC RESEARCH, INC.

#### AR Amplifier

Solid-state; integrated amp; 60 W/ch (rms) at 4 ohms; 20-20,000 Hz response at  $\pm 1.0$  dB;



THD < 0.5% (at 20-20,000 Hz); IM < 0.25% (at rated output); sensitivities: mag phono 2  $\rightarrow$  5 mV, tuner 200 mV, tape 200 mV; loudness compensation; stereo null balancing; amplifier in metal case \$250.00; walnut enclosure, metal panel; over-all dimensions 4 $\frac{1}{4}$ " H x 15 $\frac{1}{2}$ " W x 10" D; \$265.00.

1972 EDITION

### AKAI AMERICA, LTD.

#### AA-6000

Solid-state; integrated amp; 60 W/ch (dynamic) at 8 ohms; 20-35,000 Hz power bandwidth; 20-50,000 Hz response at  $-3.0$  dB (aux input); HD < 0.2% (rated output at 1000 Hz); sensitivities: mag phono 3.0 mV; aux 150 mV; tape 200 mV; hi-cut filter; lo-cut filter; loudness compensation switch; independent tone controls; headphone output; tape monitoring; 6 $\frac{1}{4}$ " H x 15 $\frac{1}{2}$ " W x 11 $\frac{1}{2}$ " D; \$169.95.

### ALLIED RADIO SHACK

#### Knight-Kit KG-865

Solid-state; integrated amp; 25 W/ch (dynamic) at 8 ohms; 18-30,000 Hz response at  $\pm 1.0$  dB; IM < 1.0% (at rated output); sensitivities: mag



phono 5.0 mV; aux 400 mV; tuner 400 mV; ganged tone controls; headphone output; walnut cabinet (\$14.95); 3 $\frac{1}{8}$ " H x 13" W x 10" D; \$79.95.

#### SA-900

Solid-state; integrated amp; 22 W/ch (rms) at 8 ohms; 20-20,000 Hz response at  $\pm 1.0$  dB; HD < 1.0% (at rated output); monitoring facilities; push-button mode selector; inputs for two recorders; walnut case; 3 $\frac{3}{8}$ " H x 14 $\frac{3}{4}$ " W x 11" D; \$129.95.

# What makes Crown products UNIQUE?

People often ask us what makes Crown products so different. To begin with, Crown is a professional audio equipment manufacturer, although we also serve discriminating audiophiles. Then there are other unique differences which you may not be aware of.

Crown craftsmen work to only one quality level. Models differ in size and features but not quality. Each is designed to be superior in overall performance in its price range. For example, no competitive amplifier, preamplifier or tape recorder can match Crown's distortion levels. Crown products are made only in America, by American craftsmen with 99% American parts.

Every Crown is guaranteed to meet or exceed printed specifications. Ratings given are always for minimum performance levels. For example, the DC300 is rated at 150 watts per channel rms at 8 ohms, although it typically delivers 300 watts per channel rms with 4 ohms.

Each active electronic component is tested before wiring, then each circuit board is tested after wiring, and finally, the complete product is tested from every angle. All in all, a tape recorder undergoes more than 100 hours cumulative testing. Finally, every Crown is accompanied by its individual hand-entered proof-of-performance report.

All this in-plant effort is backed up in the field by broad-service warranties. This is not to make the products "look good" in advertising, but because we feel committed to keeping every product serving its owner satisfactorily. Amplifiers and preamplifiers are covered by a three-year warranty on parts, labor and round-trip shipping. In addition, all warranties cover continuous commercial usage, including broadcast use 18 hours a day, 7 days a week for years. This is extremely rare for hi fi products, but it confirms the fact that Crown products are designed to the professional standards demanded by recording studios, research and design laboratories, professional musicians, etc.

Among the professional features which ensure the least possible deterioration are front panels of 3/16" aluminum plate, corrosion-protected metal parts, wear-proof control markings, silicon transistors, tantalum capacitors, and many other top-grade components selected for maximum life.

Crown does not plan for product obsolescence. The design lifetime of a Crown recorder is ten years or 65,000 hours, with three service overhauls. We have not yet found performance deterioration in any amplifier after six years in the field.

As one of the oldest audio manufacturers selling in the high fidelity market, we at Crown emphasize that our primary goal is not to make sales, but to serve our customers as we would want to be served, with factual advertising, genuine product value and courteous customer service. For us, this is a deeply satisfying way of doing business.

\* MADE ONLY IN AMERICA \*

Crown

BOX 1000, ELKHART, INDIANA 46514, U.S.A.

CIRCLE NO. 18 ON READER SERVICE CARD

1

## Amplifiers

### SA-500

Solid-state; integrated amp; 15 W/ch (rms) at 8 ohms; 20-20,000 Hz response (no reference



stated); HD < 1.0% (at rated output); hi-cut filter; lo-cut filter; loudness switch; ganged tone controls; headphone output; tape monitoring; walnut case; 3 5/8" H x 14 3/8" W x 11" D; \$99.95.

### AUDIO RESEARCH CORP.

#### Dual 50E

Hybrid; power amp; 50 W/ch (rms) at 8 ohms; 25-20,000 Hz response at  $\pm 1.0$  dB; HD < 0.1%



(at rated output); sensitivity: 1.15 V input for rated output; damping factor 14; \$550.00.

#### Dual 75

Hybrid; power amp; 75 W/ch (rms); 20-20,000 Hz response (no reference stated); HD < 0.1% (at rated output); rack mounting; 7" H x 19" W x 12" D; \$875.00.

#### Model M60B-2

Vacuum tubes; mono power amp; 50 W (rms); 20-20,000 Hz response at  $\pm 1.0$  dB; HD < 1.0% (at rated output); sensitivity: 1.15 V input for rated output; 7" H x 10" W x 9" D; \$229.50.

#### SP-1C

Hybrid; preamp; 20-20,000 Hz response at  $\pm 1.0$  dB; HD < 0.01% (at 5.0 V output); hum &



noise -90 dB; sensitivities: mag phono 2.0 mV, aux 100 mV; loudness control; ganged tone controls; tape monitoring; variable rolloff and turnover; aluminum panel finish; 5" H x 15 5/8" W x 13 1/2" D; \$850.00.

#### SP-2C

Hybrid; preamp; 1.2 mV input for 1.0 V output; 20-20,000 Hz response at  $\pm 1.0$  dB; HD 0.01%



(at 5.0 V output); hum & noise -90 dB (at aux input); sensitivities: mag phono 2.0 mV; aux 100 mV; loudness compensation control; ganged tone controls; aluminum panel finish; 5" H x 15 5/8" W x 13 1/2" D; \$550.00.

### BIC/LUX

#### Model 71/4A

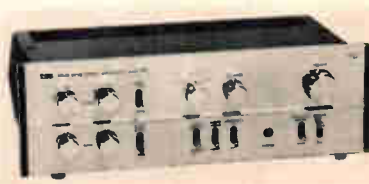
Solid-state; integrated amp; 100 W/ch (rms) at 4 ohms; 15-30,000 Hz power bandwidth at  $\pm$



1.0 dB with 0.5% THD; 10-50,000 Hz response (no reference stated); HD 0.4% (at rated output); IM 0.5% (at rated output); hum & noise -80 dB (at aux input); sensitivities: mag phono 2  $\rightarrow$  8 mV, aux 100 mV, tuner 3.0 mV, tape 100 mV; hi-cut filter; lo-cut filter; loudness compensation switch; ganged tone controls; multiple speaker switching; headphone output; tape monitoring; 6" H x 18 1/2" W x 12 1/2" D; \$337.00.

#### Model 71 6A

Solid-state; integrated amp; 30 W/ch (rms) at 4 ohms; 15-30,000 Hz power bandwidth at  $\pm 1.0$



dB with 0.5% THD; 10-50,000 Hz response (no reference stated); HD 0.4% (at rated output); IM 0.5% (at rated output); hum & noise -70 dB (at aux inputs) sensitivities: mag phono 4.0 mV, aux 100 mV, tuner 100 mV, tape 100 mV; hi-cut filter; lo-cut filter; loudness compensation switch; multiple speaker switching; tape monitoring; 5" H x 16 3/8" W x 9" D; \$179.00.

### CROWN INTERNATIONAL

(Subs. of International Radio & Electronics Corp.)

#### Model D-150

Solid-state; power amp; 120 W/ch (dynamic) at 8 ohms; 4-100,000 Hz response at  $\pm 0.75$  dB at 1 W; IM 0.1% (at rated output); sensitivity: 1.2 V for 75 W at 8 ohms; walnut cabinet (\$33.00); 5 1/4" H x 17" W x 9" D; \$399.00.

#### DC-300 "Lab Standard"

Solid-state; power amp; 210 W/ch (dynamic) at 8 ohms; 0-20,000 Hz response at  $\pm 0.1$  dB at



150 W; IM 0.1% (at rated output); sensitivity: 1.75 V for rated output; input adjustment on front panel; walnut cabinet (\$39.00); 7" H x 19" W x 8 3/4" D; \$685.00.

#### IC-150

Solid-state; preamp; IM 0.01% (at 2.5 V output) hum & noise -80 dB (at phono input); hi-cut filter; lo-cut filter; loudness compensation switch; ganged tone controls; two tape monitoring facilities; walnut cabinet (\$33.00); 5 1/4" H x 17" W x 8 1/2" D; \$269.00.





## DYNACO, INC.

### Mark III

Vacuum tubes; mono power amp; 60 W (rms) at 8 ohms; 6-60,000 Hz response at  $\pm 0.5$  dB; IM



<1.0% (at rated output); sensitivity: 1.6 V for rated output; 4, 8 or 16 ohm output; also available with 70.7 V output (\$139.95) and 500 ohm output (\$149.95); 6 $\frac{3}{4}$ " H x 9" W x 9" D; \$129.95 (kit \$99.95).

### Model 120

Vacuum tubes; power amp; 60 W/ch (rms) at 8 ohms; 5-100,000 Hz power bandwidth at 0.5%



HD; IM < 0.5% (at rated output); hum & noise -95 dB (at rated output); sensitivity: 1.5 V for rated output; 4 $\frac{1}{4}$ " H x 13 $\frac{1}{2}$ " W x 10 $\frac{1}{2}$ " D; \$199.95 (kit \$159.95)

### PAS-3X

Vacuum tubes; preamp; loudness compensa-



tion; independent tone controls; tape monitoring; stereo blend control; 4" H x 13" W x 8" D; \$79.95 (kit only).

### PAT-4

Solid-state; preamp; 5-100,000 Hz response at  $\pm 0.5$  dB; HD 0.1% (at 3V output); IM 0.1% (at



3V output); hum & noise -70 dB (at phono input); hi-cut filter; lo-cut filter; loudness compensation; independent tone controls; 4" H x 13" W x 8" D; \$159.95 (kit \$89.95).

### Stereo 70

Vacuum tubes; 35 W/ch (rms) at 8 ohms; 15-40,000 Hz response at  $\pm 5.0$  dB; IM < 1.0% (at rated output); sensitivity: 1.3 V for rated output; 4, 8 or 16 ohm output; \$99.95 (kit only).

### Stereo 80

Solid-state; power amp; 40 W/ch (rms) at 8 ohms; 15-50,000 Hz response at  $\pm 0.5$  dB; HD

1972 EDITION



<0.5% (at rated output); IM < 0.1% (at rated output); sensitivity: 1.3 V for rated output; 4 $\frac{1}{4}$ " H x 13 $\frac{1}{2}$ " W x 9" D; \$159.95 (kit \$119.95).

### SCA-35

Vacuum tubes; integrated amp; 17 W/ch (rms) at 8 ohms; 20-20,000 Hz response at



$\pm 0.25$  dB; IM < 1.0% (at rated output); sensitivities: mag phono 4.0 mV; tape head 2.5 mV; hi-cut filter; loudness compensation; ganged tone controls; 4" H x 13" W x 10" D; \$99.95 (kit only).

## EICO ELECTRONIC INSTRUMENT CO., INC.

### Cortina 3070

Solid-state; integrated amp; 35 W/ch (dynamic) at 4 ohms; 8-60,000 Hz response at  $\pm 0.5$  dB;



HD 0.8% (at rated output); hum & noise -72 dB; sensitivities: mag phono 4.2 mV, aux 270 mV, tuner 270 mV; hi-cut filter; lo-cut filter; loudness compensation (switch); ganged tone controls; multiple speaker switching; headphone output; tape monitoring; 3 $\frac{1}{8}$ " H x 12" W x 7 $\frac{3}{4}$ " D; \$139.95 (kit \$99.95).

### Cortina 3080

Solid-state; integrated amp; 16 W/ch (dynamic) at 4 ohms; 20-20,000 Hz response at  $\pm 3.0$  dB;



HD 0.75% (at 8W output); IM 1.7% (at 5W output); sensitivities: mag phono 3.8 mV, aux 300 mV, tuner 300 mV; ganged tone controls; headphone output; damping factor 30; tape monitoring; metal cabinet; 3 $\frac{1}{8}$ " H x 12" W x 6 $\frac{5}{8}$ " D; \$109.95 (kit \$69.95).

### Cortina 3150

Solid-state; integrated amp; 75 W/ch (dynamic) at 4 ohms; 10-50,000 Hz response at  $\pm 1.5$  dB (no reference stated); HD 0.25% (at 35W output); sensitivities: mag phono 4.7 mV, aux 280 mV,



tuner 280 mV; hi-cut filter; lo-cut filter; loudness compensation; ganged tone controls; multiple speaker switching; headphone output; 3 $\frac{1}{8}$ " H x 14 $\frac{1}{2}$ " W x 9" D; \$225.00 (kit \$149.95).

## ELECTRO-VOICE, INC.

### E-V 1244

Solid-state; integrated amp; 32 W/ch (IHF) at 4 ohms; 20-20,000 Hz response at  $\pm 1.5$  dB;



HD < 1.0% (at rated output); hum & noise > -60 dB (at phono input); sensitivities: mag phono 3.0 mV, tuner 150 mV, tape 150 mV; ganged tone controls; headphone output; damping factor 35; tape monitoring; 3 $\frac{3}{8}$ " H x 8 $\frac{3}{8}$ " W x 10 $\frac{1}{4}$ " D; \$132.30.

## FISHER RADIO

### TX-50

Vacuum tubes; integrated amp; 28 W/ch (dynamic) at 8 ohms; hi-cut filter; loudness compensa-



tion (switch); ganged tone controls; multiple speaker switching; headphone output; walnut cabinet (\$19.95); 4 $\frac{3}{4}$ " H x 15 $\frac{1}{2}$ " W x 9" D; \$149.95.

### TX-2000

Vacuum tubes; 60 W/ch (dynamic) at 4 ohms; 22-24,000 Hz power bandwidth; HD 0.5% (at rated output); IM 0.8% (at rated output); sensitivities: mag phono 2.0 or 7.5 mV, aux 200 mV, tuner 200 mV, tape 200 mV, tape head 1.8 mV; hi-cut filter; loudness compensation; ganged tone controls; multiple speaker switching; center channel output; headphone output; tape monitoring; walnut cabinet (\$22.95); 4 $\frac{1}{8}$ " H x 15 $\frac{1}{8}$ " W x 12 $\frac{3}{4}$ " D; \$349.95.

## HARMAN-KARDON, INC.

### Citation 11

Solid-state; preamp; 1-250,000 Hz response at  $\pm 0.5$  dB; HD < 0.01%; IM < 0.01%; hi-cut filter; lo-cut filter; loudness compensation; equalizer tone controls; multiple speaker switching; headphone output; walnut cabinet (\$29.95); \$295.00.

### Citation 12

Solid-state; power amp; 60 W/ch (rms) at 8 ohms; 5-35,000 Hz power bandwidth; 5-75,000 Hz response at  $\pm 0.5$  dB; HD < 0.8% (at rated output); IM < 0.8% (at rated output); hum & noise -100 dB (at rated output); \$295.00 (kit \$225.00).

## HEATH CO.

### AA-29

Solid-state; integrated amp; 50 W/ch (dynamic) at 8 ohms; 5-30,000 Hz power bandwidth; 7-60,000 Hz response at -1.0 dB (at 1W); HD 0.2% (at 35 W); IM 0.2% (at 35 W); hum & noise -65 dB (at phono input); sensitivities: mag phono 2.2 mV, aux 180 mV, tape 180 mV; loudness compensation (switch); ganged tone con-

# 1

## Amplifiers

trols; multiple speaker switching; center channel output; headphone output; damping factor 50; tape monitoring; walnut cabinet (\$19.95); \$149.95 (kit).

### AA-14

Solid-state; integrated amp; 15 W/ch (dynamic); 15-60,000 Hz response at  $\pm 1.0$  dB; ganged



tone controls; headphone output; walnut cabinet (\$9.95);  $3\frac{1}{4}$ " H x 12" W x  $9\frac{3}{4}$ " D; \$67.95 (kit).

### AA-15

Solid-state; integrated amp; 75 W/ch (dynamic) at 8 ohms; 6-30,000 Hz power bandwidth; 8-40,000 Hz response at  $\pm 1.0$  dB (at 1 W); HD 0.5% (at 50 W rms); IM 0.5% (at 50 W rms); hum & noise -60 dB (at phono input); sensitivities: mag phono 2.2 mV, aux 200 mV, tape 200 mV;



loudness compensation (switch); ganged tone controls; stereo null balancing; multiple speaker switching; headphone output; damping factor 45; tape monitoring; walnut cabinet (\$19.95);  $4\frac{3}{4}$ " H x  $16\frac{1}{8}$ " W x  $12\frac{1}{2}$ " D; \$179.95 (kit).

## HITACHI SALES CORP.

### IA-600

Solid-state; integrated amp; 50 W/ch (IHF) at 8 ohms; 10-100,000 Hz response at  $\pm 1.0$  dB (no reference stated); HD < 0.1% (at rated output); hum & noise -68 dB (at phono input); sensitivities: mag phono 2.5 or 6.0 mV, aux 200 mV, mike 2.5 or 6.0 mV; hi-cut filter; loudness compensation (switch); ganged stepped tone controls; multiple speaker switching; headphone output; damping factor 50; tape monitoring;  $4\frac{1}{16}$ " H x  $16\frac{1}{4}$ " W x  $12\frac{1}{16}$ " D; \$219.95.

### IA-1000

Solid-state; integrated amp; 70 W/ch (IHF) at 8 ohms; 10-100,000 Hz response at  $\pm 1.0$  dB; HD < 0.1% (at rated output); hum & noise -70 dB (at phono input); sensitivities: mag phono 2.0-5.0 mV, aux 150 mV, mike 2.0 mV; hi-cut filter; lo-cut filter; loudness compensation (switch); ganged tone controls; multiple speaker switching; headphone output; damping factor 50; tape monitoring; VU meters;  $5\frac{3}{8}$ " H x  $17\frac{1}{8}$ " W x 13" D; \$319.95.

### IA-1200

Solid-state; integrated amp; 100 W/ch (IHF) at 8 ohms; 20-50,000 Hz response at  $\pm 1$  dB; HD < 0.1% (at rated output); hum & noise -90 dB (at phono input); sensitivities: mag phono 1.5-5.0 adjustable mV, aux 150 mV, tuner 150 mV, tape head 1.5 mV, mike 1.5 mV; hi-cut filter; lo-cut filter; independent tone controls; multiple



speaker switching; center channel output; headphone output; damping factor 40; tape monitoring; may be used as 4-channel power amplifier;  $5\frac{1}{2}$ " H x  $16\frac{3}{4}$ " W x  $12\frac{3}{8}$ " D; \$595.00.

## INFINITY SYSTEMS, INC.

### the SPC

Solid-state; preamp; 20-20,000 Hz response at  $\pm 0.1$  dB; HD 0.007% (at phono input); IM 0.005%



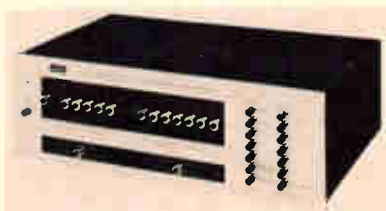
(at phono input); hum & noise -74 dB (at phono input); ganged tone controls; multiple speaker switching; tape monitoring; nine octave filters from 50-12,800 Hz adjustable  $\pm 9.0$  dB; 7.0 V output; rosewood cabinet;  $4\frac{1}{2}$ " H x 13" W x  $8\frac{1}{2}$ " D; \$650.00.

## JVC AMERICA, INC.

(Subs. of Victor Co. of Japan, Ltd.)

### Model 5011

Solid-state; preamp; 10-100,000 Hz response at  $\pm 0.5$  dB; hum & noise -96 dB (at aux input);



sensitivities: mag phono 3.0 mV, ceramic phono 120 mV, aux 170 mV, tuner 170 mV, tape head 1.2 mV, mike 2.0 mV; lo-cut filter; multiple speaker switching; individual channel "Sound Effect Amplifier" with 7 segment graphic tone control; tape monitoring; 6" H x 19" W x  $13\frac{1}{2}$ " D; \$599.95.

### Model 5012

Solid-state; power amp; 80 W/ch (IHF) at 8 ohms; 10-100,000 Hz response at 0.0 dB; HD



< 0.07% (at rated output); IM < 0.15% (at rated output); hum & noise -115 dB (at rated output); sensitivity: 1.0 V for rated output; headphone output; damping factor 80; 4-32 ohm output; VU meters; 6" H x 19" W x  $13\frac{1}{2}$ " D; \$599.95.

### Model 5107

Solid-state; integrated amp; 60 W/ch (dynamic) at 4 ohms; 25-40,000 Hz response at  $\pm 0.5$  dB (no reference stated); HD < 0.5% (at 1000 Hz); IM < 0.7% (at rated output); hum & noise -76 dB (at phono input); sensitivities: mag phono



1.2 mV, aux 30 mV, tuner 30 mV, tape 30 mV, mike 1.0 mV; multiple speaker switching; headphone output; 4-16 ohm output; ganged channel "Sound Effect Amplifier" with 7 segment graphic tone control; Pink Noise test circuit; tape monitoring; over-all size  $5\frac{1}{8}$ " H x  $17\frac{1}{8}$ " W x  $15\frac{3}{8}$ " D; \$299.95.

### Model 5110

Solid-state; preamp; similar to Model 5107, but less built-in power amplifier section;  $5\frac{7}{16}$ " H x  $16\frac{1}{16}$ " W x  $11\frac{3}{8}$ " D; \$249.95.

### Model 5111

Solid-state; power amp; 70 W/ch (IHF) at 8 ohms; 20-30,000 Hz response at  $\pm 0.5$  dB; HD < 0.07% (at rated output); IM < 0.15% (at rated output); hum & noise -110 dB (at rated output); sensitivity: 0.8 V for rated output; headphone output; damping factor  $\frac{1}{2}$ -50 (selectable); 4  $\rightarrow$  16 ohm output; VU meters;  $5\frac{7}{16}$ " H x  $8\frac{1}{2}$ " W x  $12\frac{3}{8}$ " D; \$249.95.

## KENWOOD ELECTRONICS, INC.

### KA-2002

Solid-state; integrated amp; 23 W/ch (dynamic) at 4 ohms; 20-30,000 Hz response at  $\pm 2.0$  dB;



HD < 0.8% (at rated output); IM < 0.8% (at rated output); hum & noise -60 dB (at phono input); sensitivities: mag phono 2.0 mV, aux 150 mV, tuner 150 mV, tape 150 mV; loudness compensation (switch); ganged tone controls; headphone output; tape monitoring; walnut cabinet (\$15.00); 5" H x 13" W x  $9\frac{1}{2}$ " D; \$99.95.

### KA-4002

Solid-state; integrated amp; 40 W/ch (dynamic) at 4 ohms; 18-30,000 Hz power bandwidth;



20-40,000 Hz response at  $\pm 1.5$  dB; HD < 0.5% (at rated output); IM < 0.5% (at rated output); hum & noise -65 dB (at phono input); sensitivities: mag phono 2.5 mV, aux 150 mV, tuner 150 mV, tape 150 mV; hi-cut filter; lo-cut filter; loudness compensation (switch); ganged tone controls; headphone output; tape monitoring; walnut cabinet (\$15.00); 5" H x 13" W x  $9\frac{1}{2}$ " D; \$139.95.

### KA-5002

Solid-state; integrated amp; 75 W/ch (dynamic) at 4 ohms; 20-50,000 Hz response at  $\pm 1.0$  dB;



HD < 0.5% (at rated output); IM < 0.3% (at rated output); hum & noise -65 dB (at phono input); sensitivities: mag phono 2.5 mV, aux 200 mV, tuner 200 mV, tape 200 mV, mike 2.5 mV; hi-cut filter; lo-cut filter; loudness compensation (switch); ganged tone controls; stereo null balancing; multiple speaker switching; headphone output; damping factor 45; tape monitoring; muting switch;  $5\frac{1}{8}$ " H x  $17\frac{1}{8}$ " W x  $11\frac{1}{8}$ " D; \$219.95.

### KA-7002

Solid-state; integrated amp; 98 W/ch (dynamic)



at 4 ohms; 20-50,000 Hz response at  $\pm 1.0$  dB; HD < 0.5% (at rated output); IM < 0.3% (at rated output); hum & noise -65 dB (at phono input); sensitivities: mag phono 2.5 mV, aux 200 mV, tape 200 mV; hi-cut filter; lo-cut filter; loudness compensation (switch); ganged tone controls; stereo null balancing; multiple speaker switching; headphone output; damping factor 45; tape monitoring; muting switch; 5 $\frac{1}{8}$ " H x 16 $\frac{1}{8}$ " W x 11" D; \$299.95.

#### KM-8002

Solid-state; power amp; 110 W/ch (dynamic) at 4 ohms; 20-50,000 Hz response at  $\pm 1.0$  dB;



HD < 0.3% (at rated output); IM < 0.3% (at rated output); sensitivity: 100 mV or 1 V for rated output; lo-cut filter; multiple speaker switching; headphone output; damping factor 45; level input controls; phase reversal switch; 5 $\frac{1}{8}$ " H x 16 $\frac{1}{8}$ " W x 11 $\frac{1}{8}$ " D; \$199.95.

### LAFAYETTE RADIO

#### LA-125B

Solid-state; integrated amp; 62 $\frac{1}{2}$  W/ch (dynamic) at 4 ohms; 13-35,000 Hz power bandwidth;



22-20,000 Hz response at  $\pm 1.0$  dB; HD < 1.0% (at rated output); hum & noise -75 dB (at aux input); sensitivities: mag phono 2.2 or 7.0 mV, ceramic phono 75 mV, aux 250 mV, tuner 150 mV, tape 500 mV; hi-cut filter; lo-cut filter; loudness compensation (switch); independent tone controls; multiple speaker switching; headphone output; tape monitoring; 3 $\frac{3}{8}$ " H x 13" W x 9 $\frac{1}{4}$ " D; \$139.95.

#### LA-324A

Solid-state; integrated amp; 20 W/ch (dynamic) at 4 ohms; 35-30,000 Hz power bandwidth; 20-20,000 Hz response at  $\pm 1.5$  dB; HD 0.07% (at 1 W output); hum & noise -75 dB (at aux input); sensitivities: mag phono 2.3 mV, ceramic phono 80 mV, aux 250 mV, tuner 500 mV; loudness compensation (switch); ganged tone controls; multiple speaker switching; headphone output; 3 $\frac{1}{2}$ " H x 10 $\frac{3}{8}$ " W x 8 $\frac{3}{8}$ " D; \$69.95.

#### LA-750

Solid-state; integrated amp; 40 W/ch (dynamic) at 4 ohms; 20-20,000 Hz response at  $\pm 1.0$  dB;



HD < 1.0% (at rated output); hum & noise -75 dB (at aux input); sensitivities: mag phono 2.3 mV, ceramic phono 80 mV, aux 250 mV, tuner 500 mV; hi-cut filter; loudness compensation (switch); ganged tone controls; multiple speaker switching; headphone output; tape monitoring; 3 $\frac{3}{4}$ " H x 12" W x 9 $\frac{1}{8}$ " D; \$89.95.

### JAMES B. LANSING SOUND, INC.

#### SA660

Solid-state; integrated amp; 60 W/ch (rms) at 8 ohms; 20-20,000 Hz response at  $\pm 0.5$  dB; HD



< 0.2% (at rated output); IM < 0.2% (at rated output); hum & noise -72 dB; sensitivities: mag phono 4.0-16.0 mV, aux 250 mV, tuner 250 mV; loudness compensation (switch); independent tone controls; headphone output; tape monitoring; walnut sides (\$15.00); 5 $\frac{1}{8}$ " H x 16 $\frac{1}{8}$ " W x 13 $\frac{3}{4}$ " D; \$435.00.

#### SE400S

Solid-state; power amp; 40 W/ch (rms) at 8 ohms; 20-20,000 Hz response at  $\pm 0.5$  dB; HD



< 0.15% (at rated output); IM < 0.15% (at rated output); features plug-in equalizer boards to set damping factor; Model SE460 is similar, but has 60 W/ch output (\$435.00); 4 $\frac{5}{8}$ " H x 15 $\frac{1}{4}$ " W x 7 $\frac{3}{4}$ " D; \$300.00.

#### SG520 Graphic Controller

Solid-state; preamp; 20-20,000 Hz response at  $\pm 0.25$  dB; HD < 0.15%; IM < 0.05%; loudness



compensation (switch); independent tone controls; stereo null balancing; multiple speaker switching; built-in 1000 Hz test tone; walnut side panels (\$15.00); 6 $\frac{1}{8}$ " H x 15 $\frac{1}{16}$ " W x 11 $\frac{1}{2}$ " D; \$450.00.

### LEAK

#### Stereo 70

Solid-state; integrated amp; 35 W/ch (rms) at 8 ohms; 20-30,000 Hz response (no reference



stated); HD 0.1% (at rated output); IM 0.3% (at rated output); hum & noise -66 dB (at aux input); sensitivities: mag phono 2.0 or 10.0 mV, aux 400 mV, tuner 25 or 60 mV; hi-cut filter; ganged tone controls; multiple speaker switching; headphone output; tape monitoring; 4 $\frac{1}{4}$ " H x 13" W x 8 $\frac{3}{4}$ " D; \$299.00.

### MARANTZ CO., INC.

#### Model 33

Solid-state; preamp; 5-100,000 Hz response at  $\pm 0.5$  dB; HD 0.02%; IM 0.02%; hum & noise -100 dB (at phono input); sensitivities: mag phono 1.0 mV, aux 200 mV, tape 200 mV, tape head 1.0 mV, 3.0 V output; hi-cut filter; lo-cut filter; independent tone controls; center channel



output; headphone output; 5 $\frac{3}{4}$ " H x 15 $\frac{3}{8}$ " W x 8 $\frac{3}{4}$ " D; \$395.00.

#### Model 250

Solid-state; power amp; 125 W/ch (rms) at 8 ohms; 5-45,000 Hz power bandwidth; 20-20,000



Hz response at  $\pm 0.1$  dB; HD 0.1% (at rated output); IM 0.03% (at rated output); hum & noise -106 dB; sensitivity: 1.5 V for rated output; damping factor 100; output metering; 8 ohms output; over-all size 6 $\frac{3}{8}$ " H x 15 $\frac{3}{8}$ " W x 9 $\frac{1}{2}$ " D; \$495.00.

#### Model 500

Solid-state; power amp; 250 W/ch (rms) at 8 ohms; 3-60,000 Hz power bandwidth; 20-20,000 Hz response at  $\pm 0.1$  dB; HD 0.1% (at rated output); IM 0.1% (at rated output); hum & noise -110 dB; sensitivity: 1.5 V for rated output; damping factor 500; power monitoring meters; 8 ohms output; over-all size 7" H x 17 $\frac{1}{2}$ " W x 16" D; \$1200.00.

#### Model 1030

Solid-state; integrated amp; 15 W/ch (rms) at 8 ohms; 15-40,000 Hz power bandwidth; 20-40,000 Hz response at  $\pm 2.0$  dB; HD 0.5% (at rated output); IM 0.5% (at rated output); hum & noise -64 dB (at phono input); sensitivities: mag phono 1.8 mV, aux 180 mV; hi-cut filter; loudness compensation (switch); stepped tone controls; multiple speaker switching; headphone output; damping factor 50; tape monitoring; mike input on front panel; 4 $\frac{3}{4}$ " H x 14 $\frac{1}{2}$ " W x 12" D; \$139.00.

#### Model 1060

Solid-state; integrated amp; 30 W/ch (rms) at 8 ohms; 15-40,000 Hz power bandwidth; 15-40,000 Hz response at  $\pm 2.0$  dB; HD 0.5% (at rated output); IM 0.5% (at rated output); hum & noise -67 dB (at phono input); sensitivities: mag phono 1.8 mV, aux 180 mV, tuner 180 mV; hi-cut filter; lo-cut filter; loudness compensation (switch); ganged tone controls; multiple speaker switching; headphone output; damping factor 50; tape monitoring; mike input on front panel; mid-range tone control; 4 $\frac{3}{4}$ " H x 12" W x 14 $\frac{1}{2}$ " D; \$189.00.

#### Model 1200

Solid-state; integrated amp; 100 W/ch (rms) at 8 ohms; 10-40,000 Hz power bandwidth; 20-



20,000 Hz response at  $\pm 0.1$  dB; HD 0.15% (at rated output); IM 0.15% (at rated output); hum & noise -100 dB; sensitivities: mag phono 1.3 mV, aux 100 mV; hi-cut filter; lo-cut filter; loudness compensation (switch); independent tone controls; multiple speaker switching; headphone output; damping factor 100; tape monitoring; 5" H x 15 $\frac{3}{8}$ " W x 14" D; \$595.00.

# 1

## Amplifiers

### NIKKO ELECTRIC CORP. OF AMERICA

#### TRM-50

Solid-state; integrated amp; 26 W/ch (dynamic) at 8 ohms; 10-17,000 Hz response at  $\pm 1.0$  dB;



HD 0.6% (at rated output); IM 0.6% (at rated output); hum & noise -65 dB (at phono input); sensitivities: mag phono 2.4 mV, ceramic phono 50 mV, aux 300 mV, tuner 300 mV, tape 300 mV; hi-cut filter; lo-cut filter; loudness compensation (switch); ganged tone controls; multiple speaker switching; headphone output; damping factor 25; tape monitoring; 3 $\frac{3}{4}$ " H x 13" W x 9 $\frac{1}{2}$ " D; \$119.95.

#### TRM-400

Solid-state; integrated amp; 22 W/ch (dynamic) at 8 ohms; 10-50,000 Hz response at



$\pm 1.0$  dB; HD 0.2% (at 1 W output); IM 0.5% (at 1 W output); hum & noise -60 dB (at phono input); hi-cut filter; lo-cut filter; loudness compensation (switch); ganged tone controls; multiple speaker switching; headphone output; tape monitoring; 3 $\frac{3}{4}$ " H x 12" W x 8 $\frac{1}{2}$ " D; \$109.95.

#### TRM-1200

Solid-state; integrated amp; 60 W/ch (dynamic) at 8 ohms; 13-50,000 Hz response at  $\pm 1.0$  dB;



HD 0.3% (at rated output); IM 0.1% (at 1 W output); hum & noise -70 dB (at phono input); sensitivities: mag phono 2.2 mV, aux 220 mV, tuner 220 mV, tape 220 mV; hi-cut filter; lo-cut filter; loudness compensation (switch); independent tone controls; multiple speaker switching; center channel output; headphone output; VU meters; tape monitoring; 4 $\frac{1}{2}$ " H x 15 $\frac{1}{4}$ " W x 12 $\frac{1}{4}$ " D; \$249.95.

### OLSON

#### AM-375

Solid-state; integrated amp; 120 W/ch (dynamic) at 4 ohms; 20-20,000 Hz response (no reference stated); hum & noise -60 dB (at phono input); hi-cut filter; lo-cut filter; loudness compensation (switch); ganged tone controls; headphone output; tape monitoring; 4 $\frac{3}{4}$ " H x 15 $\frac{1}{2}$ " W x 7 $\frac{1}{2}$ " D; \$200.00.



### PIONEER (U.S. Pioneer Electronics Corp.)

#### SA-600

Solid-state; integrated amp; 50 W/ch (dynamic) at 4 ohms; 10-50,000 Hz power bandwidth; 15-70,000 Hz response at  $\pm 1.0$  dB; HD < 0.5% (at rated output); IM < 0.5% (at rated output); hum & noise > 80 dB (at phono input); sensitivities: mag phono 2.3 mV, aux 200 mV, tuner 200 mV, tape 200 mV, mike 3.3 mV; hi-cut filter; lo-cut filter; loudness compensation (switch); ganged tone controls; multiple speaker switching; headphone output; damping factor 30; tape monitoring; mike input on front panel; 5 $\frac{1}{16}$ " H x 16 $\frac{1}{16}$ " W x 13 $\frac{1}{4}$ " D; \$179.95.

#### SA-800

Solid-state; integrated amp; 82 $\frac{1}{2}$  W/ch (dynamic) at 4 ohms; 5-50,000 Hz power bandwidth; 5-80,000 Hz response at  $\pm 1.0$  dB; HD < 0.5% (at rated output); IM < 0.5% (at rated output); hum & noise > -80 dB (at phono input); sensitivities: mag phono 3.0 mV, ceramic phono 56 mV, aux 230 mV, tuner 230 mV, tape 230 mV, mike 2.3 mV; hi-cut filter; lo-cut filter; loudness compensation (switch); ganged tone controls; multiple speaker switching; center channel output; headphone output; damping factor 65; tape monitoring; mike input on front panel; 20 dB muting switch; 5 $\frac{1}{8}$ " H x 16 $\frac{1}{8}$ " W x 13 $\frac{1}{4}$ " D; \$239.95.

#### SA-1000

Solid-state; integrated amp; 120 W/ch (dynamic) at 4 ohms; 5-50,000 Hz power bandwidth; 5-



80,000 Hz response at  $\pm 1.0$  dB; HD < 0.1% (at rated output); hum & noise > -80 dB (at phono input); sensitivities: mag phono 2.0 mV, ceramic phono 58 mV, aux 200 mV, tuner 200 mV, tape 200 mV, mike 115 mV; hi-cut filter; lo-cut filter; loudness compensation (switch); independent tone controls; multiple speaker switching; center channel output; headphone output; damping factor 65; tape monitoring; two mike inputs on front panel; -20 dB muting switch; 5 $\frac{1}{16}$ " H x 16 $\frac{1}{16}$ " W x 13 $\frac{1}{4}$ " D; \$299.95.

#### SC-700

Solid-state; preamp; 10-60,000 Hz response at  $\pm 1.0$  dB; HD < 0.05% (at rated output); hum &



noise > -80 dB (at phono input); sensitivities: mag phono 2.4 mV, aux 250 mV, tuner 250 mV; independent tone controls; headphone output; -20 dB muting switch; tape monitoring; 4 $\frac{1}{2}$ " H x 11 $\frac{3}{16}$ " W x 10" D; \$129.95.

#### SM-100

Solid-state; power amp; 105 W/ch (dynamic) at 4 ohms; 5-100,000 Hz response at  $\pm 1.0$  dB;



HD < 0.5% (rms output at 1000 Hz); hum & noise -110 dB; sensitivity: 1  $\rightarrow$  5 V; lo-cut filter; multiple speaker switching; variable damping factor 1  $\rightarrow$  100; walnut cabinet; 6 $\frac{3}{8}$ " H x 16 $\frac{1}{2}$ " W x 11 $\frac{1}{4}$ " D; \$375.00.

#### SM-700

Solid-state; power amp; 60 W/ch (dynamic) at 4 ohms; 15-60,000 Hz response at  $\pm 0.5$  dB; HD < 0.05% (at 1000 Hz); hum & noise -100 dB; sensitivity: 0.5  $\rightarrow$  2.0 V; center channel output; damping factor 30; speaker phasing switch; input level switch; 4 $\frac{5}{8}$ " H x 11 $\frac{1}{16}$ " W x 10" D; \$129.95.

### RADFORD AUDIO LTD.

#### SC24

Solid-state; preamp; 30-20,000 Hz response at  $\pm 0.5$  dB; HD < 0.01% (at 1 V output); hum &



noise -70 dB (at phono input); sensitivities: mag phono 2.0 mV, aux 80 mV, tuner 80 mV, tape 80 mV; hi-cut filter; ganged tone controls; headphone output; mid-range tone control; tape monitoring; 4 $\frac{1}{2}$ " H x 16 $\frac{3}{8}$ " W x 8 $\frac{1}{8}$ " D; \$345.00.

#### SPA50

Solid-state; power amp; 50 W/ch (dynamic) at 4 ohms; 10-50,000 Hz response at  $\pm 1.5$  dB; HD < 0.02% (at rated output); hum & noise -95 dB; sensitivity: 1 V for rated output; multiple speaker switching; 4 $\frac{1}{2}$ " H x 13" W x 10 $\frac{1}{4}$ " D; \$355.00.

### REVOX CORPORATION

#### Model A50

Solid-state; integrated amp; 70 W/ch (dynamic) at 4 ohms; 10-40,000 Hz power bandwidth; 20-20,000 Hz response at  $\pm 1.0$  dB; HD < 0.1% (at 1000 Hz); IM < 0.3% (at rated output); hum & noise > -65 dB (at rated output); sensitivities: mag phono 3.0 mV, ceramic phono 230 mV, tuner 100 mV, tape 100 mV; hi-cut filter; lo-cut filter; loudness compensation (switch); independent tone controls; headphone output; damping factor 20; tape monitoring; 6 $\frac{1}{4}$ " H x 16 $\frac{3}{8}$ " W x 9 $\frac{9}{16}$ " D; \$375.00.

### SANSUI ELECTRONICS CORP.

#### AU222

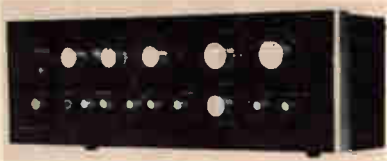
Solid-state; integrated amp; 46 W/ch (dynamic) at 8 ohms; 20-30,000 Hz response at  $\pm 1.0$  dB;



HD < 0.8% (at rated output); IM < 0.8% (at rated output); hum & noise > -60 dB (at phono input); sensitivities: mag phono 2.0 mV, aux 150 mV, tuner 150 mV, tape 150 mV, tape head 1.5 mV; hi-cut filter; lo-cut filter; loudness compensation (switch); ganged tone controls; headphone output; damping factor 20; tape monitoring; 4 $\frac{3}{8}$ " H x 11 $\frac{1}{2}$ " W x 10 $\frac{1}{2}$ " D; \$119.95.

#### AU555A

Solid-state; integrated amp; 42 $\frac{1}{2}$  W/ch (dynamic) at 4 ohms; 20-40,000 Hz response at  $\pm 1.0$  dB; HD < 0.5% (at rated output); IM < 0.5% (at rated output); hum & noise > -70 dB (at phono input); sensitivities: mag phono 2.0 mV, aux 180 mV, tuner 180 mV, tape 180 mV; hi-cut filter; lo-



cut filter; loudness compensation (switch); ganged tone controls; multiple speaker switching; headphone output; damping factor 50; tape monitoring; mid-range tone control; 5 7/8" H x 15 1/16" W x 10 1/16" D; \$169.95.

**AU999**

Solid-state; integrated amp; 90 W/ch (dynamic) at 4 ohms; 20-70,000 Hz response at ±1.0 dB;



HD <0.4% (at rated output); IM <0.4% (at rated output); sensitivities: mag phono 2.0 mV, aux 200 mV, tuner 200 mV, tape 200 mV, mike 3.0 mV; hi-cut filter; lo-cut filter; ganged tone controls; stereo null balancing; multiple speaker switching; headphone output; damping factor 45; tape monitoring; mid-range tone control; dual tape inputs; 6 1/8" H x 18 1/8" W x 11 1/4" D; \$299.95.

**BA60**

Solid-state; power amp; 30 W/ch (dynamic) at 4 ohms; 20-60,000 Hz response at ±1.0 dB; HD



<0.3% (at rated output); IM <0.3% (at rated output); hum & noise >-80 dB; sensitivity: 0.7 V for rated output; stereo null balancing; damping factor 46; phasing switch; level adjust; Model BA90 is similar, but 45 W/ch (\$149.95); 4 3/8" H x 6" W x 10 3/8" D; \$119.95.

**H. H. SCOTT, INC.**

**Model 490**

Solid-state; integrated amp; 70 W/ch (rms) at 8 ohms; 15-40,000 Hz power bandwidth; 15-



30,000 Hz response at ±1.0 dB; HD 0.5% (at rated output); hum & noise -75 dB; sensitivities: mag phono 4.0 mV, tape 55 mV, mike 5.5 mV; hi-cut filter; loudness compensation (switch); independent tone controls; multiple speaker switching; headphone output; damping factor 30; VU meters; 20 dB muting switch; tape monitoring; 6" H x 17 1/2" W x 15 1/2" D; \$299.90.

**SHERWOOD ELECTRONIC LABS, INC.**

**Model S-9500C**

Solid-state; integrated amp; 57 W/ch (dynamic) at 4 ohms (one channel driven); 20-20,000 Hz response at ±1.0 dB; HD 0.3% (at rated output); IM 1.0% (at rated output); hum & noise

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# 1

## Amplifiers

>—60 dB (at phono input); sensitivity: mag phono 1.6 mV; center channel output; headphone output; walnut leatherette case (\$9.00); 4" H x 14" W x 10½" D; \$199.95.

### SONY CORP. OF AMERICA

#### Model 2000F

Solid-state; preamp; 10-100,000 Hz response at —2.0 dB; HD 0.03%; IM 0.05%; hum & noise —90



dB (at phono input); sensitivities: mag phono 1.2 mV, aux 110 mV, hi-cut filter; lo-cut filter; ganged tone controls; headphone output; tape monitoring; microphone input on front panel; VU meters; 5¼" H x 15¼" W x 12¾" D; \$549.50.

#### TA-1010

Solid-state; integrated amp; 22 W/ch (dynamic) at 8 ohms; 10-80,000 Hz response at —3.0 dB;



HD 0.5% (at rated output); IM 1.0% (at rated output); hum & noise —90 dB (at phono input); sensitivities: mag phono 1.2 mV, aux 250 mV, tuner 250 mV, hi-cut filter; loudness compensation (switch); ganged tone controls; multiple speaker switching; headphone output; damping factor 25; tape monitoring; 4¾" H x 16¾" W x 9½" D; \$119.50.

#### TA-1130

Solid-state; integrated amp; 115 W/ch (dynamic) at 4 ohms; 7-30,000 Hz power bandwidth; 10-200,000 Hz response at —2.0 dB; HD 0.1% (at rated output); IM 0.1% (at rated output); hum & noise —110 dB (at phono input); sensitivities: mag phono 1.2 mV, aux 130 mV, tuner 130 mV,

tape 130 mV; hi-cut filter; lo-cut filter; loudness compensation (switch); ganged stepped tone controls; multiple speaker switching; headphone output; damping factor 100; tape monitoring; 5¾" H x 15¾" W x 12¾" D; \$359.50.

#### TA-1144

Solid-state; integrated amp; 50 W/ch (dynamic) at 8 ohms; 10-100,000 Hz response at —2.0 dB;



HD 0.2% (at rated output); IM 0.2% (at rated output); hum & noise —90 dB (at phono input); sensitivities: mag phono 1.2 mV, aux 150 mV, tuner 150 mV, tape 150 mV; hi-cut filter; lo-cut filter; loudness compensation (switch); independent tone controls; multiple speaker switching; headphone output; damping factor 70; tape monitoring; 5¼" H x 16¾" W x 12¾" D; \$219.50.

#### TA-3130

Solid-state; power amp; 70 W/ch (rms) at 8 ohms; 7-30,000 Hz power bandwidth; 10-200,000 Hz response at —2.0 dB; HD 0.1% (at rated output); IM 0.1% (at rated output); hum & noise —110 dB (at rated output); damping factor 200; level input adjustment; 5¾" H x 12¼" W x 7¾" D; \$239.50.

#### TA-3200F

Solid-state; power amp; 160 W/ch (dynamic) at 8 ohms; 5-35,000 Hz power bandwidth;



5-200,000 Hz response at —2.0 dB; HD 0.1% (at rated output); IM 0.1% (at rated output); hum & noise —110 dB (at rated output); multiple speaker switching; damping factor 170; level input adjustment; 5¾" H x 15¼" W x 12¾" D; \$349.50.

### STANDARD RADIO CORP.

#### PM-403U

Solid-state; integrated amp; 20 W/ch (dynamic)

at 8 ohms; 30-30,000 Hz power bandwidth; 20-40,000 Hz response (no reference stated); hum & noise —60 dB (at phono input); sensitivities: mag phono 2.5 mV, ceramic phono



150 mV, aux 100 mV, tuner 100 mV, tape 200 mV; loudness compensation (switch); ganged tone controls; multiple speaker switching; headphone jack output; tape monitoring facilities; over-all dimensions 3¼" H x 13¾" W x 7¾" D; \$94.95.

### TEAC CORP. OF AMERICA

#### AE-201

Solid-state; power amp; 50 W/ch (dynamic) at 8 ohms; 10-90,000 Hz response at —1.0 dB;



HD<0.1% (at rated output); IM<0.2% (at 40 W output); sensitivity: 0.1 V for rated output; 5¼" H x 8¼" W x 13" D; \$199.50.

#### AS-201

Solid-state; integrated amp; 60 W/ch (dynamic) at 4 ohms; 20-30,000 Hz power bandwidth;



30-30,000 Hz response at —2.0 dB; HD<0.5% (at rated output); IM<0.5% (at 40 W output); hum & noise —70 dB (at phono input); sensitivities: mag phono 2.0 mV, aux 130 mV, tuner 130 mV, tape 130 mV; hi-cut filter; lo-cut filter; loudness compensation (switch); ganged stepped tone controls; multiple speaker switching; headphone output; tape monitoring; 6" H x 16¾" W x 11¾" D; \$349.50.

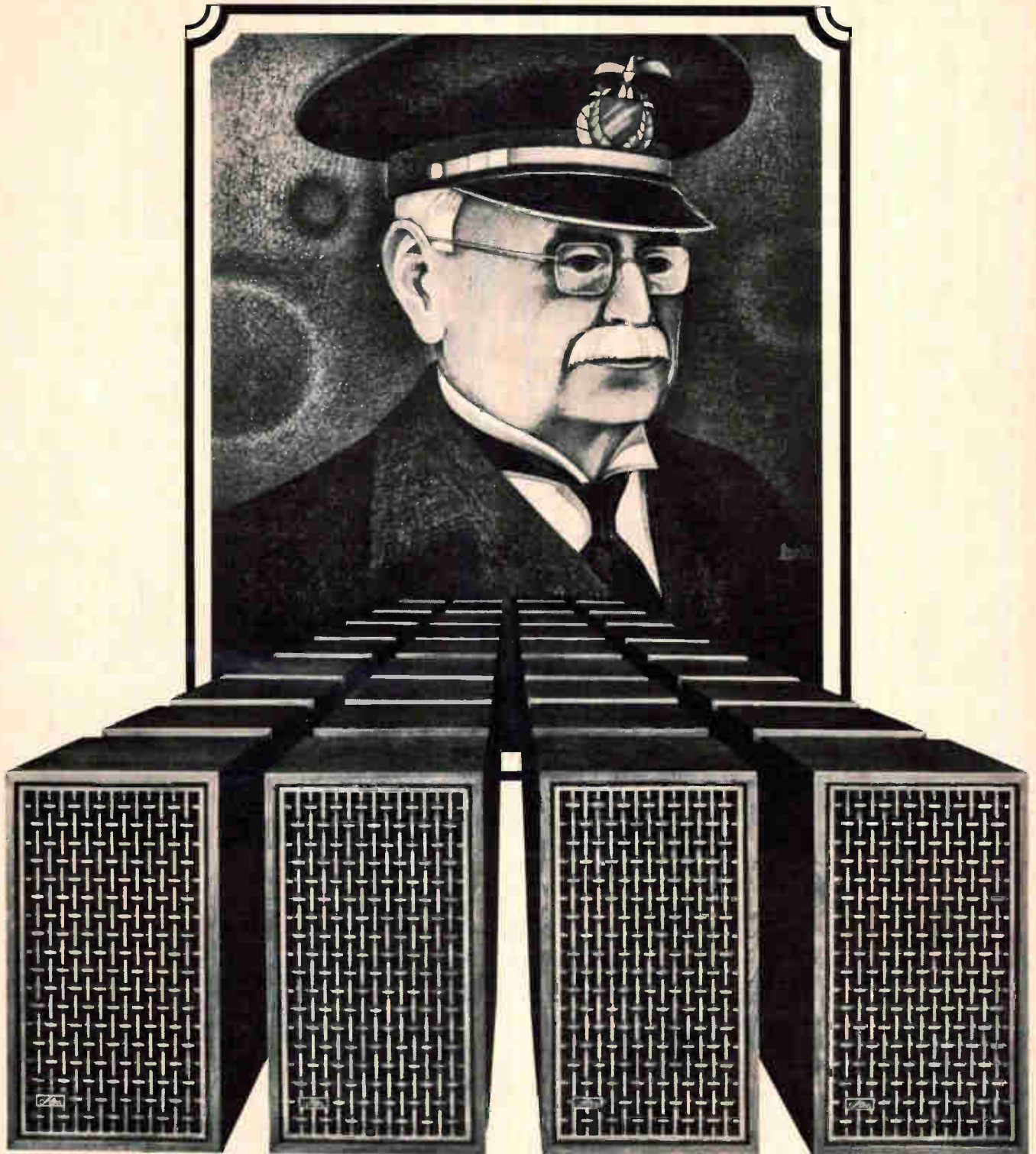
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We would also like to point out that almost all manufacturers' and distributors' prices are subject to change without notice.

# Sousa lives in the new Altec Segovia



If you're going to listen to Sousa, it should sound like Sousa. Oom-pa, oom-pa, oom-pa-pa. It should be so real that you can reach over and nudge the tuba player when he gets out of step.

The new Altec Segovia is the first bookshelf speaker system that lets you hear every sound clearly and distinctly and naturally. Oom-pa. From bass drum to triangle. There's nothing added and there's nothing taken out. Oom-pa. All you hear is what Sousa wanted you to hear. Oom-pa-pa.

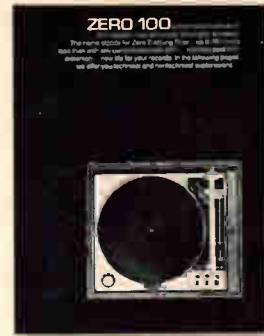
Ask your dealer to put on some Sousa when you listen to the new Altec Segovia speaker system. You've never heard him so good.



The new Altec Dynamic Force Segovia sells for \$250.00. It's the culmination of years of building professional sound equipment and working with room acoustics and equalization while developing the proven Altec Acousta-Voicette Stereo Equalizer. Hear it at your local Altec dealer today. He's in the Yellow Pages under "High Fidelity & Stereo Sound Equipment" under Altec Lansing.

**ZERO 100** is the newest, most advanced automatic turntable. The name stands for Zero Tracking Error—up to 160 times less than with any conventional tone arm—new freedom from distortion—new life for your records. This revolutionary Garrard unit, priced at \$189.50, was recently introduced with a special presentation booklet. There are 12 explanatory pages, with clear illustrations and diagrams, valuable to anyone interested in fine record playing equipment. We'll be glad to send you a copy. We'll also include two full-color comparator guides, showing all the Garrard models, and a list of recommended dealers. The coupon is for your convenience.

CUT OUT AND MAIL



British Industries Company  
Dept. J91  
Westbury, N. Y. 11590

Gentlemen: Please send me the Garrard Zero 100 presentation booklet, comparator guides, and list of dealers.

Name \_\_\_\_\_

Address \_\_\_\_\_

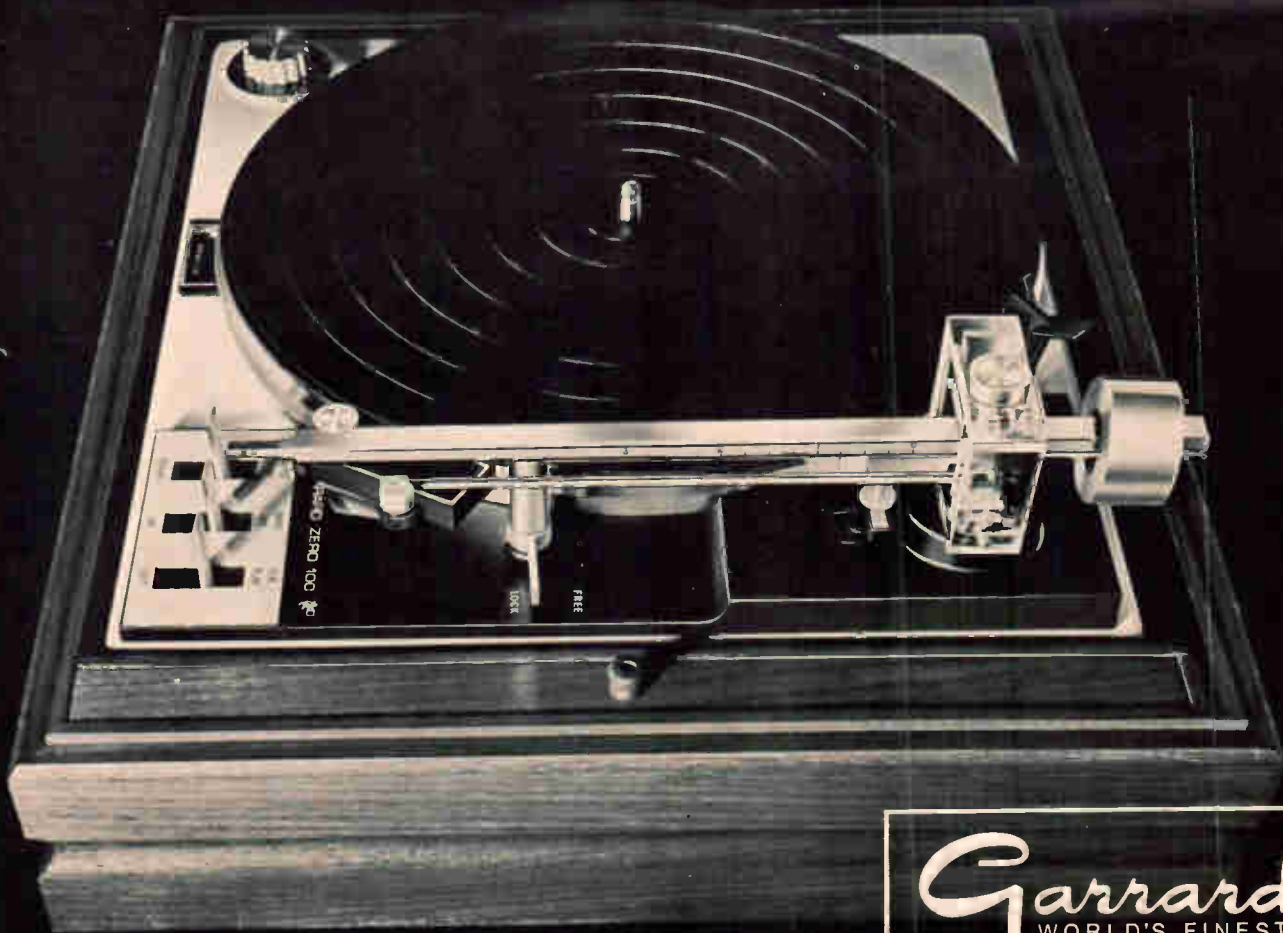
City \_\_\_\_\_

State \_\_\_\_\_

Zip \_\_\_\_\_

British Industries Company, a division of Avnet, Inc.

CIRCLE NO. 14 ON READER SERVICE CARD



**Garrard**<sup>®</sup>  
WORLD'S FINEST

Mfg. by Plessey Ltd.  
Dist. by British Industries Co.



# 2

# Changers & Turntables

## Record Changers, Automatic Turntables, Manual Turntables

**T**HE basic—and still most popular—source of high-fidelity music in the home is the phonograph record. The record player, therefore, is a key component of most stereo systems. Whether automatic or manual, all record players have the same function: to turn the disc at a constant, correct speed, without short-term fluctuations ("flutter") or mechanical vibration ("rumble"). The tonearm—an integral part of a record changer and inseparably associated with single-play turntables—must support a phono cartridge as it traverses the record, always tangent to the groove, and with the correct tracking force exerted on both walls of the groove. In addition, a record changer must automatically play a number of records in sequence and shut itself off at the end of play.

Vibration from the motor or other moving parts which reaches the phono stylus is heard as a low pitched "rumble" from the speakers. Some turntables use special low-speed motors to confine rumble to sub-audible frequencies. A few high-priced single-play turntables use electronic drive systems, which reduce both rumble and flutter to insignificant levels. Excessive flutter can impose a roughness or loss of clarity in the program. In record players, low-frequency flutter is more prevalent, producing the audible effect known as "wow." Heavier rotating platters, all else being equal, reduce wow and flutter, but there are some well-designed lightweight turntables that can hold their own with the heavyweights in this respect.

The tracking error—departure from tangency with the groove—of the cartridge cannot be eliminated with a conventional arm pivoted at one end. By proper design (and precise positioning of the arm and cartridge relative to the turntable) it can be reduced to negligible proportions, less than 0.5 degree per inch of record radius. One new record changer features a novel articulated tonearm that reduces tracking error to unmeasurably low values. Another solution to this problem, applicable only to manual players, is the linear tonearm, which moves so as to maintain essentially zero tracking error over the entire record surface.

Inherent in every arm having an angular cartridge offset (which includes all arms except the linear types) is the "skating effect." Produced by friction between the stylus and the record groove, it causes the pickup stylus to exert unequal forces against the two groove walls.

When playing a heavily recorded groove at the lowest possible cartridge-tracking force, the skating effect can cause distortion in one channel before it occurs in the other channel. While an increase in total tracking force could correct the situation, numerous arms, manual or automatic, incorporate anti-skating compensation. By applying an equal and opposite force to the pickup, the skating force is cancelled and optimum performance is obtained at the lowest possible tracking force.

Most tonearms having a cueing feature in the form of a lever that gently raises and lowers the pickup without changing its position on the record. These devices vary widely in their smoothness and freedom from lateral shift, but except for those in some very-low-priced record players, their performance is generally quite satisfactory.

Some turntables and record changers have variable speeds, adjustable over a range of a few percent, so that records can be played at exactly 33 $\frac{1}{3}$  or 45 rpm. A stroboscopic disc (built into the better turntables) is necessary to set the speed exactly. There is a current trend toward two-speed turntables operating at only 33 $\frac{1}{3}$  and 45 rpm (which are only speeds that have been used in recording for many years). Many record changers, and some turntables still offer the additional speeds of 16 $\frac{2}{3}$  and 78 rpm, but these features are of little value unless you have an extensive library of 78 rpm records.

On some of the higher-priced record changers, the cartridge can be tilted vertically to make it parallel to a single record or to the center record of a stack in automatic play. On one model, the same effect is achieved by raising and lowering the entire arm. Other refinements in the top-price brackets include very-low-friction arm pivots (necessary when a cartridge is operated with a tracking force as low as 1 gram) and accurately calibrated tracking-force scales.

From a practical standpoint, most record changers selling for \$100 or more are capable of meeting the most exacting high-fidelity performance standards. There are several single-play turntables, combined with manual tonearms, priced from about \$80 and up, which are equally satisfactory. The highest priced record players, either manual or automatic, offer the ultimate refinement of performance (at a considerable cost premium in many cases), together with potentially greater reliability and the assurance that they will not be obsoleted by future developments in low-tracking-force cartridges.

JULIAN D. HIRSCH

### ACOUSTIC RESEARCH, INC.

#### AR Turntable

Two speeds (33 $\frac{1}{3}$  & 45); with tone arm; synchronous motor; belt drive; manual only; 3.3 lb platter weight; removable cartridge shell; 5 $\frac{1}{4}$ " H



x 16 $\frac{3}{4}$ " W x 12 $\frac{3}{4}$ " D; with base; dust cover; \$87.00 (single speed; 33 $\frac{1}{3}$ ; \$84.00)

### ALLIED RADIO SHACK

#### Realistic LAB-36A

Three speeds (33%, 45 & 78); with tonearm; 1972 EDITION

anti-skating; 4-pole motor; manual/changer combo; 0→6 g stylus pressure adjustment; removable cartridge clip (with Shure cartridge); 6 $\frac{1}{2}$ " H x 15 $\frac{1}{4}$ " W x 13 $\frac{3}{4}$ " D; with base; \$79.50.

#### Realistic Miracord 40A

Three speeds (33 $\frac{1}{3}$ , 45 & 78); with tonearm; manual/changer combo; cueing control; removable cartridge shell (with Shure cartridge); 4 $\frac{1}{2}$ " H x 16 $\frac{3}{4}$ " W x 14 $\frac{1}{2}$ " D; with base; \$119.95.

#### Realistic Miracord 45

Four speeds (16 $\frac{2}{3}$ , 33 $\frac{1}{3}$ , 45 & 78); with tonearm; anti-skating; manual/changer combo; cueing control; removable cartridge shell (with Shure cartridge); with base; \$149.95.

### BELL & HOWELL CO.

#### Model 3875

Four speeds (16 $\frac{2}{3}$ , 33 $\frac{1}{3}$ , 45 & 78); with tonearm; anti-skating; 4-pole motor; manual/changer combo; cueing control; fixed shell ceramic cartridge; 8 $\frac{1}{2}$ " H x 15 $\frac{1}{2}$ " W x 15 $\frac{1}{2}$ " D; with base; \$59.95.

### BOGEN DIV.

(Lear Siegler, Inc.)

#### Model B-111

Two speeds (33 $\frac{1}{3}$  & 45); with tonearm; anti-skating; 4-pole motor; belt drive; manual only;



<0.1% wow & flutter; removable cartridge shell; dust cover, with cartridge; 6 $\frac{1}{2}$ " H x 17 $\frac{1}{2}$ " W x 13 $\frac{1}{2}$ " D; with base; \$99.95.

# 2

## Changers & Turntables

### BSR McDONALD (BSR—USA—Ltd.)

#### Model 610

Four speeds (16%, 33%, 45 & 78); with tonearm; anti-skating; synchronous motor; manual/



changer combo; record repeat; cueing control; .10% wow & flutter; 0→6 g stylus pressure adjustment; 3½ lb platter weight; removable cartridge shell; -38 dB rumble; 7¼" H x 15¼" W x 14¼" D; with base; \$141.95.

#### Model 810

Two speeds (33% & 45); with tonearm; anti-skating; synchronous motor; manual/changer combo; direct drive; record repeat; cueing control; pitch control; 0→6 g stylus pressure adjustment; 7½ lb platter weight; removable cartridge shell; without base; \$149.50. (Model 810X is similar, but with walnut base; dust cover; Shure M-91E cartridge; \$239.45)

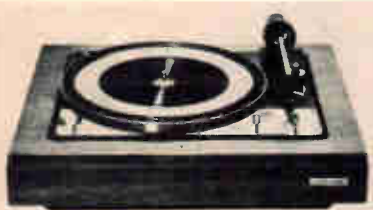
### DUAL (United Audio Products, Inc.)

#### Model 1215

Three speeds (33%, 45 & 78); with tonearm; anti-skating; 4-pole motor; manual/changer combo; cueing control; pitch control; 3½ lb platter weight; removable cartridge shell; 7¼" H x 12¼" W x 10¼" D; without base (\$10.95); \$99.50.

#### Model 1218

Three speeds (33%, 45 & 78); with tonearm; anti-skating; synchronous motor; manual/



changer combo; cueing control; tracking angle adjustment; pitch control; 4 lb platter weight; removable cartridge shell; 7¼" H x 13" W x 10¼" D; without base (\$10.95); \$139.50.

#### Model 1219

Three speeds (33%, 45 & 78); with tonearm; anti-skating; synchronous motor; manual/changer combo; cueing control; 15° tracking



angle; pitch control; 7.0 lb platter weight, removable cartridge shell; overhang adjustment; 8" H x 14¼" W x 12" D; without base (base/dust cover \$39.95); \$175.00.

#### Model CS16

Similar to Model 1215, but with base and dust cover; cartridge included; all variable settings set at factory; \$119.50.

### EMPIRE SCIENTIFIC CORP.

#### Troubadour Model 598

Three speeds (33%, 45 & 78); with tonearm; anti-skating; hysteresis motor; belt drive; manual only; cueing control; 0.01% wow & flutter; 0→4 g stylus pressure adjustment; removable cartridge



shell; -90 dB rumble; 11¼" H x 16" W x 15¼" D; without base (base and cover \$34.95); \$199.95.

### GARRARD (British Industries Co.)

#### Model 30

Four speeds (16%, 33%, 45 & 78); with tonearm; 4-pole motor; manual/changer combo;



direct drive; removable cartridge clip; 7¼" H x 14¾" W x 12¼" D; without base (\$14.95); \$39.50.

#### Model 40B

Similar to Model SL55B, but without anti-skating; without base (\$14.95); \$44.50.

#### Model SLX-2

Three speeds (33%, 45 & 78); with tonearm; synchronous motor; belt drive; manual/changer



combo; record repeat; cueing control; fixed shell with cartridge; 8" H x 16" W x 15¼" D; with base and dust cover; \$69.50.

#### Model SLX-3

Similar to Model SL72B, but with cartridge, base and dust cover; \$99.50.

#### Model SL95B

Three speeds (33%, 45 & 78); with tonearm; anti-skating; synchronous motor; belt drive; manual/changer combo; direct drive; cueing control; 0→5 g stylus pressure adjustment; removable cartridge clip; 7¼" H x 15¼" W x 14¼" D; without base (\$15.95); \$139.50.

#### Model SP20B

Four speeds (16%, 33%, 45 & 78); with tonearm; 4-pole motor; manual only; direct drive;



removable cartridge clip; 5¼" H x 14¾" W x 12¼" D; without base (\$14.95); \$37.50.

#### Model SL55B

Similar to Model SL65B, but with fixed position counterweight on tonearm and modified pivot assembly; without base (\$14.95); \$59.50.

#### Model SL65B

Three speeds (33%, 45 & 78); with tonearm; anti-skating; synchronous motor; belt drive;



manual/changer combo; cueing control; removable cartridge clip; 7¼" H x 15" W x 13¼" D; without base (\$14.95); \$74.50.

#### Model SL72B

Similar in many respects to Model SL95B, but with one-piece hexagonal tonearm (instead of Afrosia wood) and slightly smaller diameter platter; without base; \$99.50.

#### Zero 100

Two speeds (33% & 45); with tonearm; anti-skating; synchronous motor; manual/changer combo; direct drive; cueing control; tracking angle adjustment; pitch control; 0→3 g stylus pressure adjustment; removable cartridge shell; overhang adjustment; 7¼" H x 15¼" W x 14¼" D; without base (\$15.95); \$189.50.

### JVC AMERICA, INC.

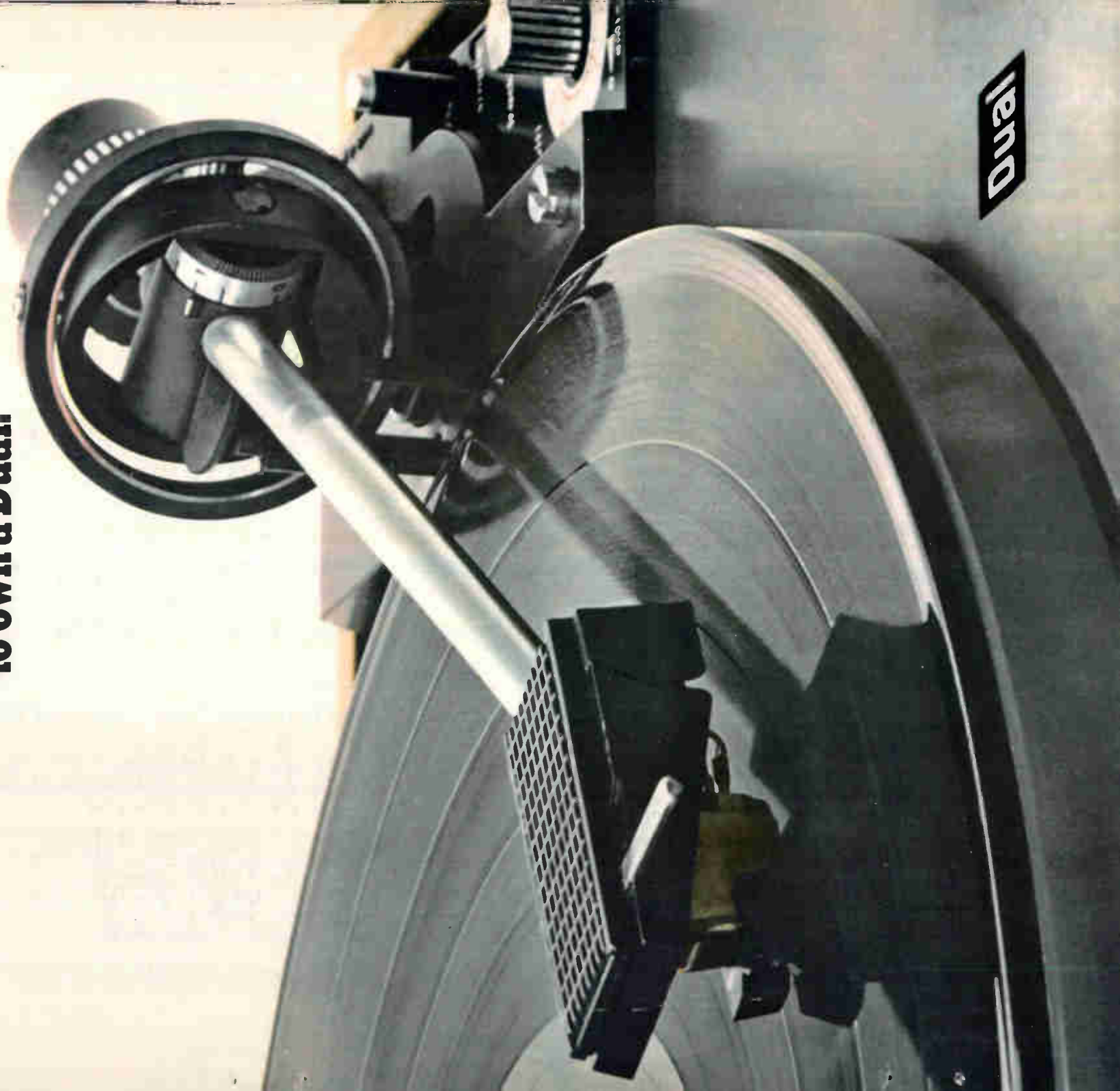
(Subs. of Victor Co. of Japan, Ltd.)

#### Model 5202

Four speeds (16%, 33%, 45 & 78); with tonearm; outer rotor motor; manual/changer combo; direct drive; cueing control; <0.1% wow & flutter; 2.5 g stylus pressure; fixed shell with cartridge; -45 dB rumble; 7¼" H x 16¾" W x 14¼" D; with base and dust cover; \$79.95.

CIRCLE NO. 22 ON READER SERVICE CARD →

**Every record you buy is one more reason  
to own a Dual.**





## The 1218: It will probably become the most popular turntable Dual has ever made.

There's a lot of the 1219 in the new 1218, bringing even more Dual precision to the medium-price range. Most notable of these features is the twin-ring gimbal of the tonearm suspension. The 1218's motor also combines high starting torque with synchronous-speed constancy.

Anti-skating scales are separately calibrated for conical and elliptical styli, thus assuring equal tracking force on each wall of the groove. (When Dual first introduced this feature, we said it provided "more precision than you may ever need." With four-channel records on the way,

such precision is no longer a luxury.

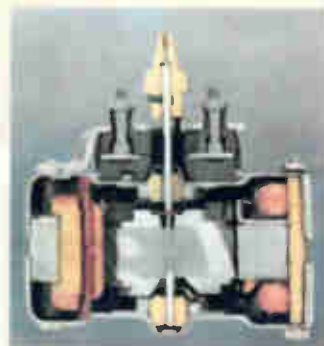
Perfect vertical tracking in the single-play mode is provided by the Tracking Angle Selector, designed into the cartridge housing.

Other 1218 features: Vernier counterbalance with click-stops. Feather touch cue-control with silicone damping. Single-play spindle rotates with platter to prevent center-hole enlargement. Pitch-control for all three speeds. One-piece cast platter weighs 4 lbs. Will track at as low as 0.5 gram. Chassis dimensions less than 11" x 13". \$139.50.





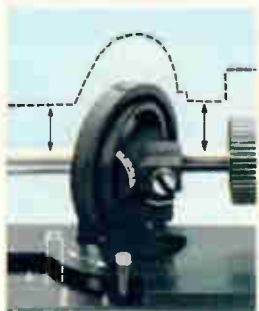
Unique gyrosopic gimbal suspension centers and balances tonearm within two concentric rings. All four pivots have identical low-friction, hardened steel-point bearings. Vertical friction less than 0.007 gram, horizontal friction less than 0.015 gram.



The 1219's powerful continuous-pole/synchronous motor easily brings massive 7 lb. platter to full speed in less than a half turn. 1218 has similar motor for its 4 lb. platter. Both motors maintain precise speed independently of line voltage.



Anti-skating control is calibrated separately for elliptical and conical styli. (Each skates differently.)



Mode Selector of 1219 provides perfect 15° vertical tracking in single-play mode by lowering entire tonearm base to parallel tonearm to record. Base lifts to parallel tonearm at center of stack in multiple-play.



Feathertouch cue-control is silicone-damped for ultra-slow descent. In 1219, ascent is also damped to prevent bounce.

1219 tonearm is 8 $\frac{3}{4}$ " from pivot to stylus, virtually eliminating tracking error while maintaining one-piece stability. 1218 tonearm is only  $\frac{1}{2}$ " shorter.



Tracking Angle Selector of 1218 provides perfect vertical tracking in single play and at center of stack in multiple play. Selector knob is designed into cartridge housing.



## The 1219: For the purists who insist upon a full-size professional turntable.

Ever since its introduction, the 1219 has been widely acclaimed as the "no-compromise" turntable. Although measuring less than 15" x 12", the 1219 offers a full-size, dynamically balanced platter that weighs 7 lbs.

The gimbal-mounted tonearm is 8 $\frac{3}{4}$ " long from pivot to stylus tip. This unusual length, combined with correct engineering geometry, reduces horizontal tracking error to the vanishing point while maintaining one-piece stability.

Further, the highly sophisticated Mode Selector achieves perfect 15° tracking in single play by shifting the entire tonearm base—down for single play, up for multiple play. Maximum vertical tracking error in multiple play is only 1.5°.

Other major features of the 1219 include: powerful continuous-pole/synchronous motor, cue-control damped in both directions, and pitch-control. Will track at as low as 0.25 gram. \$175.00.



Your records probably represent the biggest single investment you have in your entire component system. And the most vulnerable.

It's important to know that your records can remain as good as new for years, or begin to wear the very first time you play them. And since your collection may be worth hundreds or even thousands of dollars, you don't want to worry every time you play a record.

#### **How to protect your investment.**

The turntable is where it all happens. It's the one component that actually contacts your records and tracks their impressionable grooves with the unyielding hardness of a diamond. If the tonearm performs the way it should, your records can last a lifetime.

The tonearm must apply just the right amount of pressure to the stylus, keep this pressure equal on both walls of the groove, and follow the stylus without resistance as the groove spirals inward.

Then the stylus will be able to respond freely to all the twists and turns in the record groove, without digging in or chopping away. And your records will sound brand new every time you play them.

#### **How Dual does it.**

Dual turntables are designed with great ingenuity and engineered to perfection. In every aspect of performance.

For example, the tonearms of the 1218 and 1219 pivot exactly like a gyroscope: up

and down within one ring, left and right within another. This system is called a gimbal, and no other automatic arms have it.

Both these models also provide perfect 15° tracking in single play and virtually perfect tracking throughout multiple play.

#### **The professionals' choice.**

Your favorite record reviewer probably owns a Dual. So do most other high fidelity professionals, such as audio engineers, hi-fi editors and hi-fi salesmen.

It's their business to know every type of equipment available, and they have easy access to whatever they need or want for their own system.

For many years, their personal choice in record playback equipment has been Dual. Not only for the way Duals get the most out of records (without taking anything away) but for their ruggedness and simplicity of operation.

#### **Which Dual for you?**

It's not an easy decision to make. There's such a wealth of precision built into every Dual that even the testing labs can measure only small differences in performance among them.

Even our lowest priced turntable, the 1215, boasts features every turntable should have, and few do. The 1218 and 1219 have even more features and refinements. All three models are described on the following pages.

If this brochure doesn't help you decide which one is best for you, perhaps a visit to your dealer will.



## **The 1215: The choice of many professionals, even though the least expensive Dual.**

At \$99.50, we don't suggest that the 1215 is a low-cost turntable. However, despite this modest price, it provides the precision engineering, reliable operation and special features that the most critical users insist upon.

The low-mass tonearm tracks flawlessly at as low as 0.75 gram, and gets the most out of high compliance cartridges. Among the 1215's many features are: Vernier-adjust damped

counterbalance, tracking force and anti-skating applied simultaneously by a single control, feather-touch cueing, hi-torque constant-speed motor, 3¾ lb. platter and interchangeable multiple-play spindle that holds up to six records.

Like all Duals, the 1215 also provides a pitch-control that lets you match the pitch of recorded music to live musical instruments or compensate for off-pitch records. \$99.50.



**Dual**

United Audio Products, Inc., 120 So. Columbus Ave., Mt. Vernon, N.Y. 10553

**Model 5250**

Two speeds (33 $\frac{1}{3}$  & 45); with tonearm; anti-skating; d.c. servo motor; belt drive; manual/changer combo; cueing control; pitch control;



<0.05% wow and flutter; removable cartridge shell; 7 $\frac{1}{4}$ " H x 19 $\frac{1}{2}$ " W x 15 $\frac{1}{2}$ " D; with base and dust cover; \$199.95.

**MICOTRON****Model 19-250**

Two speeds (33 $\frac{1}{3}$  & 45); with tonearm; 4-pole motor; belt drive; single record only; cueing control; 0.08% wow & flutter; removable cartridge shell; with cartridge; 7" H x 18 $\frac{3}{4}$ " W x 16" D; with base and dust cover; \$149.95.

**MIRACORD**

(Benjamin Electronic Sound Corp.)

**Model 50H**

Four speeds (16%, 33 $\frac{1}{3}$ , 45 & 78); with tonearm; anti-skating; hysteresis motor; manual/changer combo; cueing control; 0.06% wow & flutter; 0→6 $\frac{1}{2}$  g stylus pressure adjustment; removable cartridge shell; overhang adjustment; -40 dB rumble; 9 $\frac{3}{4}$ " H x 14 $\frac{1}{16}$ " W x 12 $\frac{3}{16}$ " D; without base (molded base \$5.95); \$169.50.

**Model 650**

Four speeds (16%, 33 $\frac{1}{3}$ , 45 & 78); with tonearm; anti-skating; 4-pole motor; manual/changer combo; cueing control; 0.07% wow; 0→6 $\frac{1}{2}$  g stylus pressure adjustment; removable cartridge shell; -38 dB rumble; 8 $\frac{1}{4}$ " H x 13 $\frac{5}{8}$ " W x 11 $\frac{1}{8}$ " D; without base (molded base \$5.95); \$99.95.

**Model 660H**

Four speeds (16%, 33 $\frac{1}{3}$ , 45 & 78); with tonearm; anti-skating; hysteresis motor; manual/changer combo; cueing control; 0→6 $\frac{1}{2}$  g stylus pressure adjustment; removable cartridge shell; overhang adjustment; without base (molded base \$5.95); \$139.50.

**Model 750**

Four speeds (16%, 33 $\frac{1}{3}$ , 45 & 78); with tonearm; anti-skating device; 4-pole motor; manual/changer combo; cueing control; 0.06% wow; 0→6 $\frac{1}{2}$  g stylus pressure adjustment; removable cartridge shell; -40 dB rumble; 9 $\frac{3}{4}$ " H x 14 $\frac{1}{16}$ " W x 12 $\frac{3}{16}$ " D; without base (molded base \$5.95); \$139.50.

**Model 770H**

Three speeds (33 $\frac{1}{3}$ , 45 & 78); with tonearm; including anti-skating device; hysteresis motor;



manual/changer combo; variable speed; cueing control; tracking angle adjustment; 0.05% wow; 0→6 $\frac{1}{2}$  g stylus pressure adjustment; removable cartridge shell; overhang adjustment; elapsed time indicator; -42 dB rumble; 9 $\frac{3}{4}$ " H x 14 $\frac{1}{8}$ " W x 12 $\frac{3}{16}$ " D; molded base \$5.95. \$225.00.

1972 EDITION

**NORELCO**

(North American Philips Corp.)

**Model 202**

Three speeds (33 $\frac{1}{3}$ , 45 & 78); with tonearm; anti-skating; d.c. servo motor; belt drive; manual only; cueing control; pitch control; 0.06% wow & flutter;  $\frac{1}{2}$ →4 g stylus pressure adjustment; 2 $\frac{1}{2}$  lb platter weight; removable cartridge shell; -36 dB rumble; 5 $\frac{1}{8}$ " H x 15 $\frac{1}{2}$ " W x 14 $\frac{1}{4}$ " D; with base; \$129.50.

**PANASONIC**

(Matsushita Electric Corp. of America)

**SP-10**

Two speeds (33 $\frac{1}{3}$  & 45); without tonearm; d.c.



servo motor; direct drive; pitch control; 0.03% wow & flutter; 6 lb platter weight; -60 dB rumble; over-all dimensions 4" H x 14" W x 14" D; \$299.95.

**PERPETUUM-EBNER**

(Elpa Marketing Industries, Inc.)

**PE-2010**

Four speeds (16%, 33 $\frac{1}{3}$ , 45 & 78); with tonearm; 4-pole motor; manual/changer combo; record repeat;  $\pm$ 0.17% wow & flutter; 2→6 g stylus pressure adjustment; 2 $\frac{1}{2}$  lb platter weight; removable cartridge shell; -37 dB rumble; over-all size 9 $\frac{3}{4}$ " H x 13" W x 11" D; without base (\$9.00); \$80.00.

**PE-2038**

Three speeds (33 $\frac{1}{3}$ , 45 & 78); with tonearm; anti-skating; 4-pole motor; manual/changer combo; direct drive; record repeat; cueing control; tracking angle adjustment; pitch control;  $\pm$ 0.15% wow & flutter; 0→6.0 g stylus pressure adjustment; 4.4 lb platter weight; removable cartridge shell; -38 dB rumble; 9 $\frac{3}{4}$ " H x 13" W x 11" D; without base (\$9.00); \$125.00 (Model PE-2035 is similar, but without tracking angle adjustment; \$99.95).

**PE-2040**

Similar to Model PE-2038, but with -43 dB



rumble; 7.1 lb platter;  $\pm$ 0.1% wow & flutter; \$155.00.

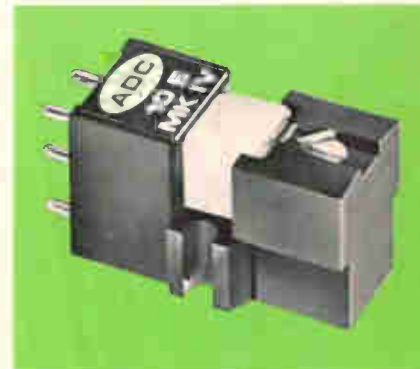
**PIONEER**

(U.S. Pioneer Electronics Corp.)

**PL-12A**

Two speeds (33 $\frac{1}{3}$  & 45); with tonearm; anti-skating; synchronous motor; belt drive; manual only; <0.12% wow & flutter; fixed shell with induced magnet cartridge; -45 dB rumble; 6" H x 17" W x 13 $\frac{1}{2}$ " D; with base and dust cover; \$89.95.

# NOW— THE ADC 10E MK IV



The latest version of the famous ADC 10E is better than ever, for it incorporates many of the refinements found in the acclaimed ADC 25 and 26. It takes full advantage of ADC's unique induced magnet system, where the heavy moving magnet found in most other high fidelity cartridges is replaced by a hollow tube weighing at least 60% less.

This arrangement also allows the generating system to be placed close to the stylus tip, thus virtually eliminating losses and resonances introduced by a long cantilever.

Coupled with the economies inherent in Audio Dynamics' latest manufacturing techniques, these features make the new 10E MK IV probably the finest value in high performance cartridges available today.

**10E MK IV SPECIFICATIONS**

Type . . . Induced Magnet  
Sensitivity . . . 4 mv at 5.5 cms/sec.  
recorded velocity  
Tracking Force . . . 0.7 grams  
Frequency  
Response . . . 10 Hz to 20 kHz  $\pm$  2 db  
Channel  
Separation . . . 30 db from 50 Hz to 12 kHz  
Compliance . . . 35 x 10<sup>-6</sup> cms/dyne  
Vertical Tracking  
Angle . . . 15 degrees  
Recommended Load  
Impedance . . . 47,000 ohms (nominal)  
Suggested Retail Price . . . \$50.00



# AUDIO FOR AUDIOPHILES

CIRCLE NO. 5 ON READER SERVICE CARD

# 2

## Changers & Turntables

### PL-41D

Two speeds (33 $\frac{1}{3}$  & 45); with tonearm; anti-skating; hysteresis motor; belt drive; <0.07%



wow & flutter; fixed shell with induced magnet cartridge; 7 $\frac{1}{8}$ " H x 19 $\frac{1}{8}$ " W x 17 $\frac{1}{8}$ " D; with base and dust cover; \$220.00.

### RABCO

### ST-4

Two speeds (33 $\frac{1}{3}$  & 45); with tonearm; synchronous motor; belt drive; manual only; removable cartridge shell; integrated turntable and



servo-driven tonearm mechanism to maintain correct tangent to record; -60 dB rumble; 6" H x 18" W x 15 $\frac{1}{2}$ " D; with base; \$159.00.

### REK-O-KUT (CCA Electronics Corp.)

### Model B-12H

Three speeds (33 $\frac{1}{3}$ , 45 & 78); without tonearm; hysteresis motor; direct drive; 0.09% wow &



flutter; -62 dB rumble; 5 $\frac{1}{8}$ " H x 15 $\frac{1}{8}$ " W x 14" D; without base (\$24.95); \$179.50.

### CVS-12

Variable speed (25-100 rpm); without tonearm; 4-pole motor; direct drive; 0.09% wow & flutter; -35 dB rumble; 5" H x 15" W x 16" D; without base; \$169.50.

### SANSUI ELECTRONICS CORP.

### SR-1050E

Two speeds (33 $\frac{1}{3}$  & 45); with tonearm; anti-skating; synchronous motor; belt drive; manual

only; cueing control; <0.07% wow & flutter; 2 $\frac{1}{2}$  lb platter weight; removable cartridge shell; >-40 dB rumble; 7 $\frac{1}{2}$ " H x 17 $\frac{1}{8}$ " W x 13 $\frac{1}{8}$ " D; with base; \$119.95.

### SR-2050E

Two speeds (33 $\frac{1}{3}$  & 45); with tonearm; anti-skating; synchronous motor; belt drive; manual



only; auto lift; cueing control; <0.07% wow & flutter; 3 lb platter weight; removable cartridge shell; >-40 dB rumble; 7 $\frac{1}{2}$ " H x 17 $\frac{1}{8}$ " W x 13 $\frac{1}{8}$ " D; with base; \$149.95.

### SHERWOOD ELECTRONIC LABS, INC.

### SEL 100

Two speeds (33 $\frac{1}{3}$  & 45); with tonearm; anti-skating; two synchronous motors; belt drive; manual/changer combo; cueing control;  $\frac{1}{2}$ -4 g stylus pressure adjustment; photoelectric end-of-record tonearm tripping; removable cartridge shell; -52 dB rumble; 5 $\frac{1}{2}$ " H x 17" W x 13" D; without base; \$155.00.

### SONY CORP. OF AMERICA

### PS-1800A

Two speeds (33 $\frac{1}{3}$  & 45); with tonearm; anti-skating; synchronous motor; belt drive; manual



only; auto shutoff; cueing control; pitch control; 0.08% wow & flutter; removable cartridge shell; -41 dB rumble; 7" H x 19 $\frac{1}{8}$ " W x 16 $\frac{1}{4}$ " D; with base; \$199.50.

### TTS-3000A

Two speeds (33 $\frac{1}{3}$  & 45); without tonearm; d.c. servo motor; belt drive; manual only; pitch control; 0.05% wow & flutter; -47 dB rumble; 6 $\frac{1}{2}$ " H x 15" W x 14 $\frac{1}{4}$ " D; without base; \$149.50.

### THORENS (Elpa Marketing Industries, Inc.)

### TD-150MkII

Two speeds (33 $\frac{1}{3}$  & 45); with tonearm; synchronous motor; manual only; direct drive; cueing control;  $\pm$ 0.09% wow & flutter;  $\frac{1}{2}$ -3 $\frac{1}{2}$  g stylus pressure adjustment; 7 lb platter weight; removable cartridge shell; -43 dB rumble; 7 $\frac{1}{2}$ " H x 15 $\frac{1}{8}$ " W x 12 $\frac{3}{8}$ " D; with base; \$140.00.

### TD-125B

Three speeds (33 $\frac{1}{3}$ , 45 & 78); without tonearm; synchronous motor; belt drive; manual only; solid-state electronic pitch control; 0.08% wow & flutter; 8 lb platter weight; -48 dB rumble; 5" H x 18" W x 14" D; with base (also available



with Ortofon tonearm as Model TD-125AB-\$310.00); \$230.00.

### TOSHIBA AMERICA, INC.

### Model SR-40E

Two speeds (33 $\frac{1}{3}$  & 45); with tonearm; anti-skating; hysteresis motor; belt drive; manual only; cueing control; 0.1% wow & flutter; 1 $\frac{1}{2}$ -2 $\frac{1}{2}$  g stylus pressure adjustment; 2 lb platter weight; fixed shell with high compliance ceramic cartridge and built-in IC amplifier; -45 dB rumble; 7 $\frac{1}{4}$ " H x 18 $\frac{1}{8}$ " W x 15 $\frac{1}{8}$ " D; with base; \$199.50.

### SR-50

Two speeds (33 $\frac{1}{3}$  & 45); with tonearm; anti-skating; d.c. servo motor; belt drive; auto stop/



rise; cueing control; 0.08% wow & flutter; 0-3 g stylus pressure adjustment; 2 lb platter weight; fixed shell with photoelectric cartridge and FET rumble filter; -55 dB rumble; 7 $\frac{1}{2}$ " H x 22 $\frac{1}{8}$ " W x 15 $\frac{1}{8}$ " D; with base; \$449.50.

### V-M CORP.

### Model 1542

Four speeds (16 $\frac{2}{3}$ , 33 $\frac{1}{3}$ , 45 & 78); with tonearm; manual/changer combo; 0.28% wow & flutter; 6" H x 14 $\frac{1}{2}$ " W x 13 $\frac{1}{2}$ " D; with base and dust cover; \$105.00.

### Model 1555

Two speeds (33 $\frac{1}{3}$  & 45); with tonearm; synchronous motor; belt drive; manual/changer combo; cueing control; 0.15% wow & flutter; 1 $\frac{1}{2}$ -2 $\frac{1}{2}$  g stylus pressure adjustment; removable cartridge shell; supplied with Shure cartridge;



photoelectric end-of-record tonearm tripping; 6 $\frac{3}{8}$ " H x 19" W x 15" D; with base and dust cover; \$220.00.

### YAMAHA INTERNATIONAL CORP.

### YP-70

Two speeds (33 $\frac{1}{3}$  & 45); with tonearm; synchronous motor; belt drive; manual only; auto return; 0.08% wow & flutter; 0-5 g stylus pressure adjustment; removable cartridge shell; -46 dB rumble; 6 $\frac{1}{2}$ " H x 17 $\frac{1}{8}$ " W x 15 $\frac{1}{8}$ " D; \$209.00.



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**empire**

# The History Savers at work.



David Hall and Sam Sanders discuss a fine point.

Deep inside a building at New York's Lincoln Center for the Performing Arts, recorded history is being recorded again. At the Rodgers and Hammerstein Archives of Recorded Sound, technician Sam Sanders is busy continually transcribing all sorts of old recordings, transcriptions and acetates. Not only will there then be a more permanent record of this valuable material, but access to it is made easy through a sophisticated catalogue system, by which interested persons can hear material that was otherwise unavailable.

The Rodgers and Hammerstein Archives of Recorded Sound are part of the New York Public Library, Research Library of the Performing Arts, and encompass virtually the entire history of recorded sound. But to get these early (and often irreplaceable) discs onto tape wasn't easy. Because until the recording industry established its own standards, playing speeds, groove widths and depths were widely varied.

Stanton engineers worked closely with Archive Head David Hall and engineer Sam Sanders



when the Archive Preservation Laboratory was being set up. Standard Stanton 681 cartridge bodies were chosen for their superior reproduction characteristics. However, some 30 different stylus types had to be prepared to give the tape transfer operation the variety needed to match the various old groove specifications. Each was hand-made by Stanton engineers to fit a particular disc's requirements. So when Sam Sanders begins the careful disc-to-tape transfer, he must first match the stylus to the record. Both microscope and trial-and-error techniques must be often used together. But one of the special styli will enable every last bit of material to be extracted from these recorded rarities.

It goes without saying that a company willing to take such care in helping to preserve recorded history must also be interested in superior reproduction of today's high fidelity pressings. Which is one reason why Stanton cartridges remain the choice of professionals the world over.

For an informative brochure about our professional-quality cartridges, write to Stanton Magnetics, Inc., Terminal Drive, Plainview, N.Y. 11803.



# 3

## Cartridges & Tonearms

Moving Coil, Moving Iron, Photoelectric, Ceramic, Induced Magnet

**T**HE phono cartridge performs the almost incredible feat of converting the microscopic undulations of a record groove to a highly complex electrical signal corresponding to the original program information. Contact with the record is via two minute areas where a polished diamond stylus touches the walls of the "V" shaped groove. Distortion-free record reproduction requires that this contact be maintained at all times, as the stylus follows abrupt changes in the groove wall shape, at rates up to 20,000 times per second.

The tip of the stylus is a portion of a sphere, usually with a radius of 0.6 to 0.7 mil (thousandths of an inch). When the recording contains very-high-frequency, high-amplitude material, the dimensions of the groove modulation become equal to the stylus radius, and the stylus may not be able to trace the groove without distortion or damage to the record. A smaller stylus radius is not the answer, since it would not fit the "V" cross-section of the groove and would "rattle around" in its bottom.

One solution to the problem of tracing high frequency recorded wavelengths is the use of an elliptical, or bi-radial stylus. Across the groove width, the radius is 0.7 to 0.9 mil, which conforms to the groove dimensions. At right angles to this radius, the edges of the stylus have a smaller radius, from 0.2 to 0.4 mil, which is better able to trace the higher modulation frequencies.

Most manufacturers offer a line of cartridges with conical, or spherical, styli in the lower-priced models and elliptical styli in the more expensive cartridges. The higher price of an elliptical stylus cartridge is due to the greater care required in manufacturing the stylus and mounting the jewel.

To improve tracking ability some cartridges incorporate a forward angular component (standardized at 15°) which minimizes the vertical tracking error. Not all cartridges include the 15° feature and some manufacturers claim that angle achieves little or nothing, while other manufacturers say that the audible difference between cartridges with and those without is quite perceptible.

The mechanical coupling of the stylus to the voltage-generating elements of the cartridge (usually through a slim, hollow cantilever tube) has a profound affect on over-all performance. The tube must be rigid so as to transmit the stylus motion faithfully to the twin generating elements of a stereo cartridge, yet the entire moving structure must have very low mass to minimize high-frequency record wear.

An important stylus parameter is its compliance, which is a measure of the force needed to deflect the stylus a given amount (and, therefore, the force exerted on the groove wall and the tracking force needed to hold it in contact with the groove). Although compliance and tip mass are frequently stated in cartridge specifications, their numerical values are only incidentally important to the user. Their combined effect is expressed in the rated tracking force of the cartridge. A very compliant, low-mass cartridge can track at forces between 3/4 and 1 1/2 grams, while a relatively heavy, stiff stylus may require from 4 to 7 grams (although no good cartridge should require more than 3 grams' tracking force).

The actual voltage-generating system of the cartridge is of relatively minor importance to the user. Most high-quality cartridges are magnetic types, employing such diverse principles as moving coil, moving magnet, and induced magnet. No one system has a clear-cut superiority; the choice of a particular design is often based on patent and licensing considerations. For the same reason, different techniques such as photoelectric or strain-gage generators are sometimes used. Ceramic cartridges are relatively inexpensive, but cannot match the quality of the better magnetic types. A good ceramic cartridge would probably be better than a poor magnetic unit, but at present ceramic cartridges seem to be limited to use in low-quality, inexpensive-type phonographs.

In general, cartridges rated at low tracking forces deliver the best sound (and are correspondingly more expensive), although there are occasional exceptions to this rule. The cartridge should be compatible with the tonearm; a low-priced record changer requires a force of several grams to operate its trip mechanism and overcome bearing friction, so a high-compliance cartridge can rarely be used with it. Most cartridges deliver an electrical output compatible with the input requirements of most preamps or amplifiers. Some have higher-than-average output voltages and should not be used with an amplifier whose input stages are easily overloaded. Similarly, a low-output cartridge would not be suitable for use with an amplifier having low gain.

Published frequency response and stereo separation figures rarely indicate the listening quality of a cartridge. However, such figures do render a service to the consumer in providing a rough approximation of cartridge performance. Even among cartridges whose measured performance figures are almost identical, there can be audible, if sometimes subtle, quality differences.

JULIAN D. HIRSCH

### ADC

#### ADC 10E-MkII

Induced magnet; output 4.0 mV at 5.5 cm/sec; frequency response 10-20,000 Hz at  $\pm 2$  dB; stylus 0.3 x 0.7 mil elliptical; tracking force 1/2  $\rightarrow$  1 1/2 g; 15° tracking angle; channel separation nominally 30 dB from 50-12,000 Hz; compliance

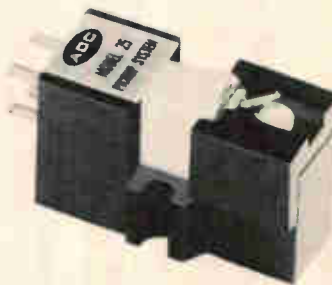


$35 \times 10^{-6}$  cm/dyne; stylus replacement #R-12/E; price \$59.50.

#### ADC 25

Induced magnet; output 4.0 mV at 5.5 cm/sec;

1972 EDITION



frequency response 10-24,000 Hz at  $\pm 2$  dB; three interchangeable styli assemblies—0.3 x 0.7 mil elliptical, 0.3 x 0.9 mil elliptical, and 0.6 mil spherical; tracking force 1/2  $\rightarrow$  1 1/4 g; 15° tracking angle; channel separation nominally 30 dB from 50-15,000 Hz; compliance  $50 \times 10^{-6}$  cm/dyne; IM distortion less than 1/2%; 400-4,000 Hz at 14.3 cm/sec; Price \$100.00.

#### ADC 27

Induced magnet; output 4.0 mV at 5.5 cm/sec; frequency response 10-22,000 Hz at  $\pm 2$  dB; stylus 0.3 x 0.7 mil elliptical; tracking force 1/2  $\rightarrow$  1 1/2 g; 15° tracking angle; channel separation nominally 30 dB from 50-15,000 Hz; compliance  $40 \times 10^{-6}$  cm/dyne; stylus replacement R-27; price \$65.00.

#### ADC 220XE

Induced magnet; output 6.0 mV at 5.5 cm/sec; frequency response 10-18,000 Hz at  $\pm 3$  dB; stylus 0.3 x 0.7 mil elliptical; tracking force 1  $\rightarrow$  2 1/2 g; 15° tracking angle; channel separation nominally 20 dB from 50-10,000 Hz; compliance  $20 \times 10^{-6}$  cm/dyne; stylus replacement #R-20XE; price \$22.00.

#### ADC 220X

Similar to ADC 220XE, but with 0.7 mil spherical stylus; stylus replacement #R-20X; price \$16.00.

#### ADC 550XE

Induced magnet; output 5.0 mV at 5.5 cm/sec;



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### 3 Phono Cartridges



frequency response 10-20,000 Hz at  $\pm 2.0$  dB; stylus  $0.3 \times 0.7$  mil elliptical; tracking force  $\frac{3}{4} \rightarrow 2$  g;  $15^\circ$  tracking angle; channel separation nominally 20 dB from 50-12,000 Hz; compliance  $35 \times 10^{-6}$  cm/dyne; stylus replacement #R-50XE; price \$50.00.

#### ADC 660XE

Similar to 550XE, but with  $30 \times 10^{-6}$  cm/dyne compliance; stylus replacement #R-60XE; price \$45.00.

#### ADC 990XE

Induced magnet; output 5.0 mV at 5.5 cm/sec; frequency response 10-20,000 Hz at  $\pm 3$  dB; stylus  $0.3 \times 0.7$  mil elliptical; tracking force  $1 \rightarrow 2$  g;  $15^\circ$  tracking angle; channel separation nominally 20 dB from 50-10,000 Hz; compliance  $25 \times 10^{-6}$  cm/dyne; stylus replacement #R-90XE; price \$30.00.

#### ADC 26

Similar to ADC 25, but with one  $0.3 \times 0.7$  mil elliptical stylus; stylus replacement #R-26; price \$75.00.

### BANG & OLUFSEN OF AMERICA

#### SP-10

Moving iron; output 1 mV/cm/sec; response  $15 \pm 25,000$  Hz at  $\pm 3.0$  dB; stylus 0.6 mil spherical; tracking force  $1 \rightarrow 1\frac{1}{2}$  g;  $15^\circ$  tracking angle; channel separation  $>25$  dB at 1000 Hz; compliance  $25 \times 10^{-6}$  cm/dyne; stylus replacement #5429; \$59.95.

#### SP-12

Moving iron; output 1.0 mV/cm/sec; response  $15-25,000$  Hz at  $\pm 3.0$  dB; stylus  $0.2 \times 0.7$  mil el-



llyptical; tracking force  $1 \rightarrow 1\frac{1}{2}$  g;  $15^\circ$  tracking angle; channel separation  $>25$  dB at 1000 Hz; compliance  $25 \times 10^{-6}$  cm/dyne; stylus replacement #5430; \$69.95.

#### SP-14

Moving iron; output 1.0 mV/cm/sec; response  $15-25,000$  Hz at  $\pm 4.0$  dB; stylus 0.6 mil spherical; tracking force  $1\frac{1}{2}$  g;  $15^\circ$  tracking angle; channel separation  $>20$  dB at 1000 Hz; compliance  $15 \times 10^{-6}$  cm/dyne; stylus replacement #5435; \$29.95.

### ELAC

(Benjamin Electronic Sound Corp.)

#### Model STS-244-17

Moving magnet; output 1.8 mV/cm/sec; fre-



quency response 20-20,000 Hz (reference not stated); stylus 0.7 mil spherical; tracking force  $1 \rightarrow 3$  g; channel separation nominally 22 dB at 1000 Hz; compliance  $18 \times 10^{-6}$  cm/dyne; (Model STS-244-E has  $0.2 \times 0.8$  mil elliptical stylus - \$35.00); price \$24.95.

#### Model STS-344-17

Moving magnet; output 1.1 mV/cm/sec; frequency response 10-22,000 Hz (reference not stated); stylus 0.7 mil spherical; tracking force  $1 \rightarrow 2$  g; channel separation nominally 24 dB at 1000 Hz; compliance  $25 \times 10^{-6}$  cm/dyne; (Model STS-344-E has  $0.2 \times 0.8$  mil elliptical stylus - \$60.00); price \$45.00.

#### Model STS-444-12

Moving magnet; output 1.1 mV/cm/sec; frequency response 20-22,000 Hz (reference not stated); stylus 0.5 mil spherical; tracking force  $\frac{3}{4} \rightarrow 1.5$  g; channel separation nominally 26 dB at 1000 Hz; compliance  $33 \times 10^{-6}$  cm/dyne; (Model STS-444-E has  $0.2 \times 0.8$  mil elliptical stylus - \$80.00); price \$65.00.

### ELECTRO-VOICE, INC.

#### V100

Moving magnet; output 4.8 mV at 3.54 cm/sec; frequency response 20-20,000 Hz (reference not stated); stylus 0.7 mil spherical; tracking force  $2\frac{1}{2} \rightarrow 4$  g;  $15^\circ$  tracking angle; channel separation better than 20 dB at 1000 Hz; stylus replacement # SV100; price \$9.95.

#### V110

Moving magnet; output 4.6 mV at 3.54 cm/sec; frequency response 15-25,000 Hz (reference not stated); stylus 0.7 mil spherical; tracking force  $2 \rightarrow 3$  g;  $15^\circ$  tracking angle; channel separation nominally 20 dB at 1000 Hz; stylus replacement # SV-110-7; price \$14.95.

#### V110E

Moving magnet; output 4.6 mV at 3.54 cm/sec; frequency response 15-28,000 Hz (reference not stated); stylus  $0.4 \times 0.7$  mil elliptical; tracking force  $2 \rightarrow 3$  g;  $15^\circ$  tracking angle; channel separation nominally 20 dB at 1000 Hz; stylus replacement # SV110; price \$19.95.

#### V120E

Moving magnet; output 4.5 mV at 3.54 cm/sec; frequency response 15-30,000 Hz (reference not stated); stylus  $0.4 \times 0.7$  mil elliptical; tracking force  $1\frac{1}{4} \rightarrow 2$  g;  $15^\circ$  tracking angle; channel separation nominally 22 dB at 1000 Hz; stylus replacement # SV120; price \$29.95.

#### V130E

Moving magnet; output 4.3 mV at 3.54 cm/sec; frequency response 10-30,000 Hz (reference not stated); stylus  $0.2 \times 0.7$  mil elliptical; tracking force  $1 \rightarrow 1\frac{1}{4}$  g;  $15^\circ$  tracking angle; channel separation nominally 25 dB at 1000 Hz; stylus replacement # SV130; Price \$49.95.

#### V140E

Moving magnet; output 4.2 mV at 3.54 cm/sec; frequency response 5-30,000 Hz (reference not

stated); stylus 0.2 x 0.7 mil elliptical; tracking force 3/4 → 1 1/2 g; 15° tracking angle; channel separation nominally 25 dB at 1000 Hz; stylus replacement # SV140; price \$69.95.

#### V150E

Moving magnet; output 4.0 mV at 3.54 cm/sec; frequency response 5-30,000 Hz (reference not stated); stylus 0.2 x 0.7 mil elliptical; tracking force 1/2 → 1 1/4 g; 15° tracking angle; channel separation better than 25 dB at 1000 Hz; stylus replacement # SV150; price \$100.00.

#### V200EL

Moving magnet; output 4.0 mV at 3.54 cm/sec; frequency response 5-35,000 Hz (reference not stated); stylus 0.2 x 0.7 mil elliptical; tracking force 1/2 → 1 1/4 g; 15° tracking angle; channel separation better than 25 dB at 1000 Hz; stylus replacement # SV200; price \$150.00.

### EMPIRE SCIENTIFIC CORP.

#### 90EE/X

Moving magnet; output 8.0 mV (velocity not stated); frequency response 15-25,000 Hz (reference not stated); stylus 0.4 x 0.7 mil elliptical; tracking force 1 1/2 → 4 g; 15° tracking angle; channel separation nominally 30 dB; compliance 10 x 10<sup>-6</sup> cm/dyne; stylus replacement # S90EE/X-ERD; price \$24.95.

#### 909/X

Moving magnet; output 8.0 mV (velocity not stated); frequency response 15-25,000 Hz (reference not stated); stylus 0.4 x 0.7 mil elliptical; tracking force 1 → 4 g; 15° tracking angle; channel separation nominally 30 dB; compliance 15 x 10<sup>-6</sup> cm/dyne; stylus replacement # S909/X-RD; price \$24.95.

#### 909E/X

Similar to 909/X, but with 0.4 x 0.7 mil elliptical stylus and 12-25,000 Hz response; stylus replacement # S909E/X-ERD; price \$29.95.

#### 999SE/X

Moving magnet; output 8.0 mV (velocity not stated); frequency response 8-32,000 Hz (reference not stated); stylus 0.2 x 0.7 mil elliptical; tracking force 1/2 → 1 1/2 g; 15° tracking angle; channel separation nominally 35 dB; compliance 30 x 10<sup>-6</sup> cm/dyne; stylus replacement # S999SE/X-ERD; price \$49.95.

#### 999VE/X

Similar to 1000ZE/X, but response 6-36,000 Hz;



output 6.0 mV and tracking force 1/2 → 1 1/2 g; stylus replacement # S999VE/X-ERD; price 79.95.

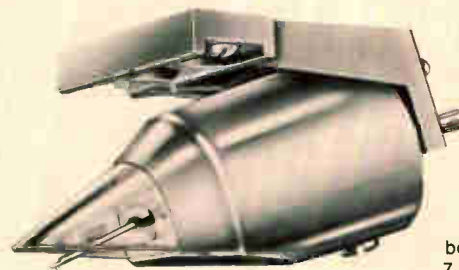
#### 1000ZE/X

Moving magnet; output 5.0 mV (velocity not



# We asked 30 F.M. station engineers\* what they thought of the Bang & Olufsen SP-12 cartridge

## Here's what they said:



#### WVCG/WYOR Coral Gables, Fla.

... this excellent cartridge is ideally suited for professional applications. SP-12 would be a good choice for the new quad-4 channel-stereo discs.

#### WKJF-FM Pittsburgh, Pa.

Tracking so far, has been excellent. SP-12 has been used "on air" 7 hours a day since received and not stuck or skipped yet.

#### KBAY San Jose, Cal.

Up 'til now the Shure V-15 type II has been our favorite for critical listening. After installing the B & O cartridge in the shell the Shure cartridge was in, we've left it there. It sounds great!

Exceptionally clean, undistorted, pure sound. One London Phase Four recording in particular has always broken up during a highly modulated passage, we assumed the record was over-modulated, until we played it using the B & O cartridge.

#### K-BUC San Antonio, Texas

The cartridge is without a doubt the "Rolls Royce" of the broadcasting industry!

#### KMND Mesa, Ariz.

If there could be any comment at all, it would have to be that the cartridge seemed to display a very smooth and pleasing sound. The very flat and very clean, clear and brilliant response. The separation is very good and both channels are quite consistent on response.

#### WEMP Milwaukee, Wis.

We appreciate the wide-range response without the harsh "edge" that so many cartridges add to the sound.

#### KDIG La Jolla, Calif.

An excellent cartridge, none better on the market today.

\*Write for a report of  
FM Station Engineer  
Evaluation



## Bang & Olufsen of America, Inc.

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# 3

## Phono Cartridges

stated); frequency response 4-40,000 Hz (reference not stated); stylus 0.2 x 0.7 mil elliptical; tracking force 1/4 → 1 1/4 g; 15° tracking angle; channel separation nominally 35 dB; compliance 35 x 10<sup>-6</sup> cm/dyne; stylus replacement # S1000ZE/X-ERD; price \$99.95.

### 999TE/X

Moving magnet; output 6 mV (velocity not stated); response 6-32,000 Hz (reference not stated); stylus 0.2 x 0.7 mil elliptical; tracking force 1/2 → 1 1/2 g; channel separation >30 dB; stylus replacement #S999TE/X-ERD; \$64.95.

### EUPHONICS CORP.

#### Model U-15-P

Strain gauge; frequency response 20-20,000 Hz at ±2 dB; stylus 0.5 mil spherical; tracking force 1.5 → 3.0 g; 15° tracking angle; channel separation nominally 25 dB at 1000 Hz; compliance 15 x 10<sup>-6</sup> cm/dyne; requires 12-volt dc power supply (\$19.00); price \$24.50.

#### Model U-15-LS

Strain gauge; frequency response 20-20,000 Hz at ±2 dB; stylus 0.3 x 0.7 mil elliptical;

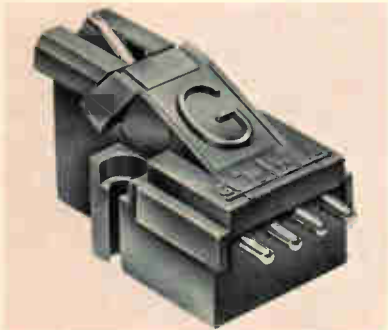


tracking force 1.0 → 2.0 g; 15° tracking angle; channel separation nominally 30 dB at 1000 Hz; compliance 25 x 10<sup>-6</sup> cm/dyne; requires 12-volt dc power supply (\$19.00); price \$36.00.

### GRADO LABORATORIES, INC.

#### F1

Moving iron; output 2.0 mV; frequency response 7-60,000 Hz (±2 dB 10-35,000 Hz);



special stylus with 0.3-mil spherical tip contacting groove walls; tracking force 0.7 → 2.0 g; channel separation nominally 35 dB at 1000 Hz; stylus replacement # F1/S; price \$75.00.

#### F2

Similar to F1, but with 0.3 x 0.6 mil elliptical stylus; stylus replacement # F2/S; price \$60.00.

#### F3-E

Similar to F2, but with 4.0 mV output; stylus replacement # F3-E/S; price \$49.50.

#### FCE

Moving iron; output 6.5 mV; frequency re-

sponse 10-30,000 Hz at ±2 dB; 0.3 x 0.7 mil elliptical stylus; tracking force 1.5 → 3.5 g; channel separation nominally 25 dB at 1000 Hz; stylus replacement # FCE/S; price \$35.00.

#### FCR

Similar to FCE, but with 0.6 mil spherical stylus; stylus replacement # FCR/S; price \$25.00.

#### FTE and FTR

Inexpensive versions of the FCE and FCR, respectively; prices \$19.95 and \$9.95, respectively.

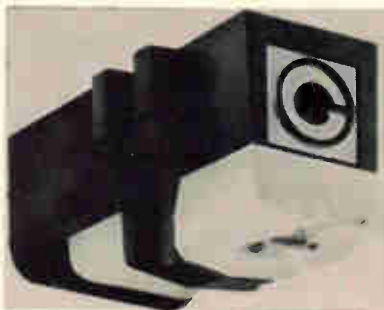
### IMF PRODUCTS

#### Goldring 800

Induced magnet; output 5 mV at 5 cm/sec; response 20-20,000 Hz (reference not stated); stylus 0.5 mil spherical; tracking force 1 1/2 → 3 g; channel separation nominally 20 dB at 1000 Hz; compliance 20 x 10<sup>-6</sup> cm/dyne; \$19.95.

#### Goldring 800E

Induced magnet; output 5 mV at 5 cm/sec; response 10-23,000 Hz (reference not stated);



stylus 0.3 x 0.7 mil elliptical; tracking force 3/4 → 1 1/2 g; channel separation nominally 20 dB at 1000 Hz; compliance 30 x 10<sup>-6</sup> cm/dyne; \$39.95.

#### Goldring 800 Super E

Induced magnet; output 4.0 mV at 5 cm/sec; response 10-23,000 Hz at ±3.0 dB; stylus 0.3 x 0.7 mil elliptical; tracking force 3/4 → 1.5g; 15° tracking angle; channel separation nominally 25 dB at 1000 Hz; compliance 35 x 10<sup>-6</sup> cm/dyne; \$69.50.

#### Goldring 850

Induced magnet; output 8 mV at 5 cm/sec; response 20-18,000 Hz (reference not stated); stylus 0.7 mil spherical; tracking force 1 1/2 → 4 g; channel separation nominally 20 dB at 1000 Hz; compliance 15 x 10<sup>-6</sup> cm/dyne; \$9.95.

### NORELCO

(North American Philips Corp.)

#### Philips 400

Moving coil; supplied with individually calibrated response curve; stylus 0.6 mil spherical; tracking force 1 1/2 → 3 g; channel separation better than 20 dB; compliance 20 x 10<sup>-6</sup> cm/dyne; \$39.95.

#### Philips 412

Moving coil; output 6 mV at 3.54 cm/sec; supplied with individually calibrated response curve; stylus 0.3 x 0.7 mil elliptical; tracking force 3/4 → 1 1/2 g; 15° tracking angle; compliance 30 x 10<sup>-6</sup> cm/dyne; \$69.50.

### ORTOFON

(Elpa Marketing Industries, Inc.)

#### Model S-15T

Moving coil; output 2.0 mV/cm/sec; response 15-40,000 Hz at ±2.0 dB; stylus 0.3 x 0.7 mil elliptical; tracking force 1 → 2 g; 15° tracking angle; channel separation better than 20 dB;



compliance 20 x 10<sup>-6</sup> cm/dyne; built-in matching transformer; \$80.00.

#### Model SL-15T

Moving coil; response 10-40,000 Hz (reference not stated); stylus 0.3 x 0.7 mil elliptical; tracking force 3/4 → 1 1/2g; channel separation better than 20 dB; compliance 25 x 10<sup>-6</sup> cm/dyne; built-in matching transformer; \$105.00.

### PICKERING AND COMPANY, INC.

#### V-15 Phase IV AC

Output 8.0 mV at 5.5 cm/sec; frequency response 20-17,000 Hz (reference not stated); stylus 1.0 mil spherical; tracking force 3 → 7 g; channel separation nominally 26 dB; special feature: Dustamatic brush; stylus replacement # DIV-AC; price \$24.95.

#### V-15 Phase IV ACE

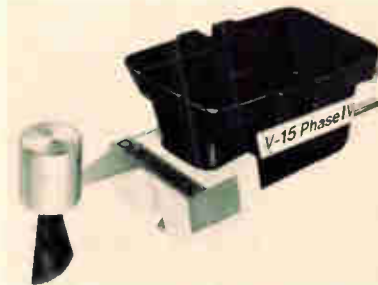
Output 8.0 mV at 5.5 cm/sec; frequency response 20-17,000 Hz (reference not stated); stylus 0.4 x 0.7 mil elliptical; tracking force 3 → 5 g; channel separation nominally 26 dB; special feature: Dustamatic brush; stylus replacement # DIV-ACE; price \$29.95.

#### V-15 Phase IV AM

Output 6.0 mV at 5.5 cm/sec; frequency response 20-20,000 Hz (reference not stated); stylus 0.7 mil spherical; tracking force 1 → 3 g; channel separation nominally 30 dB; special feature: Dustamatic brush; stylus replacement # DIV-AM; price \$34.95.

#### V-15 Phase IV AME

Output 5.5 mV at 5.5 cm/sec; frequency response 20-20,000 Hz (reference not stated);



stylus 0.3 x 0.7 mil elliptical; tracking force 3/4 → 1 1/4 g; channel separation nominally 30 dB; special feature: Dustamatic brush, stylus replacement # DIV-AME; price \$49.95.

#### V-15 Phase IV AT

Output 8.0 mV at 5.5 cm/sec; frequency response 20-18,000 Hz (reference not stated); stylus 0.7 mil spherical; tracking force 2 → 4 g; channel separation nominally 28 dB; special feature: Dustamatic brush; stylus replacement # DIV-AT; price \$29.95.

#### V-15 Phase IV ATE

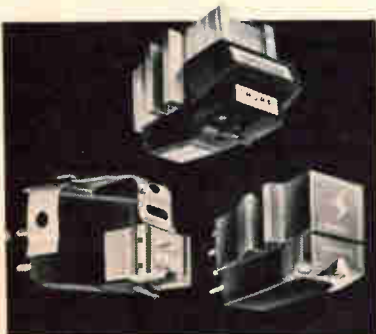
Output 6.5 mV at 5.5 cm/sec; frequency response 20-18,000 Hz (reference not stated); stylus 0.4 x 0.7 mil elliptical; tracking force 2 → 4 g; channel separation nominally 28 dB; special feature: Dustamatic brush; stylus replacement # DIV-ATE; price \$39.95.

#### XV-15/100

Output 8.0 mV at 5.5 cm/sec; frequency response 10-20,000 Hz (reference not stated); stylus 0.7 mil spherical; tracking force 3 → 7 g;



## To each his own.



Not everybody needs a concert grand piano, nor does everybody need the best cartridge Shure makes to enjoy his kind of music on his kind of hi-fi system. Eventually, you'll want the renowned *V-15 Type II Improved*, the peerless cartridge for advanced systems and ample budgets. But, if your exchequer is a little tight, consider the *M91E*, widely acclaimed as the *second best* cartridge in the world. With a sharply circumscribed budget, all is far from lost. Choose any of the four models in the *M44 Series*, built for optimum performance in the easy-to-take \$18-25 price range. Write for a complete catalog:

Shure Brothers Inc.,  
222 Hartrey Ave., Evanston, Illinois 60204.



**SHURE**

# 3

## Phono Cartridges

channel separation nominally 35 dB; special feature: Dustamatic brush; stylus replacement # D100; price \$29.95.

### XV-15/140E

Output 8.0 mV at 5.5 cm/sec; frequency response 10-20,000 Hz (reference not stated); stylus 0.4 x 0.7 mil elliptical; tracking force 3 → 5 g; channel separation nominally 35 dB; special feature: Dustamatic brush; stylus replacement # D140; price \$34.95.

### XV-15/150

Output 8.0 mV at 5.5 cm/sec; frequency response 10-25,000 Hz (reference not stated); stylus 0.7 mil spherical; tracking force 2 → 4 g; channel separation nominally 35 dB; special feature: Dustamatic brush; stylus replacement # D150; price \$34.95.

### XV-15/200E

Output 8.0 mV at 5.5 cm/sec; frequency response 10-25,000 Hz (reference not stated); stylus 0.4 x 0.7 mil elliptical; tracking force 2 → 4 g; channel separation nominally 35 dB; special feature: Dustamatic brush; stylus replacement # D200; price \$49.95.

### XV-15/350

Output 6.0 mV at 5.5 cm/sec; frequency response 10-25,000 Hz (reference not stated); stylus 0.7 mil spherical; tracking force 1 → 3 g; channel separation nominally 35 dB; special feature: Dustamatic brush; stylus replacement # D350; price \$39.95.

### XV-15/400E

Output 5.5 mV at 5.5 cm/sec; frequency response 10-25,000 Hz (reference not stated);



stylus 0.3 x 0.7 mil elliptical; tracking force 1 → 2 g; channel separation nominally 35 dB; special feature: Dustamatic brush; stylus replacement # D400; price \$54.95.

### XV-15/750E

Output 4.4 mV at 5.5 cm/sec; frequency response 10-25,000 Hz (reference not stated); stylus 0.2 x 0.7 mil elliptical; tracking force 1/2 → 1 1/2 g; channel separation nominally 35 dB; special feature: Dustamatic brush; stylus replacement # D750; price \$65.00.

## SHURE BROTHERS, INC.

### Model M3D

Moving magnet; output 5.0 mV at 5 cm/sec; frequency response 20-15,000 Hz (reference not stated); stylus 0.7 mil spherical; tracking force 3 → 6 g; stylus replacement # N3D; price \$15.75.

### Model M7/N21D

Moving magnet; output 4.0 mV at 5 cm/sec; frequency response 20-20,000 Hz (reference not stated); stylus 0.7 mil spherical; tracking force <2 1/2 g; compliance 9 x 10<sup>-6</sup> cm/dyne; stylus replacement # N21D; price \$17.95.

### Model M31E

Moving magnet; output 10 mV at 5 cm/sec; frequency response 20-18,500 Hz (reference not stated); stylus 0.2 x 0.7 mil elliptical; tracking force 1 → 2 g; channel separation better

than 25 dB at 1000 Hz; compliance 15 x 10<sup>-6</sup> cm/dyne; stylus replacement # N31E; price \$29.95.

### Model M32E

Moving magnet; output 9 mV at 5 cm/sec; frequency response 20-17,500 Hz (reference not stated); stylus 0.4 x 0.7 mil elliptical; tracking force 2 1/2 → 5 g; channel separation better than 25 dB at 1000 Hz; compliance 10 x 10<sup>-6</sup> cm/dyne; stylus replacement # N32E; price \$29.50.

### Model M44E

Moving magnet; output 1.8 mV/cm/sec; frequency response 20-20,000 Hz (reference not stated); stylus 0.4 x 0.7 mil elliptical; tracking force 1 3/4 → 4 g; 15° tracking angle; channel separation better than 25 dB at 1000 Hz; compliance 15 x 10<sup>-6</sup> cm/dyne; stylus replacement # N44E; price \$24.95.

### Model M55E

Moving magnet; output 6.6 mV at 5 cm/sec; frequency response 20-20,000 Hz (reference not stated); stylus 0.2 x 0.7 mil elliptical; tracking force 3/4 → 2 g; 15° tracking angle; channel separation nominally 25 dB at 1000 Hz; compliance 25 x 10<sup>-6</sup> cm/dyne; stylus replacement # N55E; price \$29.95.

### Model M75E

Moving magnet; output 6.2 mV at 5 cm/sec; frequency response 20-20,000 Hz (reference not stated); stylus 0.2 x 0.7 mil elliptical; tracking force 3/4 → 1 1/2 g; channel separation better than 25 dB at 1000 Hz; (available with 0.7 mil spherical stylus as M75-6 for \$24.50); stylus replacement # N75E; price \$39.95.

### Model M91E

Moving magnet; output 5.0 mV at 5 cm/sec; frequency response 20-20,000 Hz (reference not stated); stylus 0.2 x 0.7 mil elliptical; tracking force 3/4 → 1 1/2 g; channel separation better than 25 dB at 1000 Hz; will track 18 cm/sec at 10,000 Hz; stylus replacement # N91E; price \$49.95.

### Model M92E

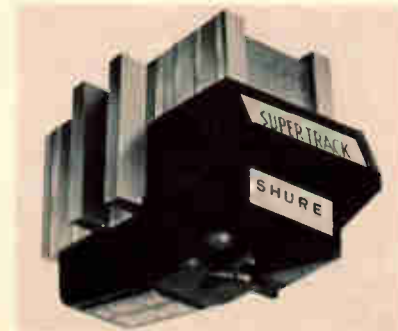
Moving magnet; output 6.2 mV at 5 cm/sec; frequency response 20-20,000 Hz (reference not stated); stylus 0.2 x 0.7 mil elliptical; tracking force 3/4 → 1 1/2 g; channel separation better than 25 dB at 1000 Hz; will track 15 cm/sec at 10,000 Hz; stylus replacement # N92E; price \$44.95.

### Model M93E

Moving magnet; output 6.2 mV at 5 cm/sec; frequency response 20-20,000 Hz (reference not stated); stylus 0.4 x 0.7 mil elliptical; tracking force 1 1/2 → 3 g; channel separation better than 25 dB at 1000 Hz; will track 13 cm/sec at 10,000 Hz; stylus replacement # N93E; price \$39.95.

### Model V-15 Type II

Moving magnet; output 3.5 mV at 5 cm/sec;



frequency response 20-25,000 Hz (reference not stated); stylus 0.2 x 0.7 mil elliptical; tracking force 3/4 → 1 1/2 g; channel separation better than 25 dB at 1000 Hz; will track 25 cm/sec at 1000 Hz (available with 0.7 mil spherical stylus

as V-15II-7 for \$62.50); stylus replacement # VN15E; price \$67.50.

## STANTON MAGNETICS INC.

### 500A

Output 1.0 mV/cm/sec at ±2 dB; frequency response 10-20,000 Hz at +2.0 dB; stylus 0.7 mil spherical; tracking force 2 → 5 g; channel separation nominally 35 dB; stylus replacement # D5107A; price \$30.00.

### 500 AA

Output 1.0 mV/cm/sec at ±2 dB; frequency response 10-20,000 Hz at +2 dB; stylus 0.5 mil spherical; tracking force 1 → 2 1/2 g; channel separation nominally 35 dB; stylus replacement # D5105AA; price \$35.00.

### 500 AL

Output 1.0 mV/cm/sec at ±2 dB; frequency response 20-17,000 Hz at ±2.5 dB; stylus 0.7



mil spherical; tracking force 3 → 7 g; channel separation nominally 28 dB; stylus replacement # D5107AL; price \$30.00.

### 500E

Output 1.0 mV/cm/sec at ±2 dB; frequency response 10-20,000 Hz at ±2 dB; stylus 0.4 x 0.8 mil elliptical; tracking force 2 → 5 g; channel separation nominally 35 dB; stylus replacement # D5100E; price \$35.00.

### 500 EE

Output 1.0 mV/cm/sec at ±2 dB; frequency response 10-20,000 Hz at ±3 dB; stylus 0.3 x 0.7 mil elliptical; tracking force 1 → 2 g; channel separation nominally 35 dB; stylus replacement # D5100EE; price \$40.00.

### 681A

Output 1.1 mV/cm/sec at ±2 dB; frequency response 10-10,000 Hz at ±0.5 dB; stylus 0.7 mil spherical; tracking force 1 1/2 → 3 g; channel separation nominally 35 dB; special feature: individually calibrated at factory; stylus replacement # D6807A; price \$66.00.

### 681EE

Output 0.82 mV/cm/sec at ±2 dB; frequency response 10-10,000 Hz at ±0.5 dB; stylus 0.2 x



0.7 mil elliptical; tracking force 3/4 → 1 1/2 g; channel separation nominally 35 dB; special feature: individually calibrated at factory; stylus replacement # D6800EE; price \$72.00.

### 681 SE

Output 1.1 mV/cm/sec at ±2 dB; frequency response 20-10,000 Hz at ±0.5 dB; stylus 0.4 x 0.8 mil elliptical; tracking force 2 → 4 g; channel separation nominally 35 dB; special feature: individually calibrated at factory; stylus replacement # D6800SE; price \$66.00.



# 3

## Tonearms

### EMPIRE SCIENTIFIC CORP.

#### Model 990

Maximum arm length 12 $\frac{3}{8}$ "; removable cartridge clip; ball bearing races; anti-skating; end-



of-record arm lift; vertical angle tracking adjustment; arm rest; adjustable counterweight; 0→4 g stylus pressure adjustment; 6 Hz arm resonance; static balance; gold; \$74.95.

#### ORTOFON

(Elpa Marketing Industries, Inc.)

#### Model RMG-309

Maximum arm length 16"; removable shell; arm rest; adjustable counterweight; static balance; \$75.00.

#### Model RS-212

Maximum arm length 11 $\frac{3}{4}$ "; removable shell; anti-skating; arm rest; adjustable counterweight; 0→4 $\frac{1}{2}$  g stylus pressure adjustment; \$90.00.

#### RABCO

#### Model SL-8E

Precision servo straight-line tracking; removable shell; adjustable counterweight;  $\frac{1}{4}$  g stylus pressure minimum; \$169.50.

#### REK-O-KUT

(CCA Electronics Corp.)

#### Model S-320

Maximum arm length 12"; removable shell; ball bearing races; arm rest; adjustable counterweight; 9-12 Hz arm resonance; static balance; dynamic lateral balance; \$49.50.

### SHURE BROTHERS, INC.

#### Model M232

Maximum arm length 12"; removable shell; arm rest; adjustable counterweight; 1→8 g stylus pressure adjustment; overhang adjustment; static balance; \$32.75, a 16" version is available as Model M236—\$35.00.

#### Model SME-3009

Maximum arm length 12"; removable shell, ball bearing races; anti-skating; arm rest; adjustable counterweight; cueing control;  $\frac{1}{4}$ →5 g stylus pressure adjustment; overhang adjustment; \$117.50, a 16" version is available as Model SME 3012—\$128.00.

### SONY CORP. OF AMERICA

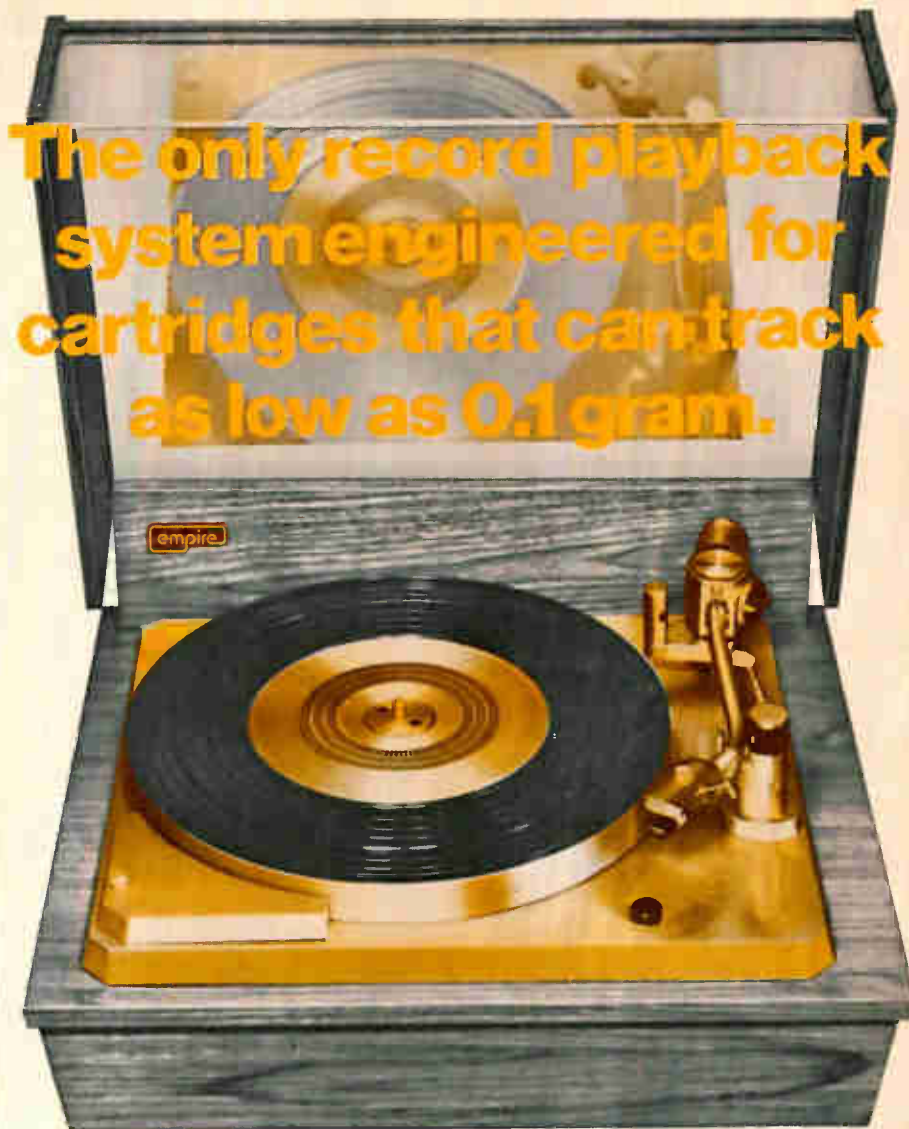
#### Model PUA-237

Maximum arm length 13 $\frac{3}{8}$ "; removable cartridge clip; ball bearing races; anti-skating; arm rest; adjustable counterweight; cueing control; 8 Hz arm resonance; static balance; \$85.00.

#### Model PUA-286

Maximum arm length 15 $\frac{3}{8}$ "; removable cartridge clip; ball bearing races; anti-skating; arm rest; adjustable counterweight; cueing control; 9 Hz arm resonance; static balance; \$99.50.

1972 EDITION



The only record playback system engineered for cartridges that can track as low as 0.1 gram.

## World famous Troubador model 598 features:

- Empire 990—world's most perfectly balanced playback arm.
  - Sealed instrument ball-bearings for horizontal as well as vertical motion. Arm friction measures a minute 1 milligram.
  - Stylus force dialed with a calibrated clock mainspring—more accurate than any commercially available pressure gauge.
  - No acoustic feedback when you turn up the gain or bass.
  - World's finest turntable motor-hysteresis synchronous type maintains speed accuracy with zero error.
  - Precision ground flexible belt drive, 12-inch turntable platter and 4-inch thick balanced drive flywheel.
  - Lowest rumble of any turntable tested.
  - Exclusive pneumatic suspension. Lets you dance, jump or rock without bouncing the stylus off the record.
  - Dead-center cueing control. Tone arm floats down or lifts up from a record surface bathed in light, for exact band selection.
- Troubador 598 playback system \$199.95. Walnut finish base and plexiglass cover combination \$34.95. 990 arm also available separately \$74.95.
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SOURCE

TAPE MONITOR

TUNER

PHONO

AUX-1

AUX-2

SOURCE

TAPE-1

TAPE-2



# The TEAC Consort series: Tape-ability is its most important capability.

This total-capability component system is designed first and foremost for tape, as if tape had just been invented. With it, TEAC launches a new age of magnetic recording and listening.

Lead instrument of the TEAC Consort is the AS-201 Integrated Amplifier—a complete tape-oriented audio control center. It permits simultaneous recording and monitoring on as many as two tape decks, from as many as five inputs: tuner, phono (hi & low) and 2 Aux. The AS-201 incorporates differential-type amplifier circuitry—originally designed for precision computer and data recorders—as well as FET pre-amp sections to achieve very low distortion characteristics, wide frequency response (20-80,000 Hz  $\pm 0.5$  into 8 ohm load), S/N ratio of 70 db or more for phono inputs and 90 db or more for high level inputs and power output of 60W per Channel (rms) into 4 ohm load with under 0.5% harmonic distortion at rated output. Other features include stepped tone controls, constant S/N volume controls, automatic protective muting-circuit and many other quality conveniences.

Another major Consort instrument is the AT-201 AM/FM Stereo Tuner—a spectacular performer for both primary and fringe-area reception. It utilizes FET FM inputs for selectivity of 70 db or better, capture ratio of less than 0.1 db and distortion of less than 0.3%. Other features include variable-level FM muting, two tuning meters and output-level control.

Other fine instruments in the Consort Series include the AF-201 Active Crossover Network for matching three-way speaker systems to any room acoustics, and the AE-201 Stereo Power Amplifier (60 W / channel) for use in multi-channel installations. Crowning touch to the TEAC Consorts is the AZ-201 Total Performance Indicator for real-time scope monitoring of FM and audio stereo separation, phasing, balance and signal strength. Also available in the series is the LS-80M 3-way speaker system with a frequency response of 30-20,000 Hz.

Step into a new era with the whole TEAC Consort Series. As the first step we invite you to write for a brochure of specs, graphs, and details.



## TEAC®

CIRCLE NO. 54 ON READER SERVICE CARD

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 TEAC Corporation, 1-8-1 Nishi-shinjuku, Shinjuku-ku, Tokyo, Japan • TEAC EUROPE N.V., Kabelweg 45-47, Amsterdam—W.2, Holland  
 In Canada: White Electronic Development Corp., Ltd., Toronto

# 4

# Reel-to-Reel Tape Machines

Recorders, Players, Recorder/Players, Decks

**A**LTHOUGH the quarter-track reel-to-reel tape recorder may never replace the phonograph record as a stereo program source, it is now and will continue to be a key component in a well-equipped music system. Tape recording allows anyone to assemble musical or vocal entertainment to his own taste, either from live or recorded sources—something which no other recording medium can do. The ease with which a reel-to-reel recording can be edited gives it a powerful advantage over the cartridge and cassette format.

Many recorders are available in a choice of portable or fixed packaging, using the same tape transport and electronics. Sometimes low-powered playback amplifiers and small speakers are included, particularly in portable versions. These are convenient for monitoring or casual listening, but the true quality of any tape recorder can only be realized when it is played through a good external amplifier and speakers.

Tape transports are often classified according to the number of heads and motors they contain. At a minimum, two heads (erase and combined record/playback) and one motor are required. By using separate recording and playback heads, each can be optimized for its own function. Most three-head machines also have separate recording and playback electronics, allowing monitoring off the tape while recording. Sometimes a fourth head is added for playback in the reverse direction. In combination with an automatic tape travel reversing system, the listener has uninterrupted playback of a tape in both directions (4 tracks). A few tape recorders have complete duplication of heads—six in all—and can record as well as play back in either direction.

Most low-to-moderate priced transports (and a few expensive, high-quality models) have a single motor which drives the tape capstan and turns the reels through a system of belts and clutches. Higher priced machines generally use three motors—one for constant-speed capstan drive and two torque motors for the reels. Most three-motor machines have solenoid-operated controls, actuated by light-touch push-buttons,

instead of the purely mechanical controls of a single-motor machine. Remote control is offered as an option on many three-motor machines. Three-motor transports tend to have less flutter and faster rewind action than single-motor designs. As with phonographs, excessive flutter in a tape recorder imparts a rough or "gargly" sound to the program. Flutter levels as high as 0.25% may be tolerable for many situations, but the better tape machines have flutter as low as 0.1% or less.

Most tape recorders accept inputs from high-level sources (such as amplifier or receiver tape outputs) or from medium-impedance dynamic microphones. Higher priced models usually have mixing inputs for combining two program sources when recording. Recorders with separate playback heads often have provision for transferring one recorded track to the other (sound-on-sound or sound-with-sound), or re-recording each track on itself to produce an echo effect.

The recorder's bias and equalization are optimized for a particular type of tape. The full benefits of improved tape formulations—extended frequency response and lower noise—can only be realized through correct bias adjustment. Complete adjustment facilities have long been provided on professional and semi-professional recorders, but only recently has this feature been available on many of the moderate priced machines.

A signal-to-noise ratio of 55 to 60 dB can be achieved on a good quality reel-to-reel recorder. Since this is acceptable performance, even for critical listening, auxiliary noise-reducing circuits (such as the Dolby "B" system) are rarely incorporated in these machines. If desired, Dolby can be added through "outboard" electronics.

Frequency response, at 7½ ips, often extends beyond 20 kHz, and many recorders have flat response to beyond 15 kHz at 3¾ ips. At 1⅞ ips, offered on some machines, high-frequency response is usually limited to 8 kHz or less, restricting its usefulness in high-quality recording.

JULIAN D. HIRSCH

## AIWA

(Milovac International Co., Inc.)

### Model TP-1012

Two speed (7½, 3¾ ips, 1⅞ with capstan change); 4 tracks; 7" maximum reel; response 50-16,000 Hz; 1¼ W/channel dynamic output;



two oval-type 6" x 4" speakers; 117 V a.c./8 "D" cells/12 V battery operation; Features two VU meters; tape counter; pause control; two dynamic microphones; over-all dimensions 13½" x 12¾" x 7¼" D; \$189.95

## AKAI AMERICA, LTD.

### GX-220D

Three speeds (7½, 3¾, 1⅞ ips); 4 tracks; 3 motors; 7" maximum reel; 3 ferrite heads; response 30-24,000 Hz at ±3.0 dB; wow & flutter <0.08% at 7½ ips; S/N >50 dB; VU meters; auto reverse; auto shutoff; pause; sound-on-sound; counter; 17¼" H x 17" W x 9¼" D; 42 lbs; \$399.95

### GX-280D

Two speeds (7½, 3¾ ips); 4 tracks; 3 motors; 7" maximum reel; 3 ferrite heads; response 30-24,000 Hz at ±3.0 dB; wow & flutter <0.08% at 7½ ips; S/N >50 dB; VU meters; auto reverse; auto shutoff; pause; sound-on-sound; counter; remote (optional extra); 17" H x 18" W x 10" D; 44 lbs; \$499.95

### GX-365D

Four speeds (15, 7½, 3¾, 1⅞ ips); 4 tracks; 3 motors; 7" maximum reel; 3 ferrite heads; response 30-28,000 Hz at ±3.0 dB; wow & flutter <0.04% at 7½ ips; S/N >55 dB; instant stop; braking, VU meters; auto reverse; auto shutoff; pause; sound-on-sound; sound-with-sound; counter; remote (optional extra); monitor; 18½" H x 16¼" W x 11⅞" D; 56 lbs; price \$559.95

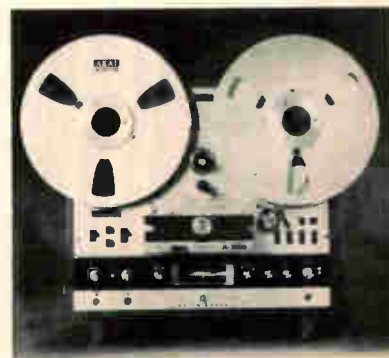
### Model M-10W

Three speeds (7½, 3¾, 1⅞ ips); 4 tracks; 3

motors; 7" maximum reel; 3 Cross Field heads; response 30-26,000 Hz at ±3.0 dB; wow & flutter <0.08% at 7½ ips; S/N >50 dB; built-in electronics with 20 W/channel output (IHF); VU meters; auto reverse; auto shutoff; pause; sound-on-sound; counter; tone controls; 18¾" H x 13¾" W x 9½" D; 48½ lbs; \$399.95

### Model X-330

Three speeds (7½, 3¾, 1⅞ ips); 4 tracks; 3 motors; 10½" maximum reel; 4 Cross Field



heads; response 30-25,000 Hz at ±3.0 dB; wow & flutter 0.04% at 7½ ips; S/N >50 dB; built-in electronics with 20 W/channel (IHF) output; braking; VU meters; auto reverse; auto shutoff; pause; counter; remote (optional extra).



## WHY YOU CAN'T BUY A USED CROWN

You may have puzzled about the rare availability of Crown tape recorders on the used market. Perhaps you even have a friend who refuses to part with his aging Crown at any price. Well, the typical Crown owner is not only a careful shopper, he knows when something is too valuable to lose. After all, why should he trade when his 4-year old Crown still turns out crisp, perfect recordings with greater fidelity than most brand new hi-fi tape decks?

One reason for this is that the Crown line is a professional line of tape recorders and players - that is, designed for audio pros who make their living by recording. Crown does not bow to the popular philosophy of "planned obsolescence", where the manufacturer automatically outdates last year's line by bringing out all new models each year. Indeed, since Crown first introduced modular solid state recording in 1963 (four years before any other manufacturer), the basic design has not been significantly altered - so advanced was its concept. State-of-the-art currency is maintained by incorporating new features into current models, only when they mean an advantage in either performance or price.

But even these are not the reasons a Crown owner would give for treasuring a venerable old model. He would say it's the sound - that matchless recording and playback fidelity that has become synonymous with the Crown name. For example, the SX724 4-track stereo deck at 7½ ips delivers a frequency response of +2dB 30-25,000 Hz, with hum and noise at -60dB, and maximum wow and flutter of 0.09%. (When comparing specifications, keep in mind that, unlike most hi-fi manufacturers, Crown guarantees its specs for minimum long-term performance; actual operation is often even better.)

If you would like your tape deck to record as good years from now, as when new, we suggest that you visit your local Crown dealer soon. (Just don't expect to find a used Crown - at any price.)

\* MADE ONLY IN AMERICA \*



**Crown**  
BOX 1000, ELKHART, INDIANA, 46514, U.S.A.

CIRCLE NO. 19 ON READER SERVICE CARD

# 4

## Reel-to-Reel Tape Machines

magnetic cartridge input jack; 17½" H x 10½" W x 9¾" D; 48 lbs; \$579.95

### Model X-5000W

Three speeds (7½, 3¾, 1⅞ ips); 4 tracks; 1 motor; 7" maximum reel; Cross Field head; re-



sponse 35-24,000 Hz at ±3.0 dB (reference not stated); wow & flutter 0.12% at 7½ ips; S/N >50 dB; built-in electronics with 6 W/channel output; built-in speakers; VU meters; auto shutoff; pause; counter; tone controls; 14" H x 13½" W x 9½" D; available late 1972.

### Model 250D

Three speeds (7½, 3¾, 1⅞ ips); 4 tracks; 3 motors; 7" maximum reel; 4 heads; response 30-22,000 Hz at ±3.0 dB; wow & flutter 0.08% at 7½ ips; S/N >50 dB; VU meters; auto reverse; auto shutoff; pause; counter; remote (optional extra); monitor; 18" H x 17" W x 10" D; 44 lbs; \$399.95

### Model 1720W

Three speeds (7½, 3¾, 1⅞ ips); 4 tracks; 1 motor; 7" maximum reel; 2 heads; response 40-15,000 Hz at ±3.0 dB; wow & flutter <0.18% at 7½ ips; S/N >50 dB; built-in electronics with 4 W/channel output; built-in speakers; VU meters; auto shutoff; pause; counter; tone controls; 14½" H x 14½" W x 9½" D; 29½ lbs; \$239.95.

## ALLIED RADIO SHACK

### TD-1099

Three speeds (7½, 3¾, 1⅞ ips); 4 tracks; 1 motor; 7" maximum reel; 3 heads; response



30-22,000 Hz at ±3.0 dB; wow & flutter 0.1% at 7½ ips; S/N 48 dB; VU meters; auto shutoff; pause; sound-on-sound; sound-with-sound; counter; monitoring; 12¾" H x 16" W x 6¾" D; 20 lbs; \$179.95.

### Model 909A

Three speeds (7½, 3¾, 1⅞ ips); 4 tracks; 7" maximum reel; response 50-18,000 Hz (reference not stated); wow & flutter 0.25% at 7½ ips;



built-in electronics with 3½ W/channel output; supplied with speakers; supplied with microphones; VU meters; sound-with-sound; counter; 14" H x 24¼" W x 7⅞" D; 26 lbs; \$169.95.

## AMPEX CORP.

### AX-50

Three speeds (7½, 3¾, 1⅞ ips); 4 tracks; 1 motor; 7" maximum reel; 3 heads; response 40-15,000 Hz at ±3.0 dB; wow & flutter <0.12% at 7½ ips; S/N 55 dB; VU meters; auto shutoff; pause; sound-on-sound; sound-with-sound; counter; monitoring; noise suppression filter; 15¾" H x 16½" W x 8½" D; 23 lbs; \$279.95.

### AX-300

Three speeds (7½, 3¾, 1⅞ ips); 4 tracks; 3 motors; 7" maximum reel; 6 heads; response 40-16,000 Hz at ±3.0 dB; wow & flutter <0.09% at 7½ ips; S/N 55 dB; VU meters; auto reverse; auto shutoff; pause; sound-on-sound; sound-with-sound; bias adjustment; counter; variable noise reduction filter; 14½" H x 16½" W x 8" D; 45 lbs; \$649.95.

## ASTROCOM/MARLUX INC.

### Model 407

Two speeds (7½, 3¾ ips); 4 tracks; 3 motors; 7" maximum reel; 4 heads; response 30-20,000



Hz (reference not stated); wow & flutter <0.07% at 7½ ips; S/N >50 dB; VU meters; auto reverse; auto shutoff; pause; echo effects; sound-on-sound; sound-with-sound; counter; solenoid controls; monitoring; 14½" H x 21" W x 10½" D; 40 lbs; \$459.95.

## CONCORD ELECTRONICS CORP.

### Mark II

Three speeds (7½, 3¾, 1⅞ ips); 4 tracks; 1 motor; 7" maximum reel; 3 heads (ferrite erase); response 20-23,000 Hz (reference not stated); wow & flutter <0.09% at 7½ ips; S/N 52 dB; VU meters; auto shutoff; pause; echo effects; sound-on-sound; counter; monitoring; dynamic muting; 13" H x 18½" W x 6" D; 26 lbs; \$179.95.

### Mark III

Similar to Mark II, but with 3 sintered ferrite heads; response 20-27,000 Hz (reference not stated); \$229.95.

### Mark IV

Similar to Mark II, but with 4 heads; auto reverse, dust cover; wow & flutter <0.07% at 7½ ips; \$279.95.

### Mark 8

Three speeds (7 1/2, 3 3/4, 1 7/8 ips); 4 tracks; 7" maximum reel; response 50-19,000 Hz (refer-



ence not stated); wow & flutter 0.1% at 7 1/2 ips; S/N 45 dB; built-in electronics with 10 W/channel output; supplied with speakers; VU meters; auto shutoff; pause; sound-with-sound; counter; dust cover; includes 8-track cartridge play/record; monitoring; tone controls; 17 1/4" H x 16 3/4" W x 8 1/4" D; 40 lbs; handle for carrying; \$319.95.

### CROWN INTERNATIONAL

(Subs. of International Radio & Electronics Corp.)

#### CX722

Two speeds (7 1/2, 3 3/4, 1 7/8 ips); 2 tracks; 3 motors; 10 1/2" maximum reel; 3 heads; response 30-30,000 Hz at ±2.0 dB; wow & flutter 0.09% at 7 1/2 ips; braking; VU meters; auto shutoff; pause; counter; Model CX724 available as 4 track at same price; \$1295.00

#### CX822

Two speeds (7 1/2, 3 3/4 ips); 2 tracks; 3 motors; 10 1/2" maximum reel; response 30-30,000 Hz at ±2.0 dB; wow & flutter 0.06% at 7 1/2 ips; S/N 60 dB; braking; VU meters; auto shutoff; pause; counter, remote control; monitoring; available as 4 track (\$1790.00) or 4 channel in-line (\$2880.00); handle for carrying; walnut cabinet extra charge; \$1790.00

#### SX724

Two speeds (7 1/2, 3 3/4 ips); 2 tracks; 3 motors; 10 1/2" maximum reel size; response 30-25,000 Hz at ±2.0 dB; wow & flutter 0.09% at 7 1/2 ips; S/N 60 dB; braking; VU meters; auto shutoff; monitoring; pause; counter; 15 and 1 7/8 ips available; Model SX724-P4C is 2 and 4 tracks (\$1425.00); \$995.00.

### FERROGRAPH

(Elpa Marketing Industries, Inc.)

#### Series 7

Three speeds (7 1/2, 3 3/4, 1 7/8 ips); 4 tracks; 3 motors; 3 heads; braking; VU meters; auto shutoff; pause; sound-on-sound; bias adjustment possible; counter; available in half-track and mono versions; with or without power amplifiers and portable cases; cabinet extra charge; \$649.00.

### GRUNDIG ELECTRONIC SALES, INC.

#### TK246

Two speeds (7 1/2, 3 3/4 ips); 4 tracks; 7" maximum reel; VU meters; auto shutoff; pause; counter; monitoring; 13 3/4" H x 17" W x 8" D; \$249.95.

#### TK248

Two speeds (7 1/2, 3 3/4 ips); 4 tracks; 7" maximum



reel; VU meters; auto shutoff; echo effects; sound-on-sound; sound-with-sound; counter; tape monitoring; 13 3/4" H x 17" W x 8" D; \$299.95.

### HITACHI SALES CORP.

#### TRQ-730D

Three speeds (7 1/2, 3 3/4, 1 7/8 ips); 4 tracks; 1 motor; 7" maximum reel; 3 heads; response 20-23,000 Hz (reference not stated); wow & flutter 0.12%; S/N 52 dB; VU meters; auto shutoff; counter; dust cover; monitoring; 16 1/8" H x 13 1/4" W x 7 1/2" D; 24 lbs; \$189.95.

#### TRQ-770D

Three speeds (7 1/2, 3 3/4, 1 7/8 ips); 4 tracks; 1 motor; 7" maximum reel; response 20-23,000 Hz (reference not stated); wow & flutter <0.12%; S/N >53 dB; VU meters; auto reverse; auto shutoff; pause; sound-with-sound; counter; monitoring; 17 7/8" H x 16 1/8" W x 8 7/8" D; 35 lbs; \$259.95.

### JVC AMERICA, INC.

(Subs. of Victor Co. of Japan, Ltd.)

#### Model 1224

Three speeds (7 1/2, 3 3/4, 1 7/8 ips); 4 tracks; 7" maximum reel; response 30-20,000 Hz (reference not stated); wow & flutter <0.15% at 7 1/2 ips; S/N >45 dB; built-in electronics with 4 1/2 W/channel output; supplied with speakers



and microphones; VU meters; auto reverse; auto shutoff; pause; sound-on-sound; sound-with-sound; counter; dust cover; 12 3/4" H x 38 1/4" W x 7 1/2" D; over-all weight 38 1/2 lbs; \$299.95.

### KENWOOD ELECTRONICS, INC.

#### KW-4077

Three speeds (7 1/2, 3 3/4, 1 7/8 ips); 4 tracks; 7" maximum reel; 3 heads; response 20-20,000



Hz (reference not stated); wow & flutter <0.12% at 7 1/2 ips; S/N >50 dB; VU meters; auto reverse; auto shutoff; pause; counter; remote pause control; 17 3/8" H x 16 5/16" W x 7 7/8" D; 26 1/2 lbs; \$299.95.

### KLH RESEARCH & DEVELOPMENT CORP.

#### Model Forty-One

Three speeds (7 1/2, 3 3/4, 1 7/8 ips); 4 tracks; 7" maximum reel size; 3 heads; response 50-



15,000 Hz at ±3.0 dB; wow & flutter 0.1% at 7 1/2 ips; S/N 68 dB; braking; VU meters; auto shutoff; pause; counter; features Dolby noise reduction system; 2 line inputs; microphone input; individual level controls each channel; 11 3/8" x 14 1/4" x 5 3/8" D; \$249.95.

### LAFAYETTE RADIO

#### RK-960

Three speeds (7 1/2, 3 3/4, 1 7/8 ips); 4 tracks; 2 motors; 7" maximum reel size; 4 heads; re-



sponse 30-22,000 Hz at ±3.0 dB; wow & flutter <0.25% at 3 3/4 ips; S/N 50 dB; built-in electronics with 6 W/channel output; VU meters; auto reverse; pause; sound-on-sound; sound-with-sound; counter; phono input; solenoid operation; 15 1/2" H x 22" W x 8 1/4" D; 55 lbs; \$229.95.

### MOTOROLA INC.

#### Model RA20GW

Three speeds (7 1/2, 3 3/4, 1 7/8 ips); 4 tracks; 7" maximum reel size; supplied with microphones; VU meters; auto shutoff; counter; walnut; \$129.95.

### PANASONIC

(Matsushita Electric Corp. of America)

#### RS-1030

Two speeds (15, 7 1/2 ips); 2 or 4 tracks; 2 or 4 channels; 3 motors; 10" maximum reel; 4 heads; response 30-22,000 Hz at ±3.0 dB; wow & flutter <0.12% at 7 1/2 ips; S/N >55 dB; VU meters; auto shutoff; pause; counter; remote (optional extra); 22" H x 17" W x 7 7/8" D; 60 lbs; \$699.95.

#### RS-714US

Two speeds (7 1/2, 3 3/4 ips); 4 tracks; 3 motors; 7" maximum reel; 3 ferrite heads; response 30-22,000 Hz at 7 1/2 dB; wow & flutter <0.1% at 7 1/2 ips; S/N >50 dB; VU meters; auto shutoff; pause; sound-on-sound; counter; remote control (optional extra); solenoid operation; monitoring; Model RS-715US similar to RS-714US,

# 4

## Reel-to-Reel Tape Machines



but with auto reverse (\$499.95); 20" H x 17" W x 7 7/8" D; 49 lbs; \$449.95.

### PIONEER

(U.S. Pioneer Electronics Corp.)

#### Model T-6100

Two speeds (7 1/2, 3 3/4 ips); 4 tracks; 1 motor; 7" maximum reel; 3 heads; response 50-15,000 Hz at  $\pm 2.0$  dB; wow & flutter 0.12% at 7 1/2 ips; S/N >55 dB; VU meters; auto reverse; auto shutoff; pause; counter; 14 7/8" H x 15 5/16" W x 6 3/4" D; 37 lbs; \$249.95.

#### Model T-6600

Two speeds (7 1/2, 3 3/4 ips); 4 tracks; 1 motor; 7" maximum reel; 4 heads; response 50-15,000



Hz at  $\pm 2.0$  dB; wow & flutter <0.12% at 7 1/2 ips. S/N >55 dB; VU meters; auto reverse; auto shutoff; pause; counter; 17" H x 17 3/16" W x 7 1/4" D; 38 lbs; \$299.95.

#### Model T-8800

Two speeds (7 1/2, 3 3/4 ips); 4 tracks; 2 motors; 7" maximum reel; 4 heads; response 40-15,000 Hz at  $\pm 2.0$  dB; wow & flutter <0.08% at 7 1/2 ips; S/N >55 dB; VU meters; auto reverse; auto shutoff; pause; echo effects; sound-on-sound; bias adjustment possible; counter; remote

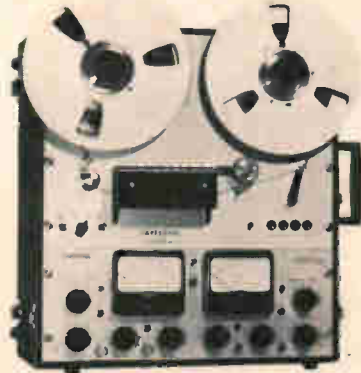


control; dust cover; monitoring; 9 1/2" H x 21 3/4" W x 16 3/4" D; 59 lbs; \$549.95.

### PREMIER ELECTRONIC LABS.

#### Tapesonic (Model 70A)

Three speeds (15, 7 1/2, 3 3/4 ips); 4 tracks; 3 motors; 10 1/2" maximum reel; 3 heads; response 30-20,000 Hz at  $\pm 2.0$  dB; wow & flutter 0.11% at 7 1/2 ips; braking; VU meters; auto shutoff; bias

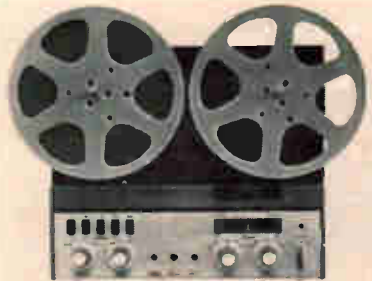


check; solenoid operation; monitoring; cabinet extra charge; \$675.00.

### REVOX CORPORATION

#### Model A77-1102

Two speeds (15, 7 1/2 or 3 3/4 ips); 2 tracks; 3 motors; 10 1/2" maximum reel; 3 heads; response



20-20,000 Hz at  $\pm 2.5$  dB; wow & flutter 0.08% at 7 1/2 ips; S/N 58 dB; braking; VU meters; auto reverse; auto shutoff; pause; sound-on-sound; counter; remote control; solenoid operation; monitoring; numerous options available; including 4 track; plug-in 10 W/channel power amplifiers; portable mode, etc., up to \$669.00; 16 1/2" H x 16 1/4" W x 8 1/2" D; 35 lbs; \$569.00.

### RHEEM CALIFONE

(Div. of Rheem Mfg. Co.)

#### Model 3205

Two speeds (7 1/2, 3 3/4 ips); 4 tracks; 1 motor; 7" maximum reel; 2 heads; 50-15,000 Hz at  $\pm 3.0$  dB; wow & flutter 0.18% at 7 1/2 ips; built-in



electronics with 10 W/channel output; supplied with speakers; VU meters; auto shutoff; pause; counter; monitoring; tone controls; 15 3/4" H x 15 1/2" W x 8 1/2" D; 25 lbs; handle for carrying; \$365.00.

#### Model 70-TC

Two speeds (7 1/2, 3 3/4 ips); 2 tracks; mono; 1 motor; 7" maximum reel; 2 heads; response 50-15,000 Hz at  $\pm 2.0$  dB; wow & flutter 0.18%; built-in electronics with 10 W/channel output; supplied with speaker and microphone; VU meter; auto shutoff; pause; counter; monitoring; may be used as p.a. system; 13 1/4" H x 13 1/4" W x 9" D; \$235.00.

#### Model 70-TF

Similar to Model 70-TC, but with lever action



speed change, built-in storage compartment; \$245.00.

### ROBERTS

(Div. of Rheem Mfg. Co.)

#### GH-500D

Three speeds (7 1/2, 3 3/4, 1 7/8 ips); 4 tracks; 2 motors; 7" maximum reel; glass & ferrite heads; braking; VU meters; auto reverse; auto shutoff; pause; sound-on-sound; counter; remote control (optional extra); monitoring; \$559.95.

#### Model 333X

Four speeds (7 1/2, 3 3/4, 1 7/8 ips, 15 ips with adapter); 1 motor; 7" maximum reel; 7 heads (some



Cross Field); response 30-23,000 Hz at  $\pm 3.0$  dB; wow & flutter <0.09% at 7 1/2 ips; S/N >50 dB; built-in electronics with 12 W/channel output; supplied with speakers and microphones; VU meters; auto shutoff; pause; counter; combines cartridge and cassette record and playback; transfer reel to cartridge or cassette; 18 1/4" H x 13 3/4" W x 10 1/2" D; 49 1/2 lbs; \$559.95.

#### Model 800X

Three speeds (7 1/2, 3 3/4, 1 7/8 ips); 4 tracks; 3 motors; 7" maximum reel; Cross Field 4 heads;

response 30-22,000 Hz at  $\pm 3$  dB; VU meters; auto reverse; auto shutoff; pause; sound-on-sound; sound-with-sound; counter; tone controls; 19" H x 18" W x 9" D; \$399.95.

**Model 450A**

Two speeds (7 1/2, 3 3/4 ips); 4 tracks; 1 motor;



7" maximum reel; 3 heads; VU meters; auto shutoff; pause control; counter; dust cover; monitoring; \$169.95.

**Model 1730**

Two speeds (7 1/2, 3 3/4 ips); 2 tracks; 1 motor; 7" maximum reel; 2 heads; response 40-17,000 Hz at  $\pm 3.0$  dB; wow & flutter 0.18% at 7 1/2 ips; built-in electronics with 7 1/2 W/channel output; supplied with speakers and microphones; VU meters; auto shutoff; sound-on-sound; sound-with-sound; counter; can be used as p.a. system; monitoring; 15 1/4" H x 15 1/4" W x 11 5/8" D; \$239.95.

**Model 650XD**

Three speeds (7 1/2, 3 3/4, 1 7/8 ips); 4 tracks; 3



motors; 7" maximum reel; Cross Field 4 heads; VU meters; auto shutoff; pause; counter; \$399.95.

**Model 771X**

Four speeds (7 1/2, 3 3/4, 1 7/8 ips); 4 tracks; 1 motor; 7" maximum reel; Cross Field heads; built-in electronics; VU meters; auto shutoff; pause; sound-on-sound; counter; tone controls; \$279.95.

**SANSUI ELECTRONICS CORP.**

**SD-7000**

Two speeds (7 1/2, 3 3/4 ips); 4 tracks; 2 motors; 7" maximum reel; 4 heads; response 20-20,000 Hz at  $\pm 2.0$  dB; wow & flutter <0.06% at 7 1/2 ips; S/N 60 dB; VU meters; auto reverse; auto shutoff; pause; sound-on-sound; sound-with-sound; counter; remote control (optional extra); dust cover; monitoring; solenoid operation; 21 1/8" H x 17 1/8" W x 10 1/4" D; 59 1/2 lbs; \$679.95.

**SONY/SUPERSCOPE**

(Superscope, Inc.)

**Model 252D**

Two speeds (7 1/2, 3 3/4 ips); 4 tracks; 1 motor; 7" maximum reel; 2 heads; response 30-18,000

Hz (reference not stated); wow & flutter 0.12% at 7 1/2 ips; S/N 52 dB; VU meters; auto shutoff; pause; counter; also available with 3 speeds and built-in 6 W/channel power amplifiers (Model 252-\$219.95); 15 1/4" H x 13 7/16" W x 7 1/2" D; 17 lbs; \$139.95.

**Model 330**

Three speeds (7 1/2, 3 3/4, 1 7/8 ips); 4 tracks; 7" maximum reel; response 30-18,000 Hz (reference not stated); wow & flutter 0.12% at 7 1/2 ips; built-in electronics with 7 1/2 W/channel output; supplied with speakers and microphones; VU meters; auto shutoff; counter; monitoring; tone controls; includes cassette



play/record facility; 11 3/16" H x 21 3/16" W x 13 7/8" D; 43 lbs; handle for carrying; \$349.95.

**Model 352D**

Similar to Model 252D; but with 3 speeds (add 1 7/8 ips); 3 heads; monitoring; S/N 55 dB; \$179.95.

**Model 366**

Three speeds (7 1/2, 3 3/4, 1 7/8 ips); 4 tracks; 1 motor; 7" maximum reel; 3 heads; response



30-25,000 Hz at  $\pm 3.0$  dB; wow & flutter 0.09% at 7 1/2 ips; S/N 55 dB; VU meters; auto shutoff; pause; counter; monitoring; slanted upright base; also available as a two-track (7 1/2 & 3 3/4 ips) 4 channel Model 366-4-\$499.95; 16 7/16" H x 14 3/16" W x 8 7/16" D; 22 1/2 lbs; \$239.95.

**Model 440**

Three speeds (7 1/2, 3 3/4, 1 7/8 ips); 4 tracks; 1 motor; 7" maximum reel; 3 heads; response 30-25,000 Hz at  $\pm 3.0$  dB; wow & flutter 0.06% at 7 1/2 ips; S/N 56 dB; VU meters; auto shutoff; pause; echo effects; sound-on-sound; counter; solenoid operation; monitoring; 16 9/16" H x 16 3/16" W x 8 1/2" D; 27 lbs; \$369.95.

**Model 630**

Three speeds (3 3/4, 1 7/8 ips); 4 tracks; 1 motor; 7" maximum reel; 3 heads; response 30-22,000 Hz (reference not stated); wow & flutter 0.09% at 7 1/2 ips; built-in electronics with 20 W/channel output; supplied with speakers and microphones; VU meters; auto shutoff; pause; echo effects; sound-on-sound; counter; phono input; tone controls; monitoring; 20" H x 17 7/8" W x 11 5/8" D; 46 lbs; handle for carrying; \$419.95.

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# 4

## Reel-to-Reel Tape Machines

### Model 580

Three speeds (7 1/2, 3 3/4, 1 7/8 ips); 4 tracks; 3 motors; 7" maximum reel; 3 heads; response



30-25,000 Hz at ±3.0 dB; wow & flutter 0.06% at 7 1/2 ips; S/N 56 dB; VU meters; auto reverse; auto shutoff; pause; counter; monitoring; solenoid operation; 18 1/8" H x 17 1/2" W x 8 7/8" D; 43 lbs; \$449.95.

### Model 640

Two speeds (7 1/2, 3 3/4 ips); 4 tracks; 7" maximum reel; 3 heads; response 30-20,000 Hz at ±3.0 dB; wow & flutter 0.07% at 7 1/2 ips; S/N 55 dB; braking; VU meters; auto shutoff; pause; echo effects; sound-on-sound; counter; monitoring; solenoid operation; 15 1/2" H x 14 1/2" W x 9 1/2" D; 33 lbs; \$349.95.

### Model 650-4

Two speeds (7 1/2, 3 3/4 ips); 4 tracks; 3 motors; 7" maximum reel; 3 heads; response 30-22,000



Hz at ±2.0 dB; wow & flutter 0.04% at 7 1/2 ips; S/N 57 dB; VU meters; auto shutoff; pause; echo; sound-on-sound; bias adjustment; counter; remote (optional extra); also available as two-track (Model 650-2—\$475.00); monitoring; 17 3/8" H x 16 3/8" W x 9 1/2" D; 46 lbs; \$449.95.

### Model 770-4

Three speeds (7 1/2, 3 3/4, 1 7/8 ips); 4 tracks; 3 motors; 7" maximum reel; 4 heads; response 20-22,000 Hz (reference not stated); wow & flutter 0.09% at 7 1/2 ips; S/N 56 dB; VU meters; auto shutoff; pause; counter; solenoid operation; monitoring; also available as two-track (15 & 7 1/2 ips) with bias adjustment (Model 772—\$750.00); 16 1/8" H x 15 1/8" W x 5 1/8" D; 24 lbs; \$595.00.

### Model 850-4

Three speeds (15, 7 1/2, 3 3/4 ips); 4 tracks; 3 motors; 10 1/2" maximum reel; 4 heads; response 30-22,000 Hz at ±2.0 dB; wow & flutter 0.03% at 7 1/2 ips; S/N 57 dB; VU meters; auto shutoff; pause; echo effects; sound-on-sound; bias



adjustment; counter; remote (optional extra); solenoid operation; monitoring; also available as two-track (Model 850-2); 19 3/4" H x 17 1/2" W x 10" D; 57 lbs; \$795.00.

### Model 854-4S

Three speeds (15, 7 1/2, 3 3/4 ips); 4 tracks; 4 channels; 3 motors; 10 1/2" maximum reel; 3



heads; response 30-22,000 Hz at ±2.0 dB; wow & flutter 0.04% at 7 1/2 ips; S/N 56 dB; braking; four VU meters; auto shutoff; pause; sound-on-sound; bias adjustment; counter; remote (optional extra); dust cover; monitoring; solenoid operation; 22" H x 17 3/8" W x 10" D; 61 lbs; \$1595.00.

## TANDBERG OF AMERICA, INC.

### Model 11-2

Three speeds (7 1/2, 3 3/4, 1 7/8 ips); 2 tracks; 1 motor; 7" maximum reel; 4 heads; response 40-16,000 Hz (reference not stated); wow & flutter <0.2% at 7 1/2 ips; S/N 56 dB; braking; VU meter; pause; counter; electronic speed control; battery operated professional portable; 13" H x 10" W x 4" D; 9 1/2 lbs; \$449.50.

### Model 1421

Two speeds (3 3/4, 1 7/8 ips); 2 or 4 tracks; 1 motor; 7" maximum reel; 2 heads; response 50-9,000 Hz at ±2.0 dB; wow & flutter 0.15% at 3 3/4 ips; S/N 59 dB; built-in electronics with 3 W/channel output; supplied with speaker; braking; VU meters; pause; counter; monitoring; tone controls; 6 3/4" H x 15" W x 11 3/4" D; 18 1/2 lbs; teak; \$250.00.

### Model 1521

Similar to Model 1421, but with three speeds (7 1/2, 3 3/4 & 1 7/8 ips); response 40-16,000 Hz ±2 dB at 7 1/2 ips; \$287.00.

### Model 3041X

Three speeds (7 1/2, 3 3/4, 1 7/8 ips); 4 tracks; 1 motor; 7" maximum reel; 4 heads (1 Cross Field); response 40-20,000 Hz at ±2.0 dB; wow & flutter 0.07% at 7 1/2 ips; S/N 62 dB; braking;

VU meters; auto shutoff; pause; echo; sound-on-sound; counter; monitoring; 6 1/2" H x 15 1/2" W x 12 3/4" D; 20 lbs; walnut; \$330.00.

### Model 4041X

Three speeds (7 1/2, 3 3/4, 1 7/8 ips); 2 or 4 tracks; 1 motor; 7" maximum reel; 4 heads (1 Cross Field); response 40-20,000 Hz at ±2.0 dB; wow & flutter 0.07% at 7 1/2 ips; S/N 60 dB; built-in electronics with 10 W/channel output; supplied with speakers; VU meters; auto shutoff; pause; sound-on-sound; counter; remote; tone controls; monitoring; phono input; 6 1/2" H x 15 1/2" W x 12" D; 23 lbs; walnut; \$459.00.

### Model 6041X

Three speeds (7 1/2, 3 3/4, 1 7/8 ips); 2 or 4 tracks; 1 motor; 7" maximum reel; 4 heads (1 Cross Field); response 40-22,000 Hz at ±2.5 dB; wow & flutter <0.07% at 7 1/2 ips; S/N 62 dB; braking; VU meters; auto shutoff; pause; sound-on-sound; sound-with-sound; counter; remote; phono input; 6 1/2" H x 15 1/2" W x 12 3/8" D; 21 lbs; walnut; \$499.00.

## TEAC CORP. OF AMERICA

### Model A-1200U

Two speeds (7 1/2, 3 3/4 ips); 4 tracks; 3 motors; 7" maximum reel; 3 heads; response 50-15,000 Hz at ±3.0 dB; wow & flutter 0.12% at 7 1/2 ips; S/N 50 dB; VU meters; auto shutoff; echo effects; sound-on-sound; counter; remote (optional extra); 17" H x 15 1/2" W x 9 3/4" D; 41 lbs; \$299.50.

### TCA-41

Two speeds (7 1/2, 3 3/4 ips); 4 tracks; 3 motors; 7" maximum reel; 3 heads; response 50-15,000



Hz at ±3.0 dB; wow & flutter 0.12% at 7 1/2 ips; S/N 50 dB; VU meters; auto reverse; auto shutoff; pause; counter; solenoid operation; separate tape transport and electronics cabinets; monitoring; also available with 4 heads for 4 channel operation, 4 VU meters, 3 cabinets (\$695.00); 16 3/4" H x 17 1/2" W x 7 1/4" D; 46 lbs; \$535.00.

### Model 1230

Two speeds (7 1/2, 3 3/4 ips); 4 tracks; 3 motors; 7" maximum reel; 3 heads; response 40-18,000 Hz at ±3.0 dB; wow & flutter 0.08% at 7 1/2 ips; S/N 50 dB; VU meters; auto shutoff; pause; bias adjustment; counter; solenoid operation;





monitoring; also available with auto reverse as Model 1250—\$449.50; 14 1/4" H x 17 3/16" W x 8" D; 37 1/2 lbs; \$349.50.

#### Model 3300-10

Two speeds (7 1/2, 3 3/4 ips); 4 tracks; 3 motors; 10 1/2" maximum reel; 3 heads; response 30-20,000 Hz at ±3.0 dB; wow & flutter 0.06% at 7 1/2 ips; S/N 58 dB; braking; VU meters; auto shutoff; pause; bias adjustment; counter; monitor; Model 3300-11 similar, but half-track (15 & 7 1/2 ips) at \$529.50; Model 3300-12 similar, but half-track (7 1/2 & 3 3/4 ips) at \$499.50; 15 3/8" H x 15 3/8" W x 9 1/4" D; over-all weight 40 lbs; \$499.95.

#### Model 4010SL

Two speeds (7 1/2, 3 3/4 ips); 4 tracks; 3 motors; 7" maximum reel; 4 hyperbolic heads; response 40-18,000 Hz at ±3.0 dB; wow & flutter 0.08% at 7 1/2 ips; S/N 55 dB; VU meters; auto reverse; auto shutoff; echo effects; sound-on-sound; bias adjustment; counter; remote (optional extra); monitor; 17 1/4" H x 17 1/2" W x 9 3/4" D; 48 lbs; \$499.50.

#### Model 4070

Two speeds (7 1/2, 3 3/4 ips); 4 tracks; 3 motors; 7" maximum reel; 4 high density ferrite heads (6 head functions); response 30-20,000 Hz at ±3.0 dB; wow & flutter 0.06% at 7 1/2 ips; S/N 58 dB; braking; VU meters; auto reverse; auto shutoff; pause; bias adjustment; counter; remote (optional extra); monitoring; 17 3/8" H x 18" W x 9 3/16" D; 51 lbs; \$599.50.

#### Model 6010SL

Two speeds (7 1/2, 3 3/4 ips); 4 tracks; 3 motors; 7" maximum reel; 4 ferrite heads; response



30-20,000 Hz at ±3.0 dB; wow & flutter 0.06% at 7 1/2 ips; S/N 58 dB; VU meters; auto reverse; auto shutoff; pause; echo effects & sound-on-sound (optional extras); counter; remote (optional extra); solenoid operation; monitoring; also available as Model 7010SL to accept 10 1/2" reel, 62 lbs, \$899.50; or Model 7030SL which is a professional machine with 15 & 7 1/2 ips, S/N 60 dB, response 30-22,000 Hz at ±3.0 dB, 10 1/2" reel, \$799.50; 20 7/8" H x 17 1/2" W x 6 7/8" D; 52 lbs; \$699.50.

### TELEX COMMUNICATIONS DIV.

#### Lab Series 2001

Two speeds (7 1/2, 3 3/4 ips); 4 tracks; 2 motors; 8 1/4" maximum reel; 3 heads; response 45-18,000 Hz at ±2.0 dB; wow & flutter 0.18% at 7 1/2 ips; S/N 52 dB; VU meters; auto shutoff; pause; counter; solenoid operation; monitoring; 14 1/2" H x 19 1/8" W x 8" D; \$799.95.

#### Quad/Sonic 2 + 2

Three speeds (7 1/2, 3 3/4, 1 7/8 ips); 4 tracks; 3 motors; 7" maximum reel; 2 heads; response 40-18,000 Hz at ±3.0 dB; wow & flutter 0.2% at 7 1/2 ips; S/N 50 dB; braking; auto shutoff; counter; 11" H x 16 1/2" W x 6 1/4" D; 29 lbs; \$249.95.

1972 EDITION

## V-M CORP.

#### Model 734

Three speeds (7 1/2, 3 3/4, 1 7/8 ips); 4 tracks; 1 motor; 7" maximum reel size; 3 heads; supplied with microphones; VU meters; auto shutoff; pause; sound-on-sound; sound-with-sound; counter; 14" H x 16" W x 8" D; handle for carrying; \$189.95.

## WEBCOR

#### Model 5000R

Three speeds (7 1/2, 3 3/4, 1 7/8 ips); 4 tracks; 1 motor; 7" maximum reel; 4 heads; response 30-20,000 Hz (reference not stated); built-in electronics with 5 W/channel output; supplied with speakers and microphones; VU meters; auto reverse; auto shutoff; pause; sound-on-sound; sound-with-sound; counter; tone controls; 17 3/4" H x 26 3/4" W x 6 3/4" D; 51 1/2 lbs; \$339.95.

#### Model 5100 DR

Three speeds (7 1/2, 3 3/4, 1 7/8 ips); 4 tracks; 1 motor; 7" maximum reel; 4 heads; response



30-20,000 Hz (reference not stated); VU meters; auto reverse; auto shutoff; pause; sound-on-sound; sound-with-sound; counter; 17 3/4" H x 16" W x 6 3/4" D; 30 lbs; \$219.95.

## WOLLENSAK

#### Model 6250

Three speeds (7 1/2, 3 3/4, 1 7/8 ips); 4 tracks; 2 motors; 7" maximum reel; 3 heads; response



35-20,000 Hz at ±2.0 dB; wow & flutter 0.12% at 7 1/2 ips; S/N 54 dB; built-in electronics with 18 W/channel output; supplied with speakers; VU meters; auto shutoff; pause; echo effects; sound-on-sound; sound-with-sound; bias adjustment; counter; monitoring; phono input jack; 20 1/2" H x 13 1/2" W x 7 1/2" D; \$379.95.

#### Model 6364

Three speeds (7 1/2, 3 3/4, 1 7/8 ips); 4 tracks; 2 motors; 7" maximum reel; 3 heads; response



35-20,000 Hz at ±2.0 dB; wow & flutter 0.12% at 7 1/2 ips; S/N 54 dB; built-in electronics with 18 W/channel output; braking; VU meters; auto shutoff; pause; echo effects; sound-on-sound; sound-with-sound; phono input, \$399.95.

## Interpretation of Abbreviations & Symbols

- a.f.c. Automatic frequency control (used in conjunction with FM; a means of electronically keeping the receiver in tune)
- dB Decibel (a ratio measurement value—either positive or negative—used in electronics for comparison purposes)
- g Gram (a measure of weight)
- h.f. High frequency (either treble musical notes or parts of the radio spectrum other than the standard AM broadcast band)
- HD Harmonic distortion (an undesirable quality in electronic equipment produced by circuit deficiencies—the less the better)
- Hz Hertz (a complete cycle of a wavefront—once referred to as "cycle-per-second")
- IC Integrated circuit (microminiature transistors and electronic components encapsulated in a thumbnail-size package)
- IHF Institute of High Fidelity (manufacturers' industry organization)
- IM Intermodulation distortion (similar to HD, but generated by mixing unlike musical notes—the less the better)
- ips Inches-per-second (in tape recording; passage of the tape over the heads; tape speed)
- k Kilo (metric system terminology for 1000)
- mV Millivolt (one-thousandth of a volt)
- rms Root-mean-square (a mathematical averaging method used in electronics where complex musical sounds are measured for intensity)
- S/N Signal-to-noise ratio (expressed in dB, an ability of the equipment to inherently amplify the desired signal without introducing extraneous electronic noise)
- VU Volume unit (a broadcasting-station method of analyzing intensity of amplitude of sound waves)

→ Variable (from/to) > More than < Less than

# The end of the fidelity gap between cassette and open reel.

Our RS-275US brings the low-noise, wide-response performance of open reel to a cassette deck. Frequency response: 30-15,000 Hz. Signal-to-noise ratio: better than 45 dB. Those are numbers you've probably never seen before in cassette.

The biggest reason for our lower noise and wider response is also the smallest. Panasonic patented a Hot Pressed Ferrite head with one of the world's narrowest, most precise gaps. You get a 25% broader frequency response with ten times the life of conventional heads.

A separate fast-forward and rewind motor means we don't

have to spin wheels with our drive motor. The motor that drives the tape drives it directly. No belts to give you the slip. No gears to start fluttering and wowing. The speed is constant. So is the lack of noise. Our patented drive motor is DC and brushless. No AC hum. No brushes to spark up static.

We're quiet in other ways, too. There's a special noise suppression circuit with its own switch. And a tape equalization switch for the newest low-noise super tapes.

Nobody else has all these low-noise, wide-response features in one great cassette deck.

And that's just for starters.

You'll find solenoid push-button operation for electrical, not mechanical switching. A "memory rewind" button that pre-sets the tape to stop right where you want it to. Two big VU meters. Separate output volume level controls before the signal goes into your amplifier. Optional remote control. And a walnut base as part of the deal.

When you're ready to get serious about a stereo cassette deck, see your franchised Panasonic Hi-Fi dealer for the RS-275US. The one that gives you reel sound.



**Panasonic**®  
just slightly ahead of our time.

200 Park Ave., N. Y. 10017. For your nearest franchised Panasonic Hi-Fi dealer, call 800 631-1971. In N. J., 800 962-2803. We pay for the call.

CIRCLE NO. 40 ON READER SERVICE CARD

# 5

# Cassette/ 8-Track Tape Machines

Recorders, Players, Recorder/Players, Decks

**T**HE cassette is a miniature tape-handling system, with the supply and takeup hubs and tape sealed in a compact plastic case. It is more compact and physically durable than phono discs and much easier to handle than records or tape reels.

Since cassettes operate at only 1 7/8 ips and have four narrow tracks on a tape only 0.150" wide, you would not expect them to compete in sound quality with discs or reel-to-reel tape systems. Early cassette recorders made no pretensions of "hi-fi" performance, and were characterized by limited high-frequency response, a high hiss level, frequent tape dropouts, and often audible flutter.

Progress in this field has been rapid and by 1970 there were a number of cassette recorders whose frequency response extended up to 10-12,000 Hz, with flutter reduced to acceptable levels. The hiss problem was attacked on two fronts. Tape manufacturers developed better tape, with fine grain structure and improved magnetic properties. These tapes made a substantial improvement in signal-to-noise ratio, as well as extending the high-frequency response and reducing the number of dropouts. At about the same time, the Dolby noise-reducing system (long used in professional recording studios) was adapted to consumer products. The combination of the Dolby "B" system and the new tape resulted in a "giant step" forward for the cassette medium.

The Dolby "B" system (as distinguished from the much more complex Dolby "A" system used professionally) boosts the high frequencies, principally above several kHz, in recording and reduces them in an exactly complementary fashion during playback. This action takes place only at low signal levels; at high levels the Dolby has no effect. The amount of boost and cut varies with recording level and the action is instantaneous and inaudible. The net result is an improvement of 8 to 10 dB in signal-to-noise ratio, apparent to the listener as a dramatic reduction in background hiss. Frequency response and distortion are completely unaffected by the Dolby action.

Since the Dolby system must be used in recording as well as playback, it cannot improve the noise level in existing tapes. However, several manufacturers of prerecorded cassettes now apply Dolby

processing to their releases, so that anyone with a Dolby-equipped cassette deck can enjoy the reduction in noise. These tapes sound a trifle "bright" when played back without the Dolby system, but can easily be compensated with amplifier tone controls.

During the past year, tape manufacturers have been very active and a number of improved tapes are now packaged in cassettes. The problems of jamming, slipping, or breaking tape which have plagued the cassette industry have been greatly reduced by improving mechanical design of the cassette package (but one should beware of un-branded, bargain-priced cassettes, which are usually of poor quality). Chromium-dioxide (CrO<sub>2</sub>) tape, available in limited quantities in 1970, is now used in cassettes packaged by several manufacturers. The recorder must be designed to use this tape, since it requires different bias and equalization than iron-oxide tapes to fully realize its advantages. With a suitable recorder, CrO<sub>2</sub> tape offers extended high-frequency response and lower noise.

Many of the newest cassette recorders have improved transports with lower flutter and less tendency to jam with balky cassettes. Many of the better ones have a bias-adjust switch to optimize them for CrO<sub>2</sub> tapes. The Dolby system is more widely used but some manufacturers have developed their own noise-reducing circuits which they claim give similar benefits. A number of recorders feature automatic shut-off devices, which completely disengage the mechanical tape drive when the end of the cassette is reached.

No longer can the cassette medium be relegated to second-class status in the hi-fi world. The newest decks, with CrO<sub>2</sub> tape and the Dolby system, have flat frequency response to beyond 15,000 Hz and a signal-to-noise ratio of 60 dB, matched by only a few semi-professional reel-to-reel recorders at 7 1/2 ips. The flutter of a high-quality cassette transport, although slightly higher than that of a good reel-to-reel machine, is well below 0.2% and can rarely be heard. Cassette tapes are still not amenable to editing, but from a listening standpoint have earned their place as a true hi-fi recording medium.

JULIAN D. HIRSCH

## ADVENT CORPORATION

### Model 201

Dolbyized deck; playback and record; response 35-14,500 Hz at ±2 dB; with chromium dioxide



tape; <1 1/2% total distortion; wow & flutter <0.15%; S/N 54 dB; VU meter; counter; auto shutoff; pause control; line inputs; 4 7/8" H x 13 3/4" W x 9 1/4" D; oiled walnut; \$280.00.

## AIWA

(Milovac International Co., Inc.)

### Model TP-1100

Deck only; play and record; response 30-15,000

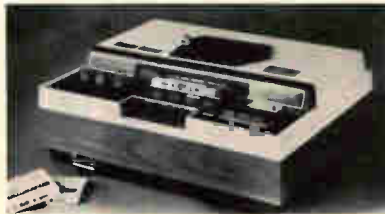
1972 EDITION

Hz (reference not stated); 1.5% distortion; wow & flutter 0.02%; hysteresis motor; S/N ratio 50 dB; VU meters; counter; eject button; auto shutoff; pause control; mike & line inputs; 3 3/16" x 12" x 10 3/16" D. \$139.95

## AKAI AMERICA, LTD.

### CS-50

Deck with amp; play and record; response 30-16,000 Hz at ±3.0 dB; 2% nominal distortion;



wow & flutter <0.2%; synchronous motor; S/N >45 dB; supplied with mikes; 8 W/channel; VU meters; counter; eject button; tone controls; auto reverse; auto shutoff; pause; monitoring; mike & line inputs; available as Model CS-50D without amplifier and microphones — price n.a.; 6 1/4" H x 15" W x 11 1/4" D; walnut; \$129.95.

## ALLIED RADIO SHACK

### Realistic SCT-3B

Deck only; play and record; response 40-12,000 Hz (reference not stated); VU meters; counter; eject button; pause; mike & line inputs; \$89.95.

### Realistic SCT-5

Deck only; play and record; VU meters; auto shutoff; pause; mike & line inputs; bias adjust; \$119.95.

## AMPEX CORP.

### Micro 52

Deck only; play and record; response 40-12,000 Hz (reference not stated); wow & flutter 0.25%; hysteresis motor; S/N 45 dB; supplied with mikes; VU meters; counter; eject button; pause; mike & line inputs; dust cover; 10 1/4" H x 16 1/4" W x 5 3/4" D; walnut; \$169.95.

### Micro 54

Deck only; play and record; response 40-12,000 Hz (reference not stated); wow & flutter 0.25%; hysteresis motor; S/N 45 dB; supplied with mikes; VU meters; counter; eject button; auto shutoff; pause; mike & line inputs; hiss filter;

# 5

## Cassette Tape Machines

over-all size 4 $\frac{3}{4}$ " H x 16 $\frac{1}{2}$ " W x 11 $\frac{1}{4}$ " D; walnut; \$159.95.

### Micro 87R

Deck with amp/AM-Stereo FM tuner; response 40-12,000 Hz (reference not stated); wow &



flutter 0.25%; hysteresis motor; S/N 45 dB; supplied with mikes; supplied with speakers; VU meters; counter; eject button; tone controls; pause; monitoring; mike & line inputs; phono input; dust cover; also available without tuner as Model 87—\$219.95; 10 $\frac{1}{4}$ " H x 13 $\frac{3}{8}$ " W x 6 $\frac{3}{4}$ " D; walnut; \$299.95.

### Micro 88

Deck with amp; play and record; supplied with mikes and speakers; VU meters; counter; eject button; tone controls; pause; mike & line inputs; over-all size 14 $\frac{9}{16}$ " H x 16" W x 7 $\frac{3}{4}$ " D; walnut; \$179.95.

### Micro 155

Deck with amp; play and record; hysteresis motor; VU meters; counter; eject button; auto



reverse; pause; mike & line inputs; bias switch; hiss filter; solenoid operation; 5 $\frac{3}{4}$ " H x 17 $\frac{1}{4}$ " W x 9 $\frac{1}{4}$ " D; \$<300.00.

### Micro 187R

Deck with amp/AM-Stereo FM tuner; play and record; hysteresis motor; supplied with mikes



and speakers; VU meters; counter; eject button; tone controls; auto reverse; pause; mike & line inputs; phono input; hiss filter; over-all dimensions 11" H x 10 $\frac{1}{2}$ " W x 8 $\frac{1}{2}$ " D; walnut enclosure; <\$450.00.

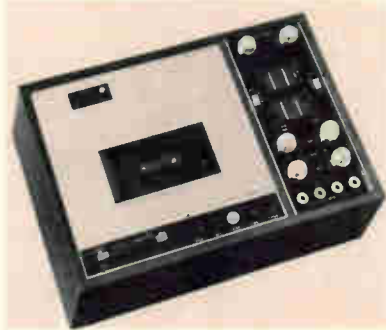
### Micro 335

12 cassette changer; play and record; VU meters; counter; eject button; auto reverse; pause; mike & line inputs; dust cover; over-all dimensions 9" H x 18 $\frac{1}{2}$ " W x 10 $\frac{1}{4}$ " D; walnut enclosure; <\$350.00.

## ASTROCOM/MARLUX, INC.

### Astrocom 307

Deck with amp; play and record; response 30-12,000 Hz (reference not stated); wow & flutter



<0.14%; hysteresis motor; S/N >46 dB; four VU meters; counter; eject button; auto reverse; auto shutoff; pause; mike & line inputs; remote control optional; bias switch; \$500.00.

## BELL & HOWELL CO.

### Model 3410

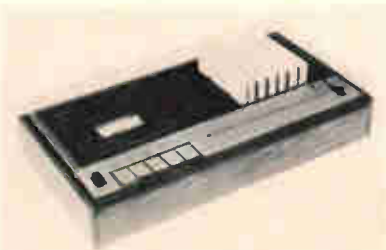
Deck with amp/AM-Stereo FM tuner; play and record; response 60-8000 Hz (reference not



stated); wow & flutter 0.3%; S/N 45 dB; supplied with mike and speakers; 17 $\frac{1}{2}$ " W/channel; VU meters; counter; eject button; tone controls; auto reverse; auto shutoff; mike & line inputs; phono input; 10 $\frac{1}{2}$ " H x 23 $\frac{1}{2}$ " W x 7" D; \$259.95

### Model 3100

Deck only; play and record; response 40-12,000 Hz (reference not stated); wow & flutter 0.25%;



synchronous motor; S/N 45 dB; record indicator; counter; eject button; mike & line inputs; dust cover; 8 $\frac{1}{8}$ " H x 15 $\frac{1}{4}$ " W x 4" D; walnut; \$89.95

## BOGEN DIV.

(Lear Siegler, Inc.)

### Model CRP

Deck with preamp; play and record; wow & flutter 0.25%; VU meters; counter; eject button; auto shutoff; pause; mike inputs; \$149.95.

## CONCORD ELECTRONICS CORP.

### Mark IX

Dolbyized deck; play and record; response 30-15,000 Hz (reference not stated); <1.5% total distortion; wow & flutter <0.2%; S/N >50 dB; VU meters; counter; eject button; auto shutoff;



pause; monitoring; mike and line inputs; dust cover; center channel mike input; 4 $\frac{1}{2}$ " H x 16" W x 10 $\frac{5}{8}$ " D; \$299.95.

### Model F-107

Deck only; play and record; response 30-13,000 Hz (reference not stated); wow & flutter <0.2%; hysteresis motor; S/N >47 dB; VU meters; counter; eject button; auto shutoff; pause; monitoring; mike & line inputs; 3 $\frac{1}{2}$ " H x 15 $\frac{1}{8}$ " W x 10 $\frac{1}{4}$ " D; \$179.95.

### Model F106E

Deck only; play and record; response 40-12,000 Hz (reference not stated); wow & flutter <0.2%; S/N >46 dB; supplied with mikes; VU meters; counter; eject button; auto shutoff; pause; monitoring; mike & line inputs; remote; dust cover; 3 $\frac{1}{2}$ " H x 10 $\frac{1}{4}$ " W x 10 $\frac{1}{2}$ " D; \$149.95.

### Model F-120

Deck only; play and record; response 50-10,000 Hz (reference not stated); wow & flutter 0.3%



S/N 43 dB; VU meters; counter; eject button; changer mechanism (12 cassettes); auto shutoff; pause; mike & line inputs; dust cover; 6 $\frac{3}{4}$ " H x 14" W x 11 $\frac{1}{8}$ " D; \$229.95.

## CRAIG CORP.

### Model 2609

Deck with amp/AM-Stereo FM tuner; play and record; response 80-8000 Hz (reference not stated); wow & flutter <0.35%; S/N >40 dB;



supplied with mikes and speakers; 1 $\frac{1}{2}$ " W/channel; eject button; balance control; mike & line inputs; phono input; can be battery operated; 8 $\frac{1}{8}$ " H x 12 $\frac{1}{4}$ " W x 6 $\frac{1}{8}$ " D; \$179.95.

### Model 2709

Deck with amp; play and record; response 50-10,000 Hz (reference not stated); wow & flutter



<0.3%; S/N >40 dB; supplied with mikes and speakers; 3 W/channel; VU meters; counter; eject button; balance; auto reverse; pause; mike & line inputs; phono input; 9 1/4" H x 25 3/4" W x 5 1/2" D; \$229.95.

#### Model 2705

Deck with amp/AM-Stereo FM tuner; play and record; response 50-10,000 Hz (reference not

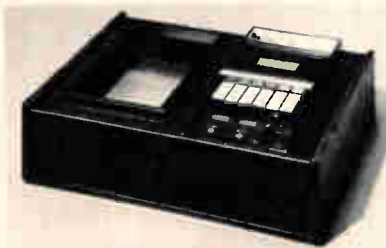


stated); supplied with mikes and speakers; 3/4 W/channel; VU meters; counter; eject button; pause control; microphone & line inputs; over-all dimensions 4 7/8" H x 15 7/8" W x 10 1/4" D; \$239.95

### ELECTROHOME LTD.

#### SC 452

Deck only; play and record; response 50-10,000



Hz at  $\pm 3.0$  dB; wow & flutter <0.3%; VU meters; counter; pause; mike & line inputs; \$159.95.

### FISHER RADIO

#### RC-80B

Dolbyized deck; play and record; response 30-14,000 Hz (reference not stated); wow & flutter 0.2%; S/N >50 dB; VU meters; counter; eject button; automatic shutoff; pause control; monitoring facilities; microphone & line inputs; bias adjust; 3 1/2" H x 7 1/8" W x 11 1/8" D; \$229.95.

### GENERAL ELECTRIC CO.

#### Model M8550

Deck with amp/AM-FM tuner; play and record;



supplied with mikes and speakers; record indicator; eject button; tone controls; pause; mike & line inputs; 8 5/8" H x 12 5/8" W x 5 3/4" D; \$99.50.

1972 EDITION

### GRUNDIG ELECTRONIC SALES, INC.

#### SCR-100

Deck with amp/AM-Stereo FM tuner; play and record; supplied with mikes and speakers; VU



meters; eject button; tone controls; auto shutoff; monitoring; mike & line inputs; 5 1/2" H x 16 3/4" W x 13" D; walnut; \$269.95.

#### SCR-500

Deck with amp/AM-Stereo FM tuner; play and record; supplied with mikes and speakers; 35



W/channel; VU meters; counter; eject button; tone controls; auto shutoff; pause; monitoring; mike & line inputs; phono input; 5 1/2" H x 22" W x 12" D; \$495.00.

### HARMAN-KARDON, INC.

#### CAD-5

Dolbyized deck; play and record; response 30-12,000 Hz at  $\pm 2.0$  dB; <1.0% HD distortion; wow & flutter 0.15%; VU meters; mike & line inputs; bias adjust; \$229.95.

### HEATH COMPANY

#### AD-110

Deck only; play and record; response 30-12,000 Hz at  $\pm 3.0$  dB; 0.25% distortion; wow & flutter



<0.25%; S/N 45 dB; VU meters; eject button; pause; mike & line inputs; adjustable bias; 11" H x 13 3/8" W x 3 1/8" D; walnut; \$119.95 (kit).

### HITACHI SALES CORP.

#### KST-3410

Deck with amp/AM-Stereo FM tuner; play and record; supplied with speakers; 18 W/channel; VU meters; eject button; tone controls; pause; monitoring; mike & line inputs; \$239.95.

#### TRQ-242

Deck only; play and record; response 40-12,000 Hz (reference not stated); S/N >45 dB; VU meters; counter; eject button; mike inputs; 3 1/8" H x 7 3/8" W x 10 3/16" D; \$99.95.

#### TRQ-262

Deck only; play and record; 20-18,000 Hz (reference not stated); wow & flutter <0.15% S/N >50 dB; VU meters; counter; eject button; auto

# Sensational sound is not enough.

Sure, sound is vitally important. And Maxell tape is made to be the highest quality compatible with the state of the art.

But in cassettes, tape can't be any better than the cassette "shell" itself.

Which is why Maxell has spent seven years developing and perfecting a cassette that provides continuous trouble-free performance.

### QUALITY "SHELLS"

Maxell tapes do not get mangled in the cassette machinery because we have refused to cut corners in the manufacture of our cassette "shell". For example, the Maxell shell is made of heavy duty plastic—actually 40% more plastic than in competitive shells. And unlike other cassette shells, which use fixed posts held in place by plastic pins, Maxell uses nylon roller guides held in place by stainless steel. This provides virtually friction-free action and eliminates a major cause of skipping and jumping.

The windows are sonically sealed to lock out dust. Near indestructible Teflon slip sheets are used to keep the tapes rolling without engaging and jamming the cassette.

### NO NEED FOR RETURNS

Like most other cassettes, Maxell cassettes come with life-time guarantees. But unlike most other cassettes, you never have to bring them back.

**Cassettes:** Ultra Dynamic and Low Noise Tape available in all standard program lengths.

**Open Reel:** Ultra Dynamic and Low Noise 7-inch and 10 1/2-inch.

**8-Track Cartridges:** Highest quality tape and automatic tape lock.

# maxell®

Maxell Corporation of America  
501 Fifth Avenue, New York, N.Y. 10017

CIRCLE NO. 37 ON READER SERVICE CARD

# 5

## Cassette Tape Machines



shutoff; pause; monitoring; has provisions for mike & line inputs; overall size 3<sup>3</sup>/<sub>8</sub>" H x 13<sup>1</sup>/<sub>8</sub>" W x 9<sup>3</sup>/<sub>8</sub>" D; \$129.95.

### TRQ-282

Deck only; play and record; response 40-12,000 Hz (reference not stated); wow & flutter <0.3%;



S/N >46 dB; VU meters; counter; eject button; pause; monitoring; mike & line inputs; 3<sup>5</sup>/<sub>8</sub>" H x 8<sup>1</sup>/<sub>8</sub>" W x 10<sup>3</sup>/<sub>4</sub>" D; \$109.95.

### JVC AMERICA, INC.

(Subs. of Victor Co. of Japan, Ltd.)

### Model 1660-2

Deck only; play and record; response 30-18,000 Hz (reference not stated); wow & flutter <0.2%; S/N >45 dB; VU meters; counter; eject button; pause; monitoring; mike & line inputs; 3<sup>7</sup>/<sub>16</sub>" H x 11<sup>1</sup>/<sub>16</sub>" W x 9" D; \$119.95.

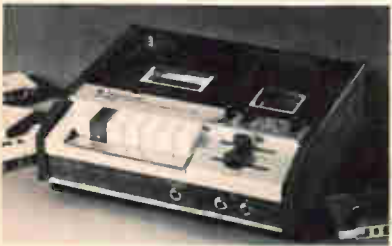
### Model 9450

Deck with amp/AM-Stereo FM tuner; play and record; supplied with mikes and speakers; 20 W/channel; VU meters; counter; eject button; tone controls; auto shutoff; pause; mike inputs; 5<sup>1</sup>/<sub>2</sub>" H x 16<sup>3</sup>/<sub>4</sub>" W x 13" D; \$199.95.

### KENWOOD ELECTRONICS, INC.

### KX-7010A

Deck only; play and record; response 40-12,000 Hz (reference not stated); <0.5% HD distortion;



wow & flutter <0.2%; hysteresis motor; S/N >45 dB; VU meters; counter; eject button; pause; monitoring; mike & line inputs; bias adjust; hiss filter; 4" H x 10<sup>1</sup>/<sub>2</sub>" W x 9" D; walnut; \$149.95.

### LAFAYETTE RADIO

### RK-D40

Dolbyized deck; play and record; response 40-13,000 Hz (reference not stated); 2.5% total distortion; wow & flutter 0.25%; hysteresis motor;

S/N 49 dB; VU meters; counter; eject button; auto shutoff; pause; monitoring; mike & line inputs; bias adjust; sound-with-sound; 4<sup>3</sup>/<sub>4</sub>" H x 11<sup>3</sup>/<sub>4</sub>" W x 11<sup>3</sup>/<sub>4</sub>" D; \$179.95.

### RK-520

Deck with amp; play and record; response 50-11,000 Hz (reference not stated); 2.5% total distortion; wow & flutter <0.25%; S/N 48 dB; supplied with mikes and speakers; 10 W/channel; VU meters; counter; eject button; tone controls; auto shutoff; pause; monitoring; mike & line inputs; bias adjust; sound-with-sound; 4<sup>3</sup>/<sub>8</sub>" H x 15<sup>1</sup>/<sub>2</sub>" W x 11" D; \$179.95.

### RK-760A

Deck only; play and record; response 30-12,000 Hz (reference not stated); 2.5% total distortion;



wow & flutter 0.3%; hysteresis motor; S/N 48 dB; VU meters; counter; eject button; auto shutoff; pause; monitoring; mike & line inputs; bias adjust; sound-with-sound; 4<sup>1</sup>/<sub>2</sub>" H x 9" W x 12<sup>3</sup>/<sub>8</sub>" D; \$99.95.

### LRK-900

Deck with amp/AM-Stereo FM tuner; play and record; wow & flutter 0.25%; S/N 48 dB; 10 W/channel; VU meters; counter; eject button; tone controls; auto shutoff; pause; monitoring; mike inputs; phono input; bias adjust; sound-with-sound; with manufacturer's 4 channel Stereo Composer circuit for matrixed (Dynaco) program material; 4" H x 10<sup>1</sup>/<sub>4</sub>" W x 11<sup>7</sup>/<sub>8</sub>" D; \$199.95.

### LRK-1600

Deck with amp/AM-Stereo FM tuner; play and record; response 45-10,000 Hz (reference not



stated); <3.0% total distortion; wow & flutter 0.3%; hysteresis motor; S/N >35 dB; 50 W/channel; VU meters; counter; eject button; tone controls; auto shutoff; pause; monitoring; mike inputs; 5<sup>3</sup>/<sub>4</sub>" H x 21<sup>1</sup>/<sub>2</sub>" W x 14" D; walnut; \$279.95.

### MICOTRON

### Model 12-154

Deck only; play and record; response 40-12,000 Hz (reference not stated); wow & flutter 0.1%; synchronous motor; supplied with mikes; VU



meters; eject button; mike & line inputs; phono input; 2<sup>7</sup>/<sub>8</sub>" H x 13<sup>1</sup>/<sub>2</sub>" W x 9<sup>1</sup>/<sub>2</sub>" D; walnut; \$114.95.

### 12-157

Deck with amp; play and record; response 40-12,000 Hz (reference not stated); wow & flutter



0.1%; synchronous motor; supplied with mikes and speakers; 2 W/channel; VU meters; eject button; mike & line inputs; 2<sup>7</sup>/<sub>8</sub>" H x 13<sup>1</sup>/<sub>2</sub>" W x 9<sup>1</sup>/<sub>2</sub>" D; walnut; \$149.95.

### Model 19-584

Deck with amp/AM-Stereo FM tuner; play and



record; response 60-12,000 Hz (reference not stated); wow & flutter 0.15%; hysteresis motor; supplied with mikes & speakers; 5 W/channel; VU meters; counter; eject button; tone controls; auto shutoff; pause control; mike & line inputs; phono input; over-all dimensions 5" x 19" x 10<sup>1</sup>/<sub>2</sub>" D; \$249.95.

### MOTOROLA INC.

### Model GA16GW

Deck only; play and record; supplied with



mikes; VU meters; counter; eject button; auto shutoff; pause control; microphone & line input. \$129.95.

### NORELCO

(North American Philips Corp.)

### Model 2000

Deck only; play and record; VU meters; counter; eject button; auto shutoff; pause control; mike & line inputs; supplied with mikes; walnut; \$109.95

### Model 2100

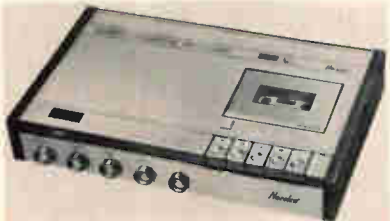
Deck only; play and record; VU meters; counter; eject button; pause; monitoring; mike & line



inputs; features Philips Dynamic Noise Limiter; bias adjust; 3 7/8" H x 12 3/4" W x 10 1/2" D; \$219.95.

### Model 2400

Deck with amp; play and record; response 60-10,000 Hz at ±3.0 dB; S/N 45 dB; supplied with



mikes and speakers; 4 W/channel; VU meters; counter; eject button; tone controls; auto shutoff; pause; monitoring; mike & line inputs; phono input; available without speakers as Model 2400A—\$149.95; 3" H x 14" W x 8 1/2" D; \$189.95.

### Model 3170

Deck with amp/AM-Stereo FM tuner; play and record; supplied with speakers; counter; eject



button; tone controls; pause; may be battery-operated; bias adjust; \$219.95.

## PANASONIC

(Matsushita Electric Corp. of America)

### RS 256

Deck only; play and record; response 30-12,000 Hz (reference not stated); VU meters;



counter; eject button; auto shutoff; pause; mike & line inputs; hiss suppression; 3 3/4" H x 10 7/16" W x 10" D; \$109.95.

### RS-272 (Hartsdale)

Similar to Model RS-270, but with auto reverse; \$149.95.

### RS-275

Play and record; response 30-15,000 Hz (reference not stated); wow & flutter <0.1%; two motors; S/N >45 dB; VU meters; counter; eject

1972 EDITION

button; auto shutoff; pause; monitoring; mike & line inputs; remote control optional extra; bias adjust; memory rewind; 5 1/8" H x 16 1/2" W x 12" D; \$249.95.

### RS-270 (Middlebury)

Deck only; play and record; VU meters; count-



er; eject button; auto shutoff; pause; monitoring; mike & line inputs; bias adjust; memory rewind; walnut; \$129.95.

## PAX, LTD.

### PD 101

Deck only; play and record; response 50-15,000 Hz (reference not stated); wow & flutter <0.2%; hysteresis motor; S/N 44 dB; VU meters; counter; eject button; auto shutoff; pause; mike & line inputs; phono input; \$129.95.

## PILOT RADIO-TELEVISION CORP.

### PTD-100/100A

Deck only; play and record; response 30-15,000 Hz (reference not stated); <0.2% total HD; wow & flutter 0.2%; synchronous motor; S/N 45 dB; supplied with mikes; counter; eject button; auto shutoff; pause; monitoring; mike & line inputs; bias adjust; 3 7/8" H x 12 3/4" W x 9" D; walnut \$169.95.

## PIONEER

(U.S. Pioneer Electronics Corp.)

### Model T-3300

Deck only; play and record; response 40-12,000 Hz (reference not stated); 1.3% total distortion; wow & flutter <0.2%; hysteresis motor; S/N 52 dB; VU meters; counter; eject button; auto shutoff; pause; monitoring; mike & line inputs; 4 3/16" H x 13" W x 8 1/16" D; \$149.95.

## RHEEM CALIFONE

(Div. of Rheem Mfg. Co.)

### Model CR-5

Deck with amp mono play and record; response 50-10,000 Hz at ±3.0 dB; <5.0% total distortion; wow & flutter <0.25%; hysteresis motor; S/N 45 dB; 20 W/channel; VU meter; counter; eject button; tone control; pause; 7 1/4" H x 15" W x 10" D; metal (with carrying handle); \$175.00.

## ROBERTS

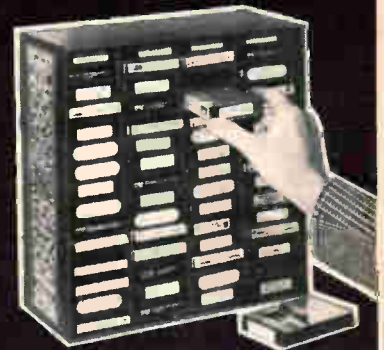
(Div. of Rheem Mfg. Co.)

### Model 95

Deck only; play and record; supplied with



## DELUXE CASSETTE STORAGE CASES



Designed by the Editors of STEREO REVIEW MAGAZINE

- Individual storage slots for 60 cassettes.
- 13 1/2" high, 12 5/8" deep, 5 1/2" wide — designed to fit on the same bookshelf as your disc collection.
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The Stereo Review Cassette Storage Case is the answer to the cassette storage problem.

A smaller Storage Case holding 30 cassettes is also available. It measures 13 1/2" high, 6 1/2" deep, 5 1/2" wide and is available in the same choice of decorator colors.

## 8-TRACK CARTRIDGE CASE TOO.



For those of you faced with similar storage problems for your 8 track cartridges, this attractive unit is your solution. It measures 13 3/4" high, 6 1/2" deep, 4 1/2" wide, has individual storage slots for 12 cartridges and is of the same sturdy construction and decorative appearance as the Cassette Case.

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My remittance in the amount of \$\_\_\_\_\_ is enclosed for the Cases indicated below:

- \_\_\_\_\_ 60-unit Cassette Storage Cases @ \$13.95 each; 2 for \$25.00
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- \_\_\_\_\_ 12-unit Cartridge Storage Cases @ \$4.95 each; 3 for \$13; 6 for \$25

Add 50c per unit ordered for postage and handling (except orders for 6-8 track Cartridge Cases—Add \$1.50 total). Outside U. S. A. add \$1.00 per unit ordered.

Check color choice for back of case (sides in black only):  Brown  Green  Black

print name \_\_\_\_\_  
address \_\_\_\_\_  
city \_\_\_\_\_  
state \_\_\_\_\_ Zip \_\_\_\_\_

PAYMENT MUST BE ENCLOSED WITH ORDER

# 5

## Cassette Tape Machines

mikes; VU meters; counter; eject button; pause; mike & line inputs; walnut; \$99.95.

### SHARP ELECTRONICS CORP.

#### RD-423

Deck only; play and record; response 40-13,000 Hz (reference not stated); wow & flutter 0.18%;



supplied with mikes; VU meters; counter; eject button; pause; mike & line inputs; 3 3/4" H x 10 1/8" W x 10 5/16" D; \$99.95.

### SONY/SUPERSCOPE

(Superscope, Inc.)

#### CF-500

Deck with amp/AM-Stereo FM tuner; play and record; response 30-12,000 Hz (reference not stated); wow & flutter 0.2%; S/N 40 dB; supplied with mikes and speakers; 5 W/channel; VU meters; counter; eject button; tone controls; pause; monitoring; mike & line inputs; 5 1/2" H x 11 1/8" W x 11 1/8" D; \$199.95.

#### CF-620

Deck with amp/AM-Stereo FM tuner; play and record; response 30-12,000 Hz (reference not



stated); wow & flutter 0.22%; S/N 46 dB; supplied with mikes and speakers; 6 W/channel; VU meters; counter; eject button; pause; monitoring; mike & line inputs; bias adjust; also available as portable as Model CF-610—\$289.95; 5 7/16" H x 16 1/2" W x 12 1/4" D; \$299.95.

#### Model 127

Deck only; play and record; response 30-12,000 Hz (reference not stated); wow & flutter 0.2%; S/N 48 dB; VU meters; counter; eject button; pause; monitoring; mike & line inputs; bias adjust; peak limiter; 3 7/8" H x 15 3/4" W x 8 5/8" D; \$149.95.

#### Model 160

Deck only; play and record; response 20-16,000 Hz (reference not stated); wow & flutter 0.1%; S/N 49 dB; VU meters; counter; eject button; pause; monitoring; mike & line inputs; peak limiting; bias adjust; also available with auto shutoff and auto reverse as Model 165—



\$259.95; 5" H x 15 3/4" W x 10 7/8" D; \$199.95.

### STANDARD RADIO CORP.

#### Model T178DK

Deck only; play and record; response 30-15,000 Hz (reference not stated); wow & flutter <0.2%;



hysteresis motor; S/N >45 dB; VU meters; counter; eject button; auto shutoff; pause; monitoring; mike & line inputs; 3 3/4" H x 12 3/4" W x 9" D; walnut; \$169.95.

#### Model T180DK

Similar to Model T178DK, but with Dynamic Noise Suppression System; \$199.95.

### TEAC CORP. OF AMERICA

#### Model 350

Dolbyized deck; play and record; response 30-16,000 Hz (reference not stated); wow & flutter



0.13%; hysteresis motor; S/N 58 dB; VU meters; counter; eject button; auto shutoff; pause; monitoring; mike & line inputs; 4 3/8" H x 16 1/16" W x 9 7/8" D; \$279.50.

#### Model A-23

Deck only; play and record; hysteresis motor; VU meters; counter; eject button; pause; mike inputs; \$139.50.

#### Model A-24

Deck only; play and record; response 40-12,000 Hz (reference not stated); wow & flutter 0.2%; hysteresis motor; S/N 45 dB; VU meters; counter; eject button; auto shutoff; pause; monitor-



ing; mike & line inputs; 4 3/4" H x 13 5/8" W x 9 5/8" D; \$199.50.

#### Model A-25

Similar to Model A-24, but with 10 W/channel amplifiers; supplied with speakers; phono input; \$279.50.

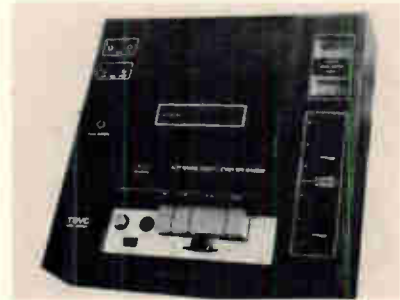
#### Model AC-7

Deck with amp; play only; response 40-8,000 Hz (reference not stated); wow & flutter 0.3%; 3 W/channel; eject button; for auto use; requires 12 V d.c.; 7 3/4" H x 9" W x 7 1/2" D; \$129.50.

### TOYO

#### Model 591

Desktop stereo cassette player/recorder with reverse/repeat switch; repeat position rewinds tape automatically and repeats it as long as power is on; reverse position of function switch causes playing (or recording) heads to switch from one pair of tracks automatically when end



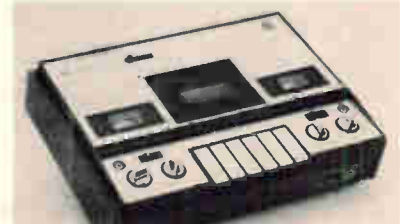
of that pair of tracks has been reached, then play (or record) second pair of tracks backwards, allowing for up to two hours of continuous playing or recording; complete with two dynamic microphones and walnut cabinet \$159.95.

### WEECOR

(Consolidated Merchandising Co.)

#### WFX252

Deck only; play and record; VU meters; count-



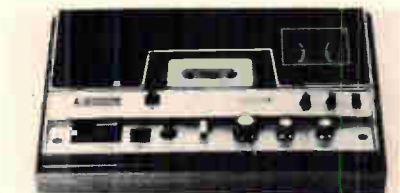
er; eject button; pause; monitoring; mike & line inputs; phono input; sound-on-sound; hiss filter; 4" H x 13 3/8" W x 9 5/8" D; \$79.95.

### WOLLENSAK

(3M Co. Mincom Div.)

#### Model 4760

Dolbyized deck; play and record; response 35-15,000 Hz at ±2.0 dB; wow & flutter 0.15%; S/N



>54 dB; VU meters; counter; eject button; auto shutoff; pause; monitoring; mike & line inputs; bias adjust; microphone preamp—\$29.95; Model 4755 similar, but without Dolby—\$199.95; \$279.95.



# 5

## 8-Track Tape Machines

### AKAI AMERICA, LTD.

#### Model CR-80

Amplified record/play deck with 24 watts music power output; features one-micron gap tape



head; two VU meters; automatic stop control; sliding tone and volume controls; microphone and line inputs; response 50-16,000 Hz. S/N ratio better than 47 dB; wow and flutter less than 0.25% rms; \$189.95.

### AMPEX CORP.

#### Model 8200

Cartridge recorder/player/AM-Stereo FM receiver; two matching speaker systems; fast-



forward; sliding volume, balance, bass and treble controls; slope-front cabinet; automatic level control, Stereo FM light; response 40-12,000 Hz; S/N ratio 45 dB; wow and flutter 0.20%; peak music power 45 watts; \$349.95.

#### Model HCR-8

Record/play deck for use in audio system; record indicator light; fast-forward; automatic



level control (a.l.c.); push-button eject; response 40-12,000 Hz; S/N ratio 45 dB; wow and flutter 0.2%; \$179.95.

### BELL & HOWELL CO.

#### Model 3420

Cartridge player/AM-Stereo FM receiver with



1972 EDITION

two matching speaker systems; features illuminated tuning meter; slide-rule dial; a.f.c. switch; a.c. convenience outlet; full array of input and output jacks; Stereo FM lamp; response 60-10,000 Hz; wow and flutter 0.2% rms; \$149.95.

### BOGEN DIV. (Lear Siegler, Inc.)

#### Model 8P

Playback deck for use in audio system; features



"Micro Balance" fine tuning control for better tracking and reduced noise and crosstalk; walnut cabinet trimmed in gold; \$79.95.

### BSR McDONALD (BSR-USA-Ltd.)

#### Model RD-8S

Record/play deck for audio system; dual VU meters, microphone and auxiliary mixing; wow and flutter 0.3% rms; response 30-15,000 Hz; S/N ratio 40 dB; over-all 12 $\frac{1}{4}$ " x 10 $\frac{1}{4}$ " x 4 $\frac{1}{2}$ "; \$199.95.

#### Model RS-28

Cartridge player/AM-Stereo FM receiver with 10 watts/channel dynamic (IHF) power; complete with two matching speaker systems; \$219.95.

### CLARICON

#### Model 26-200

Cartridge player/AM-Stereo FM receiver with two matching speaker systems; features 7 push-button controls; linear balance; tone and volume controls; a.f.c.; stereo indicator light; stereo headphone jack on front panel; full complement of inputs and outputs; \$119.95.

#### Model 26-535

Cartridge player/AM-Stereo FM receiver plus matching speaker systems with exposed



tweeters; has 9 push-buttons; 4 sliding controls; full array of input/output connections; feed slot has dust cover; output 60 watts music power; FM sensitivity 3 microvolts; response 30-25,000 Hz; \$169.95.

#### Model 36-840A

Cartridge player/AM-Stereo FM receiver plus matching speaker systems with exposed horn tweeters; features 11 push-button function controls; Stereo FM indicator; inputs for magnetic or ceramic cartridge; front stereo headphone jack; output 90 watts music power; FM sensitivity 2 microvolts; response 20-30,000 Hz; \$229.95.

### CONCORD ELECTRONICS CORP.

#### Model F-128

Record/play with preamplifiers for use in audio system; two VU meters; three-digit tape counter;



slide record-level controls; fast-forward control; headphone jack; response 50-10,000 Hz; S/N ratio 45 dB; wow and flutter less than 0.3% rms; \$159.95.

### EICO ELECTRONIC INSTRUMENT CO., INC.

#### Model TD-8

Home player deck for use in audio system; channel selector; channel indicators; feed slot



with dust cover; wow and flutter less than 0.3% rms; S/N ratio better than 38 dB; metal cabinet, walnut grain finish; 9" x 4 $\frac{1}{4}$ " x 9 $\frac{1}{4}$ "; \$49.95.

### GENERAL ELECTRIC

#### Model M8621

Player system comprised of deck and two speaker systems; tone, volume and balance controls; stereo headphone jack; output 10 watts (EIA) music power; \$99.95.

#### Model M8635

Cartridge player/AM-Stereo FM receiver with two matching speaker systems; dust-guard cartridge door; front-panel stereo headphone jack; switchable a.f.c.; array of inputs and outputs; power 10 watts (EIA); \$139.95.

#### Model M8630

Cartridge player/AM-Stereo FM receiver with two matching speaker systems; separate tone



controls; switchable a.f.c.; sliding controls; stereo headphone jack; phono input; tape output jacks; output 18 watts (EIA) music power; \$179.95.

#### Model M8640

Recorder/player/AM-Stereo FM receiver with two speaker systems; records off tuner circuit or external source; four sliding controls; switchable a.f.c.; automatic level control (a.l.c.); phono input; tape output; stereo headphone jacks; output 18 watts (EIA) music power; \$239.95.

# 5

## 8-Track Tape Machines

### HEATH COMPANY

#### Model GD-28

Home playback deck for use in component sys-



tem; response 50-10,000 Hz; cabinet 10 $\frac{1}{2}$ " x 4 $\frac{1}{2}$ " x 8 $\frac{1}{4}$ "; furnished with a simulated walnut finish cabinet; \$59.95.

### HITACHI SALES CORP.

#### Model KSP-2850

Cartridge player/AM-Stereo FM receiver with matched speaker systems; features black-out tuning dial; stereo beacon; automatic tape repeat button; individual tone controls; input for phono turntable; output for tape recorder; power output 10 watts per channel music power; \$229.95.

#### Model KSP-2810

Cartridge player/AM-Stereo FM receiver; complete with matching speaker systems; features slope-front styling; sliding tone and balance controls; a.f.c.; tuning meter; stereo indicator; black-out tuning dial; output 18 watts music power; \$199.95.

#### Model TPQ-124

Home player deck for use in audio system;



select/eject controls; program indicator lights; dust cover on loading slot; 11 $\frac{1}{4}$ " x 10" x 4"; \$79.95.

### LAFAYETTE RADIO

#### Model RK-809A

Record/play deck for use in audio system; sound-with-sound mixing; fast-forward; two VU meters; automatic cartridge ejector; response 30-12,000 Hz; \$129.95.

#### Model RK-800A



Home playback deck for use in audio system; response 30-12,000 Hz; \$54.95.

### Model LR-828

Cartridge player/AM-Stereo FM receiver with matching speaker systems; separate slide controls for tone and balance; front-panel stereo headphone jack; Stereo FM light; full complement of inputs and outputs; output 2 watts rms; \$99.95.

### MERCURY

#### Model PR-700

Record/play deck with preamplifiers for use in component system; includes two separate VU meters; separate sliding volume controls; fast-forward; automatic eject; manual eject; fine tuning for optimum tracking; hysteresis synchronous motor; headphone jack; response 60-14,000 Hz; S/N ratio better than 45 dB at 3% distortion; \$139.95.

#### Model PX505

Cartridge player/AM-Stereo FM receiver with matched speaker systems; sliding tone, volume and balance controls; a.f.c.; stereo indicator light; five push-button selectors; stereo headphone jack; \$199.95.

#### Model PX507

Cartridge player/AM-Stereo FM receiver with matched speaker systems; black-out slide-rule dial; stereo indicator light; a.f.c.; slide controls for volume, tone and balance; stereo headphone jack; phono input; \$149.95.

#### Model PR-900

Recorder/player/AM-Stereo FM receiver with matched speaker systems; six slide controls; two VU meters; individual channel lamps; fast-forward and pause controls; permits headphone monitoring; response 50-15,000 Hz; S/N ratio better than 40 dB; wow and flutter less than 0.2% rms; output 30 watts; \$289.95.

#### Model PX201

Home player with matched speaker systems; four slide controls for tone and volume levels; indicator lights; dust cover on loading door; \$114.95.

#### Model PX805

Home player deck for use in audio system; auto/manual channel selector; individual channel lights; walnut-grain cabinet; 9" x 8 $\frac{1}{4}$ " x 4 $\frac{1}{2}$ "; \$44.95.

### MICOTRON

#### Model 19-578

Combination cartridge recorder/AM-Stereo FM receiver with matching speaker systems; slide



controls for volume, tone, balance and recording levels; fast-forward; pause; auto stop; power restart; hysteresis synchronous motor; stereo headphone jack; recorder response 40-12,000 Hz; receiver 40-20,000 Hz; output 5 watts/channel rms, 2% THD into 8 ohms; \$249.95.

#### Model 19-531

Cartridge player/AM-FM receiver with two matching speaker systems; full complement of controls, inputs and outputs; front-panel stereo headphone jack; response 40-18,000 Hz; output 2.5 watts/channel rms at 10% THD; \$129.95.

#### Model 12-629

Cartridge player with two matching speaker

systems; slide controls; automatic or manual program selection; response 50-10,000 Hz; output 2 watts/channel rms, 10% THD; \$89.95.

#### Model 12-623

Home player deck for use in component system; automatic or manual program selector; indi-



vidual program indicator lights; response 50-10,000 Hz; wood cabinet; 9 $\frac{3}{4}$ " x 4 $\frac{1}{2}$ " x 9"; \$46.90.

#### Model 19-572

Cartridge player/AM-Stereo FM receiver with matching speaker systems; slide controls for



volume, tone and balance; rocker switches for other functions; response 35-20,000 Hz; output 5 watts/channel rms into 8 ohms; \$169.95.

#### Model 12-636

Record/play deck with preamps for use in component system; auto-stop to prevent recording



over previous program material; pause control; fast-forward button; sliding volume controls; hysteresis synchronous motor; response 30-12,000 Hz; 15 $\frac{1}{2}$ " x 5 $\frac{1}{2}$ " x 10 $\frac{1}{4}$ "; \$179.95.

### MOTOROLA INC.

#### Model SK106G

Cartridge player/AM-Stereo FM receiver with matching speaker systems; full complement of



controls, inputs and outputs; front-panel stereo headphone jack; tuning meter; Stereo FM light; output 15 watts (EIA) music power; \$199.95.

#### Model FH210HW

Cartridge player/AM-Stereo FM receiver with two speaker systems; six push-button controls; tuning meter; Stereo FM light; record changer jack; output 10 watts (EIA) music power; \$179.95.

#### Model FH225HW

Cartridge player/AM-Stereo FM receiver with two speaker systems; six push-button controls;

tuning meter; Stereo FM light; record changer input; front-panel stereo headphone jack; sloped front panel; output 30 watts (EIA); \$399.95.

**Model GP80HW**

Home player with two speaker systems in walnut cabinets; stereo headphone jack; phono input jack; full complement of controls; output 1.5 watts (EIA); \$99.95.

**Model GA15HW**

Home player deck for use in component system; program advance; lighted program indicators; hinged door to keep out dust; \$59.95.

**OLSON**

**Model RA-308**

Home player deck; manual/automatic channel



changer; illuminated channel indicators; eject button; response 50-15,000 Hz; 11 1/2" x 7 1/4" x 4 1/4"; walnut cabinet; \$60.00.

**PACKARD BELL**

**Model RTS-123WL**

Cartridge player/AM-Stereo FM receiver with two matched speaker systems; a.f.c.; slide-rule tuning; dust-proof feed slot; response 50-10,000 Hz; \$129.95.

**Model RTS-125WL**

Cartridge player/AM-Stereo FM receiver with two matching speaker systems; burlled walnut



front-panel strip; black-out slide-rule tuning dial; stereo headphone jack; tuning meter; inputs for auxiliary equipment; response 40-12,000 Hz; \$179.95.

**QATRON**

**Model 48 D**

Automatic playback deck for use in audio system; handles 12 cartridges; operates in four



modes: automatic total cartridge play, automatic intermix selection play, repeat cartridge, and select cartridge; response 50-15,000 Hz; flutter 0.25% rms; \$269.95.

1972 EDITION

**Model 48H**

Same basic operation as 48C but with 15 watts dynamic power (EIA); inputs for tuner or phono; requires external speakers; \$299.95.

**Model 48C**

Similar to 48H but with 20-watt rms mono distribution amplifier for commercial background music-system operation; \$499.95.

**ROBERTS**

(Div. of Rheem Mfg. Co.)

**Model 808D**

Record/play deck for use in audio system; one-micron gap play head; two linear-action level



controls; fast-forward; stereo headphone jack; two VU meters; microphone and radio/phono inputs; stereo line outputs; response 50-15,000 Hz; wow and flutter 0.35% rms; 13 1/2" x 9 1/2" x 5 1/2"; walnut cabinet; \$159.95.

**Model 808**

Basically same as 808D deck but has 20 watts power output; with two speaker systems; \$199.95.

**SHARP ELECTRONICS CORP.**

**Model RT-811**

Record/play deck for use in audio system; separate VU meters; five push-button controls;



automatic or manual eject; fast-forward control; recording indicator lamp; stereo headphone jack; microphone and line input/output jacks; 14" x 4 3/8" x 9 1/2"; \$109.95.

**SONY/SUPERSCOPE**

(Superscope, Inc.)

**Model TC8-W**

Record/play deck for use in audio system; automatic shutoff; record interlock; stereo headphone monitor jack; automatic level control (a.i.c.); standby switch; record-level indicator lamp; microphone and auxiliary inputs; response 45-13,000 Hz; wow and flutter 0.17%; S/N ratio 52 dB; \$149.95.

**STANDARD RADIO CORP.**

**Model SR-T391DK**



Record/play deck for use in audio system; features automatic recording level system (a.i.c.); fast-forward and pause controls; jacks for high, medium or low output levels; walnut wood cabinet; 3 1/2" x 13 1/2" x 7 3/4"; wow and flutter less than 0.25% rms; response 100-10,000 Hz; S/N ratio 40 dB; \$129.95.

**TELEX COMMUNICATIONS DIV.**

**Model 811R**

Record/play deck for use in audio system; record mode features automatic stop at end of



single program or end of tape; in playback mode features automatic stop at end of tape or continuous play; response 40-15,000 Hz; S/N ratio 50 dB; wow and flutter 0.3%; 15" x 11" x 4 1/2"; \$169.95.

**Model 811**

Playback deck only for use in audio system; same response, S/N and wow and flutter specifications as 811R; same dimensions; \$99.95.

**TOYO**

**Model 335**

Record/play deck for use in audio system; automatic level control; fast-forward; automatic stop or continuous play; 8 push-button controls; two level meters; stereo headphone jack; response 100-10,000 Hz; S/N ratio 50 dB; wow and flutter 0.3% rms; 12 1/4" x 5" x 11 1/2"; \$99.95.

**Model 665**

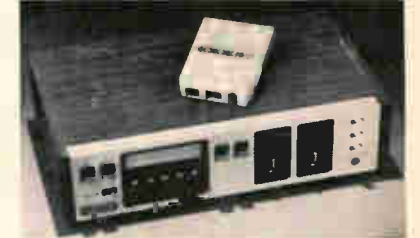
Cartridge recorder/player/AM-Stereo FM receiver with power amps; 11 push-button controls; two VU meters; Stereo FM beacon; a.f.c.; full complement of inputs and outputs; stereo headphone jack on panel; response 40-18,000 Hz; output 80 watts total music power; wow and flutter 0.3% rms; S/N ratio 50 dB; \$209.95.

**WOLLENSAK**

(3M Co. Mincom Div.)

**Model 8050**

Record/play deck with preamps, for use in component system; special cueing method assures



that tape is always at the beginning when unit is placed in recording mode; automatic eject to prevent accidental erasure of previously recorded material while recording; pause lock; fast-forward; dual illuminated VU meters; switchable automatic level control; stereo headphone jack; response 30-15,000 Hz; S/N ratio better than 50 dB; \$149.95.

NOTE: Almost all of the cartridge tape manufacturers (both cassette and 8-track) rate their products according to the EIA (Electronic Industries Association) standards of measurement. All power output figures are therefore based on 5% THD. Their music-power rating is basically the same as the IHF (Institute of High Fidelity) dynamic power rating. The results are about the same, the only difference being in the method of testing.

# THE CRITICS HAVE PUT THE COMPETITION IN THEIR PLACE

Specifically, the leading consumer testing publications have continually top-rated Sherwood receivers over all others. Our S-8900 shown here leading the pack is no exception.

Of course, we worked hard to get those ratings.

The S-8900 has a powerful 225 watt ( $\pm 1$ dB) amplifier (48 watts RMS per channel at 8 OHMS). FM distortion is the lowest in the industry—0.15%. There's an impressive 3 year parts warranty, plus 1 year labor, too.

The S-8900 features solid-state ceramic FM IF filtering. Exclusive FET FM interchannel hush control. A zero-center tuning meter.

There's an extra front panel tape record/dubbing jack. And six pushbuttons for every effect you could possibly want.

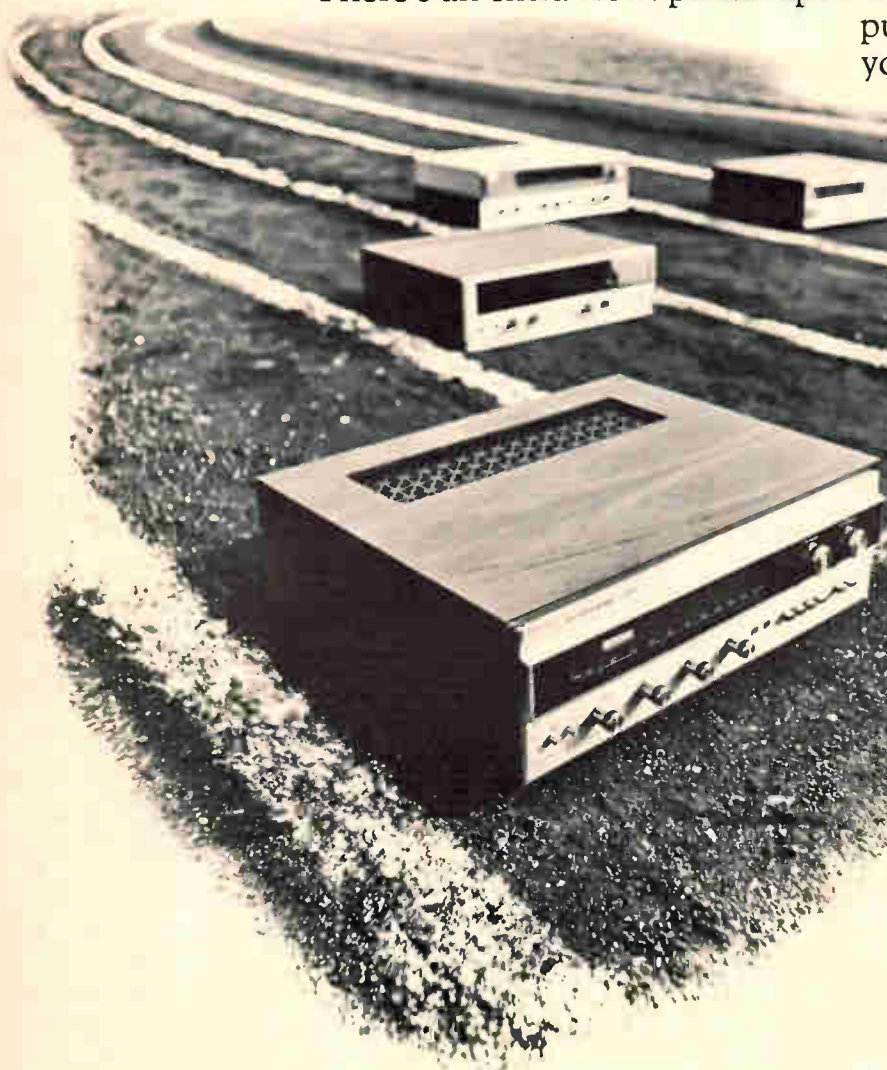
At \$399.95, our S-8900

gives more top-rated quality than any comparable or lower priced model.

That's what we've always said. Only now you don't have to take our word for it.

For more information and complete specifications, write us today. Sherwood Electronic Laboratories, Inc., Dept. A, 4300 North California Avenue, Chicago, Illinois 60618.

**SHERWOOD  
SOUNDS EXPENSIVE.**



# 6

# Receivers

Stereo-FM Only, AM/Stereo FM

A stereo receiver is basically a tuner (including multiplex decoder), preamplifier, and power amplifier constructed as a single unit and sharing a common power supply. Not only does a receiver save space (it is little larger than an equivalent integrated amplifier alone), but most of the complex, confusing, and potentially troublesome interconnecting cables needed to assemble a hi-fi system from separate components are replaced by reliable internal wiring and switching. The only required external connections are to the power line, antenna, and speakers, plus the turntable or record player if used.

Most manufacturers make receivers with the same circuits and components used in their separate units. The power rating of a receiver is usually slightly lower than that of the equivalent amplifier, since the size and capacity of the power supply may have to be reduced to make room for the tuner circuits and, in addition, it must supply the tuner's power requirements. However, one recently announced receiver has separate power supplies for the two audio channels, a feature rarely found even in deluxe power amplifiers. When the receiver components share a chassis, cabinet, and power supply, it generally results in a nice saving, which can be passed along to the customer.

In spite of their simplified installation and operation, most receivers retain the full flexibility of separate components. They have multiple speaker outputs (some can even handle as many as three pairs of speakers), full tape-monitoring facilities, and frequently can accommodate two magnetic phono cartridges as well as several high-level input sources. Some receivers feature separate preamplifier output and power-amplifier input connectors, as found in comparable integrated amplifiers, as well as center-channel outputs.

Originally, receivers were designed for people making their first hi-fi purchase and thus tended to be relatively low-powered, basic instruments. There is currently a strong trend toward highly sophisticated

receivers, with power amplifiers rated as high as 75 watts per channel. These are fully capable of driving high-quality, low-efficiency speaker systems which are often incompatible with lower priced receivers delivering only 20 to 25 watts per channel. Automatic remote tuning, both electronic and mechanical (sometimes combined with remote volume control), is offered in some high-priced sets.

Tuner and amplifier specifications of a receiver should be evaluated as though they were separate components. The only area where receiver performance is compromised is in its low-frequency power output and distortion. This is the direct result of the power-supply limitations mentioned earlier. In many cases, this is of little practical importance, but if you require full-rated power at low distortion all the way down to 20 Hz, only a few of the most expensive receivers can provide it.

Although the panel dimensions of a receiver may be similar to those of a tuner or integrated amplifier, its chassis depth is usually considerably greater. A shelf installation, often possible with separate components, is rarely practical with receivers whose depth may range from 16 to 18 inches.

One criticism which has been leveled against receivers is that obsolescence of the tuner or amplifier requires replacement of the entire unit, whereas a component tuner or amplifier can be replaced without affecting the rest of the system. However, it appears unlikely that any foreseeable development will obsolete a well-designed receiver. The complete flexibility of most modern receivers makes it possible to use accessory equalizers or other signal conditioners, or even add four-channel capability, without replacing or internally modifying the receiver. From the service standpoint, removing an integrated amplifier from a hi-fi system for maintenance will disable the system just as effectively as removing the entire receiver.

JULIAN D. HIRSCH

## ACOUSTIC RESEARCH, INC.

### AR FM Receiver

60 W/channel continuous sine-wave into 4 ohms with both channels driven; 50 W/channel into 8 ohms; 30 W/channel into 16 ohms;



power bandwidth 14-44,000 Hz at 8 ohms; response 20-20,000 Hz  $\pm 1$  dB at rated output; input sensitivity 2 to 5 mV (adjustable) mag. phono; 200 mV aux.; HD 0.5% from 20-20,000 Hz at rated output; FM sensitivity 2  $\mu$ V for 30 dB quieting; capture ratio 2 dB; 16 $\frac{1}{8}$ "  $\times$  5 $\frac{1}{4}$ "  $\times$  11 $\frac{1}{8}$ " D; with black aluminum cover \$420.00; oiled walnut cabinet \$20.00

## AKAI AMERICA, LTD.

### Model AA-8500

AM-Stereo FM design; 65 W/channel continuous sine-wave into 8 ohms with both channels driven; 85 W/channel into 8 ohms; dynamic power 90 W/channel into 8 ohms; 120 W/channel



into 4 ohms; power bandwidth 20-30,000 Hz at 8 ohms; response 20-50,000 Hz  $-3$  dB at 1 W; input sensitivity 3 mV; mag. phono 150 mV aux.; HD 0.05% at 8 ohms; FM sensitivity 2  $\mu$ V for 30 dB quieting; capture ratio 1.5 dB (IHF); remote speaker selector switch; tape monitor switch; 19 $\frac{1}{4}$ "  $\times$  7"  $\times$  14 $\frac{1}{2}$ " D; \$389.95

### Model AA-6600

AM-Stereo FM design; 37 $\frac{1}{2}$  W/channel continuous sine-wave into 8 ohms; 50 W/channel



dynamic power into 8 ohms; 60 W/channel into 4 ohms; power bandwidth 20-30,000 Hz at 8 ohms; response 20-50,000 Hz  $-3$  dB at 1 W; input sensitivity 3 mV; mag. phono 200 mV; HD 0.8% at rated output; FM sensitivity 2  $\mu$ V for 30 dB quieting; capture ratio 2 dB (IHF);

remote speaker selector switch; tape monitor switch; 17 $\frac{1}{2}$ "  $\times$  5 $\frac{1}{4}$ "  $\times$  13 $\frac{3}{8}$ " D; \$269.95

### Model AA-6300

AM-Stereo FM design; 20 W/channel continuous sine-wave into 8 ohms with both channels driven; dynamic power 40 W/channel into 8 ohms; power bandwidth 20-30,000 Hz; re-



sponse 20-40,000 Hz  $-3$  dB at 8 ohms & 1 W; input sensitivity 3 mV; mag. phono 150 mV; HD 0.15% at 15 W & 8 ohms; FM sensitivity 2  $\mu$ V for 30 dB quieting; capture ratio 2 dB (IHF); remote speaker selector switch; tape monitor switch; 17 $\frac{1}{2}$ "  $\times$  5 $\frac{1}{4}$ "  $\times$  13 $\frac{1}{2}$ " D; \$229.95

## ALLIED RADIO SHACK

### Realistic STA-36

AM-Stereo FM design; dynamic power 18 W/channel into 8 ohms at 1% THD; response 20-20,000 Hz  $\pm 1$  dB; FM sensitivity 3  $\mu$ V for 30 dB quieting; walnut cabinet; \$119.95

# 6

## Receivers

### Realistic STA-120B

AM-Stereo FM design; dynamic power 80/W channel into 8 ohms; FM sensitivity 2  $\mu$ V for



20 dB quieting; tape monitor; speaker selector switch; slide volume control; walnut cabinet; \$279.95

### Realistic STA-65C

AM-Stereo FM design; dynamic power 32 $\frac{1}{2}$  W/channel into 8 ohms at 0.8% THD; FM sen-



sitivity 2  $\mu$ V for 30 dB quieting; slide-type controls; walnut cabinet; \$199.95

### Realistic STA-180

AM-Stereo FM design; dynamic power 75 W/



channel into 8 ohms; 1.5  $\mu$ V FM sensitivity; top access inputs & outputs; walnut cabinet; \$399.95

### Model KG-988A

"Knight-Kit" AM-FM design; 24 $\frac{1}{2}$  W/channel continuous sine-wave into 8 ohms with 1 channel driven; 40 W/channel dynamic power into 4 ohms; response 20-20,000 Hz; main/remote speaker switch; inputs for mag. & ceramic phono; tape monitor facilities; walnut wood cabinet; (kit) \$199.95

### Model KG-996

"Knight-Kit" AM-FM design; 62 W/channel continuous sine-wave into 4 ohms with 1 channel driven; 95 W/channel dynamic power into 4 ohms; response 20-30,000 Hz  $\pm$ 1 dB; HD 1%; FM sensitivity 2  $\mu$ V for 30 dB quieting; all critical PC boards supplied wired and pre-aligned; 18 $\frac{1}{2}$ " x 14 $\frac{1}{2}$ " x 5" D; walnut veneer cabinet; (kit) \$239.95

## ALTEC LANSING

### Model 725A

AM-Stereo FM; 60 W/channel continuous sine-wave into 8 ohms with both channels driven; power bandwidth 15-25,000 Hz; response 20-20,000 Hz  $\pm$ 1/2 dB at rated output; input sensitivity 2 or 5 mV mag. phono (has two



phono inputs); HD 0.3% at rated output; FM sensitivity 1.8  $\mu$ V for 30 dB quieting; capture ratio 1.3 dB; Butterworth & crystal filters in i.f.'s; 17 $\frac{3}{4}$ " x 5" x 16 $\frac{1}{2}$ " D; oiled walnut cabinet \$28.50; \$699.00

### Model 714A

Similar to Model 725A except 44 W/channel continuous sine-wave; 90 W/channel into 4 ohms; response 15-45,000 Hz  $\pm$ 1 dB; HD 0.5%; FM sensitivity 1.9  $\mu$ V for 30 dB quieting; capture ratio 2 dB (IHF); 16 $\frac{5}{8}$ " x 5 $\frac{3}{8}$ " x 13 $\frac{5}{8}$ " D; oiled walnut cabinet \$25.50; \$399.00

## AMPEX CORP.

### ASR-100

AM-Stereo FM design; dynamic power 30 W/channel into 4 ohms; 18 W/channel into 8 ohms; power bandwidth 20-25,000 Hz; HD 0.8%; FM sensitivity 3  $\mu$ V for 30 dB quieting; capture ratio 4 dB (IHF); mag. & ceramic phono inputs; main/remote speaker outputs; tape monitoring; 16 $\frac{1}{2}$ " x 4 $\frac{3}{4}$ " x 11 $\frac{1}{4}$ " D; oiled walnut cabinet; \$249.95

## BELL & HOWELL CO.

### Model 3600CK

AM-Stereo FM design; dynamic power 15 W/channel; power bandwidth 20-20,000 Hz at 1%



HD; response 20-20,000 Hz; FM sensitivity 2.0  $\mu$ V for 30 dB quieting; capture ratio 3 dB (IHF); supplied with pair of 6" two-way speaker systems; built-in mechanical crossover; ceramic & mag. phono inputs; 4" x 19 $\frac{1}{2}$ " x 12 $\frac{1}{2}$ " D; \$199.95

## BIC/LUX

### Model 71/2R

AM-Stereo FM design; combines 71/5T tuner with 71/4A integrated amp; 75 W/channel continuous sine-wave into 8 ohms; has end bells; 18 $\frac{1}{2}$ " x 6" x 13 $\frac{3}{4}$ " D; \$620.00

### Model 71/3R

AM-Stereo FM design; 50 W/channel continuous sine-wave into 8 ohms with both chan-



nels driven; 60 W/channel into 4 ohms; power bandwidth 15-30,000 Hz at 0.5% HD; response 10-50,000 Hz; input sensitivity 2 & 8 mV (dual inputs); mag. phono 100 mV; HD 0.3% at rated output; FM sensitivity 2.2  $\mu$ V for 30 dB quieting; capture ratio 4 dB (IHF); 3-gang varactor tuner; crystal filters; separate tone controls with slope selector (bass 150, 300 or 600 Hz; treble 1500, 3000 or 6000 Hz); extruded front panel with end bells; field-strength and center-tune meters; 3-station preset FM tuning; 18 $\frac{1}{2}$ " x 6" x 13 $\frac{3}{4}$ " D; \$550.00

## BOGEN DIV.

(Lear Siegler, Inc.)

### Model BR360

AM-Stereo FM design; 45 W/channel continu-



ous sine-wave into 4 ohms with one channel driven; dynamic power 60 W/channel; input sensitivity 3 mV; ceramic i.f. filters; "Crescendo" control expander-compressor; \$299.95

## BSR McDONALD

(BSR-USA-Ltd.)

### Model R-40

AM-Stereo FM design; 25 W/channel dynamic power into 8 ohms; response 20-20,000 Hz  $\pm$ 1 dB at rated output; HD 1%; FM sensitivity 2.8  $\mu$ V for 30 dB quieting; oiled walnut cabinet; \$179.95

## CLARICON

### Model 36-790A

AM-Stereo FM design; 60 W/channel dynamic power at 0.5% HD; response 20-30,000 Hz  $\pm$ 1 dB at rated output; FM sensitivity 2  $\mu$ V for 30 dB quieting; capture ratio 2 dB (IHF); main/remote speaker switch; inputs for mag. & ceramic phono cartridge; pair of air-suspension speaker systems; 8" woofer, tweeter & wide-angle dispersion horn; speaker cabinet 11 $\frac{1}{4}$ " x 8 $\frac{1}{4}$ " x 17 $\frac{1}{4}$ " D; oiled walnut cabinets; \$229.95

## CONCORD ELECTRONICS CORP.

### Model Mark 20

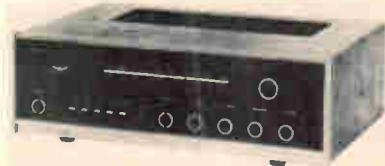
AM-Stereo FM design continuous sine-wave into 8 ohms with one channel driven; 75 W/channel into 4 ohms; dynamic power 87 $\frac{1}{2}$  W/channel into 8 ohms; 120 W/channel into 4 ohms; power bandwidth 5-40,000 Hz at rated output; response 10-35,000 Hz  $\pm$ 1 dB at rated output; input sensitivity 3 mV; mag. phono



200 mV; ceramic phono 150 mV; HD 0.5% at rated output; FM sensitivity 1.7  $\mu$ V for 30 dB quieting; capture ratio 1 dB (IHF); main/remote speaker facilities; 17 $\frac{1}{2}$ " x 14" x 5 $\frac{1}{8}$ " D; oiled walnut cabinet; \$349.95

### Model Mark 12

AM-Stereo FM design continuous sine-wave into 8 ohms with one channel driven; 45 W/



channel into 4 ohms; dynamic power 45 W/channel into 8 ohms; 60 W/channel into 4 ohms; power bandwidth 25-22,000 Hz at rated output; response 20-25,000 Hz  $\pm$ 1 dB at rated output; input sensitivity 3 mV; mag. phono 200 mV; ceramic phono 150 mV; HD 0.5% at rated output; FM sensitivity 1.9  $\mu$ V for 30 dB quieting; capture ratio 2 dB (IHF); main/remote speaker facilities; 17 $\frac{1}{2}$ " x 12 $\frac{1}{2}$ " x 5 $\frac{1}{8}$ " D; oiled walnut cabinet; \$269.95

### Model Mark 10

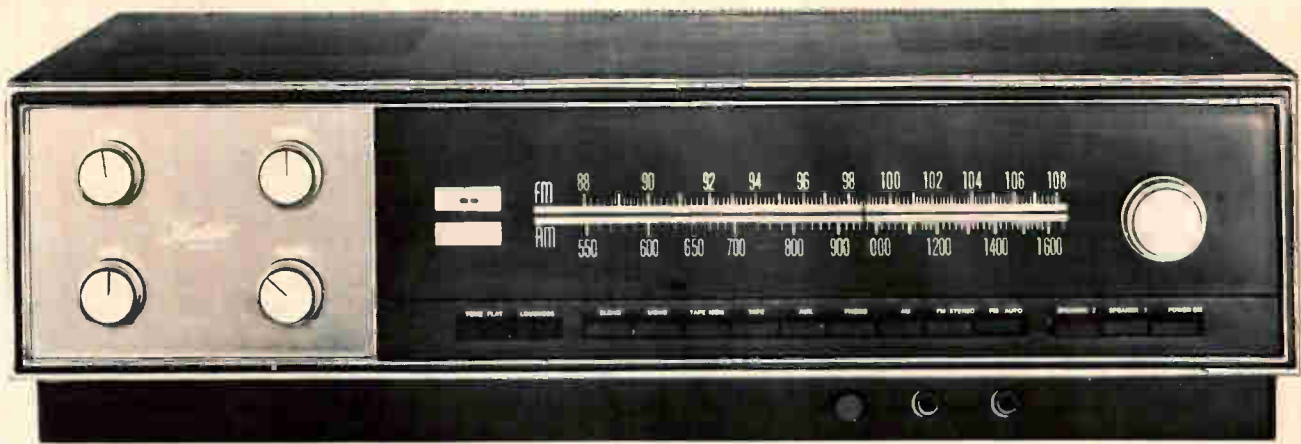
AM-Stereo FM design; 25 W/channel continuous sine-wave into 8 ohms with one chan-

FREE  
LOG

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Motor  
Kits  
Radios  
Radios  
Graphic Aids  
& Hobby Kits



# Meet the second generation AR-15 ...new Heathkit AR-1500



In 1967 we introduced the Heathkit AR-15, a receiver that opened new horizons in stereo and FM/sterео circuitry. Experts agreed it was the most advanced receiver of its kind. Now meet the Heathkit AR-1500 — successor to the AR-15 — with impressive improvements in every critical area!

**180 Watts Dynamic Music Power**, 90 watts per channel (8 ohm load); 120 watts dynamic music power per channel under 4 ohm load, with less than .2% intermod distortion, less than .25% harmonic distortion. The 14-lb. power transformer and massive output transistor heat sink make this definitive statement on power in the Heath tradition of conservative ratings. Direct coupled output and drive transistors are protected by limiting circuitry that electronically monitors voltage and current.

**FM Selectivity greater than 80 dB**, better phase linearity, separation and less distortion are made possible by two computer-designed 5-pole LC Filters. The improved 4-gang 6-tuned circuit front-end gives better stability, 1.8 mV sensitivity, 1.5 dB capture ratio, and 100 dB image and IF rejection. Four IC's are used, three in the IF, one in the Multiplex. Patented automatic FM squelch is both noise and deviation activated, fully adjustable for sensitivity.

**Vastly Superior AM**, an "also ran" with many other receivers, has two dual-gate MOSFETS in the RF and Mixer stages, one J-FET in the oscillator, 12-pole LC Filter in the IF, and broad-band detector. Better overload characteristics, better AGC action, and no IF alignment.

**Famous Heath "Black Magic" Lighting** hides tuning scales and meters when the AR-1500 is not in use. You'll appreciate such niceties as velvet-smooth single-knob flywheel tuning for FM and AM, function pushbuttons, chrome-plated die cast panel and knobs. And there are outputs for two separate speaker systems, bi-amplification (separable preamps and amps); oscilloscope monitoring of FM multipath. Inputs for phono, tape, tape monitor and auxiliary sources — all with individual level controls.

**If you can build a kit, you can build an AR-1500!** Ten plug-in circuit boards, two wiring harnesses and extensive use of pre-cut wiring with installed clip connectors make the AR-1500 a kit-builder's dream. Built-in test circuitry uses signal meter to make resistance and voltage checks before operation. Install in the new low-profile walnut cabinet, in a wall or use the black-finish dust-cover included in the kit. The coupon at right is your order blank. Or, if you still can't believe the AR-15 was just a beginning, send for more information on the new Heathkit AR-1500.

Kit AR-1500, less cabinet, 42 lbs., mailable ..... 349.95  
ARA-1500-1, walnut cabinet, 8 lbs., mailable ..... 24.95



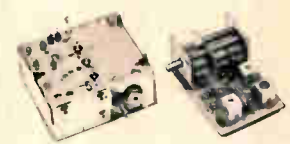
Massive transformer, and output transistors with heat sink across the full length of the back panel, are mute testimony to the power at your command.



Hinged circuit boards for FM IF, AM IF, Multiplex and Phono Preamp sections — six plug-in boards for all other major circuitry.



Printed plug-in boards for AM and FM IF sections contribute to error-free building. FM circuitry has three LC Filters, three IC's. Even the AM has an LC for superior reception.



Completely new AM tuner circuitry mounts easily on printed circuit board — includes two dual-gate MOSFETS and J-FET mixer. FM tuner is preassembled ready to install.

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\*Mail order prices; F.O.B. factory.

HF-249

# 6

## Receivers

nel driven; 28 W/channel into 4 ohms; dynamic power 35 W/channel into 8 ohms; 40 W/channel into 4 ohms; power bandwidth 25-20,000 Hz; response 20-22,000 Hz  $\pm 1$  dB at 1 W; input sensitivity 3 mV; mag. phono 200 mV; ceramic phono 150 mV; HD 0.5% at rated output; FM sensitivity 2  $\mu$ V for 30 dB quieting; capture ratio 2 dB (IHF); main/remote speaker facilities; 17 1/2" x 12 1/4" x 5 1/8" D; oiled walnut cabinet; \$229.95

### DENON

(Nippon Columbia Corp. of America)

#### Model QX-993

AM-Stereo FM design; dynamic power 10 W/channel into 8 ohms at 5% THD; response 4-20,000 Hz; FM sensitivity 5  $\mu$ V for 30 dB quieting; pair of speaker systems each with 6 1/2" woofer & 2" tweeter; 8 1/4" x 12 1/4" x 5 7/8" D; main/remote speaker capability; walnut cabinet; \$150.00

### EICO ELECTRONIC INSTRUMENT CO., INC.

#### Model Cortina 3780

AM-Stereo FM design combining Model 3300



AM-Stereo FM tuner & Model 3080 integrated amp; 4" x 16 1/2" x 9 1/8" D; (kit \$109.95); \$169.95

#### Model Cortina 3770

AM-Stereo FM design combining Cortina 3070 stereo control amp & Cortina 3200 Stereo FM



tuner with added AM circuitry; dynamic power 25 W/channel in 8 ohms; 35 W/channel into 4 ohms; vinyl-clad Danish walnut cabinet (Model 3570 less AM \$169.95, kit; \$259.95, assembled); (kit \$189.95); \$279.95

### ELECTRO-VOICE, INC.

#### Model E-V 1083

AM-Stereo FM design; dynamic power 17 W/channel into 8 ohms at 5% THD; response 35-22,000 Hz; HD 0.65% at 1 W output; pair of 2-way speaker systems each with 6" coaxial speaker; 20 W capacity; 8" x 10" x 5 7/8" D; receiver 18" x 4 3/8" x 11" D; walnut cabinet; \$149.95

#### Model E-V 1181

Same as E-V 1281 except Stereo FM-only design; 21 1/2 W/channel continuous sine-wave into 8 ohms with both channels driven; dynamic power 25 W/channel into 8 ohms; (with AM circuitry \$209.70); cabinet; \$189.00

#### Model E-V 1281

Stereo FM-only design; 26 W/channel continuous sine-wave into 8 ohms with both channels driven at 0.8% THD; dynamic power 46 W/

channel into 8 ohms; response 20-20,000 Hz  $\pm 1$  1/2 dB; input sensitivity 3 mV; mag. phono 200 mV; FM sensitivity 2.2  $\mu$ V for 30 dB quieting; main/remote speaker switch; 14 3/4" x 3 3/4" x 10 1/2" D; (with AM circuitry \$249.30); grey metal cabinet; \$229.50

#### Model E-V 1382

AM-Stereo FM design; 40 W/channel continuous sine-wave into 8 ohms with both chan-



nels driven at 0.8% THD; 75 W/channel into 4 ohms dynamic power; response 15-55,000 Hz  $\pm 1.5$  dB; FM sensitivity 2  $\mu$ V for 30 dB quieting; capture ratio 2 dB (IHF); dual magnetic phono input; oiled walnut cabinet \$24.30; \$299.95

#### Model Aristocrat 1082

AM-Stereo FM design; 10 W/channel dynamic power into 8 ohms at 5% THD; response 80-15,000 Hz; HD 0.65% at 1 W output; pair speaker systems each with 6" full-range speaker; 8 ohms; 12 W capacity; cabinet 8" x 10" x 5 7/8" D; 18" x 3 3/8" x 11" D; walnut cabinet; (with E-V 1085 automatic turntable mounted on separate walnut base \$149.95); dust cover \$4.95; \$119.95

### FISHER RADIO

#### Model 500-TX

AM-Stereo FM design; 52 W/channel continuous sine-wave into 8 ohms at 0.5% THD with both channels driven; 80 W/channel dynamic power into 8 ohms; power bandwidth 8-35,000 Hz; response 20-25,000 Hz  $\pm 1.5$  dB; input sensitivity 2.5 & 10 mV; mag. phono 250 mV; "Autoscan" electronic touch tuning; remote tuning control optional; 16 7/8" x 4 7/8" x 14 1/2" D; oiled walnut cabinet \$22.95; \$499.95

#### Model 401

AM-Stereo FM design; 45 W/channel continuous sine-wave into 4 ohms at 0.5% THD with



both channels driven; 60 W/channel dynamic power into 4 ohms; power bandwidth 25-20,000 Hz at 4 ohms; response 20-20,000 Hz  $\pm 1.5$  dB; input sensitivity 2.8 mV; mag. phono 200 mV; FM sensitivity 2  $\mu$ V for 30 dB quieting; capture ratio 2.8 dB (IHF); "Autoscan" electronic touch tuning; remote tuning control optional; 18 1/2" x 5 1/2" x 16" D; with rosewood cabinet; \$449.95.

#### Model 450-T

AM-Stereo FM design; 44 W/channel continuous sine-wave into 8 ohms at 0.5% THD with



both channels driven; 72 W/channel dynamic power into 8 ohms; power bandwidth 10-30,000 Hz; response 20-25,000 Hz  $\pm 2$  dB; input sensitivity 2.5 & 7.5 mV; mag. phono 250 mV; FM sensitivity 2  $\mu$ V for 30 dB quieting; capture ratio 2.5 dB (IHF); "Autoscan" electronic touch

tuning; remote tuning control optional; 15 1/2" x 4 3/8" x 14 1/4" D; oiled walnut cabinet \$22.95; \$399.95

#### Model 301

AM-Stereo FM design; 42 W/channel continuous sine-wave into 4 ohms at 0.5% THD with



both channels driven; 57 1/2 W/channel dynamic power into 4 ohms; power bandwidth 25-20,000 Hz at 4 ohms; response 20-20,000 Hz  $\pm 1.5$  dB; input sensitivity 2.8 mV; mag. phono 200 mV; FM sensitivity 2  $\mu$ V for 30 dB quieting; 2.8 dB capture ratio (IHF); main/remote speaker switch; 18 1/2" x 5 1/2" x 16" D; oiled walnut cabinet optional; \$349.95

#### Model 250-TX

AM-Stereo FM design; 38 W/channel continuous sine-wave into 8 ohms at 0.5% THD with



both channels driven; 48 W/channel dynamic power into 8 ohms; power bandwidth 20-25,000 Hz; response 20-20,000 Hz  $\pm 2$  dB; input sensitivity 2.5 & 7.5 mV; mag. phono 250 mV; FM sensitivity 2  $\mu$ V for 30 dB quieting; capture ratio 2.8 dB (IHF); "Tune-O-Matic" push-button tuning; 15 1/2" x 4 5/8" x 12 3/4"; oiled walnut cabinet \$19.95; \$349.95.

#### Model 202

AM-Stereo FM design; 32 W/channel continuous sine-wave into 8 ohms at 0.8% THD with



both channels driven; dynamic power 40 W/channel into 8 ohms; power bandwidth 25-20,000 Hz; response 25-20,000 Hz  $\pm 2$  dB; input sensitivity 2.5 & 8 mV; mag. phono 200 mV; FM sensitivity 2.5  $\mu$ V for 30 dB quieting; capture ratio 3 dB (IHF); main/remote speaker switch; 15 3/8" x 4 3/8" x 14 1/4" D; oiled walnut cabinet \$14.95; \$269.95

#### Model 201

AM-Stereo FM design; same as Model 202 except 25 W/channel dynamic power & without interstation muting; \$219.95

### HARMAN-KARDON, INC.

#### Model 730D

AM-Stereo FM design; 25 W/channel continuous sine-wave into 8 ohms with both channels driven; 0.5% HD from 20-20,000 Hz (38 W/channel at 1000 Hz); FM sensitivity 1.9  $\mu$ V for 30 dB quieting; built-in Dolby B processor; dual power supplies; cabinet \$34.95; \$320.00

#### Model 630

AM-Stereo FM design; 25 W/channel continuous sine-wave into 8 ohms with both channels driven; 0.5% HD from 20-20,000 Hz (38 W/channel at 1000 Hz); FM sensitivity 1.9  $\mu$ V for 30 dB quieting; provision for Dolby B processor on FM playback; dual power supplies; cabinet \$34.95; \$250.00



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## 6

## Receivers

**Model 330A**

AM-Stereo FM design; dynamic power 40 W/channel into 4 ohms; response 7-50,000



Hz  $\pm 1\frac{1}{2}$  dB at 1 W output; FM sensitivity 1.9  $\mu$ V for 30 dB quieting; tape monitoring facilities; main/remote speaker switch; 13" x 15 $\frac{1}{2}$ " x 4 $\frac{1}{4}$ " D; cabinet \$24.95; \$199.95

**Model 230A**

AM-Stereo FM design; 17 $\frac{1}{2}$  W/channel dynamic power into 4 ohms; response 10-70,000 Hz at 1 W output; FM sensitivity 2.7  $\mu$ V for 30 dB quieting; tape monitor facilities; main/remote speaker switch; cabinet \$9.95; \$159.95

**Model 930**

AM-Stereo FM design; 45 W/channel continuous sine-wave into 8 ohms with both channels



driven; 0.2% THD 20-20,000 Hz (65 W/channel at 1000 Hz); response 5-70,000 Hz  $\pm 0.5$  dB at 1 W; FM sensitivity 1.8  $\mu$ V at 30 dB quieting; dual power supplies; cabinet \$34.95; \$369.95

**HEATH COMPANY****Model AR-15**

AM-Stereo FM design; 50 W/channel continuous sine-wave into 8 ohms at 0.5% THD; 75 W/channel dynamic power; power bandwidth 6-30,000 Hz; response 6-50,000 Hz  $\pm 1$  dB at 1 W output; input sensitivity 2.2 mV mag. phono; 200 mV aux.; FM sensitivity 1.8  $\mu$ V for 30 dB quieting; capture ratio 1.5 dB (IHF); design based around two integrated circuits; two crystal filters in i.f. amp; two tuning meters (signal-strength & center-of-channel); 16 $\frac{3}{8}$ " x 4 $\frac{3}{4}$ " x 14 $\frac{1}{2}$ " D; walnut cabinet \$24.95 (kit \$349.95); \$540.00

**Model AR-1500**

AM-Stereo FM design; 45 W/channel dynamic power into 8 ohms at 0.25% THD; FM sensitivity 1.8  $\mu$ V for 30 dB quieting; capture ratio 1.5 dB (IHF); FM section has 5-pole LC filters; 4-gang, 6 tuned-circuit front-end; main/remote speaker capability; walnut cabinet \$19.95; (kit) \$379.95

**Model AR-19**

AM-Stereo FM design; 20 W/channel continuous sine-wave into 8 ohms at 0.25% THD with both channels driven (20 W/channel into 4 ohms & 15 W/channel into 16 ohms); 30 W/channel dynamic power into 8 ohms (20 W/



channel into 4 ohms & 17 W/channel into 16 ohms); power bandwidth 5-30,000 Hz; response 6-35,000 Hz  $\pm 1$  dB; input sensitivity 2.4 mV mag. phono; 180 mV aux.; FM sensitivity 1.6  $\mu$ V for 30 dB quieting; capture ratio 2.5 dB (IHF); 117/240 V, 50-60 Hz operation; signal-strength & center-of-channel meters; main/remote speaker selection or center-channel output; FM i.f. board preassembled & aligned; 16 $\frac{3}{4}$ " x 5 $\frac{1}{8}$ " x 14 $\frac{1}{2}$ " D; cabinet \$19.95; (kit) \$225.00

**Model AR-29**

AM-Stereo FM design; 35 W/channel continuous power into 8 ohms with both channels



driven (35 W/channel into 4 ohms & 25 W/channel into 16 ohms) at 0.25% THD; 50 W/channel dynamic power into 8 ohms (65 W/channel into 4 ohms & 30 W/channel into 16 ohms); power bandwidth 5-30,000 Hz; response 7-60,000 Hz  $\pm 1$  dB at 1 W output; input sensitivity 2.2 mV mag. phono; 180 mV aux.; FM sensitivity 1.5  $\mu$ V for 30 dB quieting; capture ratio 1.5 dB; 117/230 V operation; field-strength & center-of-channel tuning meters; main/remote speaker capability or center-channel output; FET tuning unit assembled and realigned. 16 $\frac{3}{4}$ " x 5 $\frac{1}{8}$ " x 14 $\frac{1}{2}$ " D; cabinet \$19.95; (kit) \$285.00

**Model AR-14**

Stereo FM design; 15 W/ch dynamic power; response 12-60,000 Hz  $\pm 1$  dB; FM sensitivity 5  $\mu$ V for 30 dB quieting; capture ratio 3 dB (IHF); preassembled front-end; 15 $\frac{1}{4}$ " x 3 $\frac{3}{8}$ " x 12" D; walnut veneer cabinet \$12.95; beige steel cabinet \$3.95; (kit) \$119.95

**HITACHI SALES CORP.****Model SR-600**

AM-Stereo FM design; 35 W/channel continuous sine-wave into 8 ohms at 0.5% THD with



both channels driven; dynamic power 50 W/channel into 8 ohms; power bandwidth 20-30,000 Hz; response 20-50,000 Hz; input sensitivity 2 or 5 mV; mag. phono 100 mV; FM sensitivity 2.8  $\mu$ V for 30 dB quieting; capture ratio 2.5 dB (IHF); main/remote speaker switch; 16 $\frac{3}{8}$ " x 6" x 12 $\frac{1}{8}$ " D; \$269.95

**Model SR-300**

AM-Stereo FM design; 15 W/channel continuous sine-wave into 8 ohms at 0.8% THD with both channels driven; dynamic power 25 W/channel into 8 ohms; power bandwidth 30-20,000 Hz; response 20-50,000 Hz; input sensitivity 3 or 7 mV; mag. phono 150 mV; FM sensitivity 3  $\mu$ V for 30 dB quieting; tape monitoring facility; 15" x 4 $\frac{3}{4}$ " x 12 $\frac{1}{4}$ " D; \$199.95

**JVC AMERICA, INC.**

(Subs. of Victor Co. of Japan, Ltd.)

**Model 5010**

AM-Stereo FM design; 13 W/channel continuous sine-wave into 8 ohms with both channels driven at 1% THD; 16 W/channel into 4 ohms; dynamic power 17 W/channel into 8 ohms; 20 W/channel into 4 ohms; power bandwidth 30-30,000 Hz; response 20-30,000 Hz; input



sensitivity 2 mV; mag. phono 150 mV; FM sensitivity 2.5  $\mu$ V for 30 dB quieting; same type tone control as Model 5550 but centering on 60 Hz, 250 Hz, 1 kHz, 5 kHz, 15 kHz, providing  $\pm 12$  dB range; does not have interstation muting; main/remote speaker switch; 16 $\frac{3}{4}$ " x 5 $\frac{1}{8}$ " x 13" D; walnut cabinet; \$199.95

**Model 5550**

AM-Stereo FM design; 60 W/channel continuous sine-wave into 8 ohms with both channels



driven at 0.5% THD; 75 W/channel into 4 ohms; dynamic power 85 W/channel into 8 ohms; 110 W/channel into 4 ohms; power bandwidth 15-30,000 Hz; response 20-40,000 Hz; FM sensitivity 1.6  $\mu$ V for 30 dB quieting; unique tone control system—5 individual controls centering on 40 Hz, 250 Hz, 1 kHz, 5 kHz, 15 kHz—providing  $\pm 12$  dB range; main/remote speaker switch; mike input with level control; 19 $\frac{3}{8}$ " x 5 $\frac{7}{8}$ " x 14 $\frac{1}{2}$ " D; walnut cabinet; \$399.95

**Model 5540**

AM-Stereo FM design; 35 W/channel continuous sine-wave into 8 ohms with both channels driven at 0.5% THD; 50 W/channel into 4 ohms; dynamic power 50 W/channel into 8 ohms; 70 W/channel into 4 ohms; power bandwidth 15-30,000 Hz; response 20-40,000 Hz; input sensitivity 2.3 mV; mag. phono 150 mV; FM sensitivity 1.7  $\mu$ V for 30 dB quieting; unique tone control system—5 individual controls centering on 40 Hz, 250 Hz, 1 kHz, 5 kHz, 15 kHz—providing  $\pm 12$  dB range; main/remote speaker switch; 19 $\frac{3}{8}$ " x 5 $\frac{7}{8}$ " x 14 $\frac{1}{8}$ " D; walnut cabinet; \$349.95

**Model 5020**

AM-Stereo FM design; 25 W/channel continuous sine-wave into 8 ohms with both channels driven at 0.5% THD; 37 $\frac{1}{2}$  W/channel into 4 ohms; dynamic power 30 W/channel into 8 ohms; 37 $\frac{1}{2}$  W/channel into 4 ohms; power bandwidth 30-30,000 Hz; response 20-30,000 Hz; input sensitivity 1.5 mV; mag. phono 125 mV; FM sensitivity 2.5  $\mu$ V for 30 dB quieting; same zone-type tone controls as in Model 5550; main/remote speaker switch; 20" x 5 $\frac{1}{8}$ " x 13 $\frac{1}{4}$ " D; walnut cabinet; \$249.95

**KENWOOD ELECTRONICS, INC.****Model KR-4130**

FM-only design; 24 W/channel continuous sine-wave at 8 ohms with both channels driven at 0.5% THD; 30 W/channel into 4 ohms; dynamic power 29 W/channel into 8 ohms; 40 W/channel into 4 ohms; power bandwidth 18-30,000 Hz; response 20-40,000 Hz  $\pm 1.5$  dB; input sensitivity 2.5 mV mag. phono; 150 mV aux.; FM sensitivity 1.8  $\mu$ V for 30 dB quieting; capture ratio 2.5 dB (IHF); main/remote speaker switch; center-channel output; tape monitor; 16 $\frac{3}{4}$ " x 5 $\frac{1}{2}$ " x 12 $\frac{3}{8}$ " D; oiled walnut cabinet \$19.95; \$199.95

**Model KR-7070A**

AM-Stereo FM design; 40 W/channel continuous sine-wave at 8 ohms with both channels driven at 0.5% THD; 47 $\frac{1}{2}$  W/channel into 4 ohms; dynamic power 110 W/channel into 8 ohms; 150 W/channel into 4 ohms; power



bandwidth 10-30,000 Hz; response 5-120,000 Hz  $\pm 1.5$  dB; input sensitivity 0.06 & 2.5 mV; mag. phono 200 mV; mike 2.5 mV; FM sensitivity 1.5  $\mu$ V for 30 dB quieting; capture ratio 1.5 dB (IHF); main/remote speaker switch (will accommodate 3 pairs); automatic tuning; remote control; separate preamp outputs; main amp. inputs; mono (center-channel) speaker output with switch; 17" x 6 $\frac{1}{2}$ " x 15" D; oiled walnut cabinet \$24.95; \$549.95

#### Model KR-3130

AM-Stereo FM design; same as KR-4140 except less power; 19 W/channel continuous sine-wave into 8 ohms with both channels driven at 0.8% THD; 22 W/channel into 4 ohms; dynamic power 21 W/channel into 8 ohms; 25 W/channel into 4 ohms; power bandwidth 20-20,000 Hz; FM sensitivity 2  $\mu$ V for 30 dB quieting; capture ratio 4 dB (IHF); does not have interstation muting nor low-frequency filter; 16 $\frac{3}{4}$ " x 5 $\frac{1}{4}$ " x 12 $\frac{3}{8}$ " D; oiled walnut cabinet \$19.95; \$199.95

#### Model KR-2120

AM-Stereo FM design; same as KR-3130 except less power; 11 W/channel continuous sine-wave into 8 ohms with both channels driven at 0.8% THD; 13 W/channel into 4 ohms; dynamic power 15 W/channel into 8 ohms; 17 W/channel into 4 ohms; power bandwidth 25-20,000 Hz; response 25-30,000 Hz  $\pm 2$  dB; input sensitivity 2.5 mV; mag. phono 180 mV; FM sensitivity 2.3  $\mu$ V for 30 dB quieting; capture ratio 4 dB (IHF); single set of mag. phono inputs; does not have center-channel output & mike input; 16 $\frac{3}{4}$ " x 5 $\frac{1}{4}$ " x 12 $\frac{3}{8}$ " D; oiled walnut cabinet \$19.95; \$169.95

#### Model KR-6160

AM-Stereo FM design; 70 W/channel continuous sine-wave into 8 ohms with both chan-



nels driven at 0.5% THD; 90 W/channel into 4 ohms; dynamic power 90 W/channel into 8 ohms; 110 W/channel into 4 ohms; power bandwidth 12-30,000 Hz; response 15-40,000 Hz  $\pm 1.5$  dB; input sensitivity 2.5 mV; mag. phono 180 mV; FM sensitivity 1.6  $\mu$ V for 30 dB quieting; capture ratio 1.5 dB (IHF); center-channel output; mike input for p.a. applications & mixing; two pair mag. phono inputs; provision for 3 sets of speaker systems; separate preamp output; main amp input; 16 $\frac{3}{4}$ " x 5 $\frac{1}{4}$ " x 12 $\frac{3}{8}$ " D; with mike; oiled walnut cabinet \$19.95; \$379.95

#### Model KR-5150

AM-Stereo FM design; similar to KR-6160 except less power; 40 W/channel continuous sine-wave into 8 ohms with both channels driven at 0.5% THD; 50 W/channel into 4 ohms; dynamic power 55 W/channel into 8 ohms; 75 W/channel into 4 ohms; power bandwidth 17-30,000 Hz; response 20-40,000 Hz  $\pm 1.5$  dB; input sensitivity 2.5 mV; mag. phono 150 mV; FM sensitivity 1.7  $\mu$ V for 30 dB quieting; capture ratio 2 dB (IHF); mike input but no mixing facilities; 16 $\frac{3}{4}$ " x 5 $\frac{1}{4}$ " x 12 $\frac{3}{8}$ " D; oiled walnut cabinet \$19.95; \$319.95

1972 EDITION

#### Model KR-4140

AM-Stereo FM design; similar to KR-5150 except less power; 24 W/channel continuous sine-wave into 8 ohms with both channels driven at 0.5% THD; 33 W/channel into 4 ohms; dynamic power 29 W/channel into 8 ohms; 40 W/channel into 4 ohms; power bandwidth 18-30,000 Hz; FM sensitivity 1.8  $\mu$ V for 30 dB quieting; capture ratio 2.5 dB (IHF); two sets speaker outputs; 16 $\frac{3}{4}$ " x 5 $\frac{1}{4}$ " x 12 $\frac{3}{8}$ " D; oiled walnut cabinet \$19.95; \$259.95

### KLH RESEARCH & DEVELOPMENT CORP.

#### Model Fifty-One

20 W/ch into 8 ohms with both channels driven; power bandwidth 20-20,000 Hz; response



10-35,000 Hz at 1 W; input sensitivity 2.5  $\mu$ V mag. phono; 170 mV aux.; HD 0.5% at rated output; FM sensitivity 2.4  $\mu$ V for 30 dB quieting; capture ratio 3 dB; features tape recording & monitoring facilities; ceramic filters; 6 $\frac{1}{4}$ " x 16 $\frac{7}{8}$ " x 12 $\frac{3}{8}$ " D; oiled walnut cabinet; \$239.95

### LAFAYETTE RADIO

#### Model LR-1500TA

AM-Stereo FM design; 70 W/channel continuous sine-wave into 4 ohms with one channel



driven at 1% THD; dynamic power 95 W/channel into 4 ohms; power bandwidth 18-55,000 Hz; response 20-20,000 Hz  $\pm 0.75$  dB at rated output; input sensitivity 1.8 mV, 4.5 mV & 12 mV; mag. phono 225 mV; ceramic phono 65 mV, 150 mV & 400 mV; HD 0.07% at 1 W; FM sensitivity 1.5  $\mu$ V for 30 dB quieting; capture ratio 1.25 dB (IHF); center-channel output; tape monitor switch; 16 $\frac{3}{4}$ " x 4 $\frac{9}{8}$ " x 14 $\frac{1}{4}$ " D; oiled walnut cabinet \$19.95; simulated walnut grain metal cabinet; \$319.95

#### Model LR-1000B

AM-Stereo FM design; dynamic power 60 W/channel into 4 ohms at 1% THD; power bandwidth 13-35,000 Hz; response 22-22,000 Hz  $\pm 1$  dB at rated output; input sensitivity 2.2 mV high & 7 mV low; mag. phono 250 mV; ceramic phono 75 mV; FM sensitivity 1.65  $\mu$ V for 30 dB quieting; capture ratio 1.5 dB (IHF); center-channel output; 15 $\frac{7}{8}$ " x 5" x 13" D; oiled walnut cabinet \$19.95; simulated walnut grain metal cabinet; \$259.95

#### Model LR-775

AM-Stereo FM design; dynamic power 40 W/channel into 4 ohms at 1% THD; power bandwidth 15-30,000 Hz; response 20-20,000 Hz  $\pm 1$  dB at rated output; input sensitivity 2.3 mV; mag. phono 250 mV; ceramic phono 80 mV; HD 0.07% at 1 W; FM sensitivity 1.7  $\mu$ V for 30 dB quieting; capture ratio 1.5 dB (IHF); main/remote speaker switch; mag. & ceramic phono, aux. & tape inputs; 14 $\frac{1}{4}$ " x 4" x 10 $\frac{1}{4}$ " D; oiled walnut cabinet \$19.95; simulated walnut grain metal cabinet; \$199.95

#### Model LR-100

AM-Stereo FM design; dynamic power 20 W/channel into 4 ohms at 0.8% THD; power bandwidth 35-30,000 Hz; FM sensitivity 2.5  $\mu$ V for

30 dB quieting; capture ratio 5 dB (IHF); main/remote speaker switch; inputs for mag. & ceramic phono and aux.; 14 $\frac{1}{2}$ " x 4 $\frac{1}{2}$ " x 10 $\frac{1}{2}$ " D; simulated walnut grain vinyl-clad metal cabinet; \$149.95

### MARANTZ CO., INC.

#### Model 2215

AM-Stereo FM design; 15 W/channel continuous sine-wave into 8 ohms with both channels



driven at 0.5% THD; power bandwidth 15-40,000 Hz; response 20-40,000 Hz  $\pm 2$  dB at 1 W output; FM sensitivity 3  $\mu$ V for 30 dB quieting; capture ratio 3 dB (IHF); tape monitoring; oiled walnut cabinet optional; 16 $\frac{7}{8}$ " x 5" x 14" D; \$199.00

#### Model 2270

AM-Stereo FM design; 70 W/channel continuous sine-wave into 8 ohms with both channels driven at 0.3% THD; power bandwidth 10-40,000 Hz; response 10-50,000 Hz  $\pm 1$  dB at 1 W output; input sensitivity 1.8 mV; FM sensitivity 2.3  $\mu$ V for 30 dB quieting; capture ratio 1.6 dB (IHF); 3-zone tone controls; tape monitoring; isolated preamp/amp inputs & outputs; oiled walnut cabinet optional; 16 $\frac{7}{8}$ " x 5" x 14" D; \$499.00

#### Model 2230

AM-Stereo FM design; 30 W/channel continuous sine-wave into 8 ohms with both channels driven at 0.5% THD; power bandwidth 15-40,000 Hz; response 15-40,000 Hz  $\pm 2$  dB at 1 W output; HD 1.8%; FM sensitivity 2.5  $\mu$ V for 30 dB quieting; capture ratio 1.8 dB (IHF); 3-zone stepped tone controls; isolated preamp/amp inputs & outputs; oiled walnut cabinet optional; 16 $\frac{7}{8}$ " x 5" x 14" D; \$299.00

#### Model 2245

AM-Stereo FM design; 45 W/channel continuous sine-wave into 8 ohms with both channels driven at 0.3% THD; power bandwidth 10-40,000 Hz; response 15-40,000 Hz  $\pm 1$  dB at 1 W output; FM sensitivity 2.5  $\mu$ V for 30 dB quieting; capture ratio 1.8 dB (IHF); 3-zone stepped tone controls; isolated preamp/amp inputs & outputs; oiled walnut cabinet optional; 16 $\frac{7}{8}$ " x 5" x 14" D; \$399.00

#### Model 19

Stereo FM-only design; 50 W/channel continuous sine-wave into 8 ohms with both chan-



nels driven at 0.15% THD; power bandwidth 10-40,000 Hz; response 8-80,000 Hz  $\pm 1.5$  dB at 1 W output; FM sensitivity 1.8  $\mu$ V for 30 dB quieting; capture ratio 1.9 dB (IHF); built-in scope for center-of-channel, signal-strength, multipath, audio display, stereo separation, and phasing indication; oiled walnut cabinet optional; 18 $\frac{1}{4}$ " x 5 $\frac{3}{4}$ " x 16" D; \$1000.00

### MICOTRON

#### Model 19-552

AM-Stereo FM design; 22 W/channel continuous sine-wave into 8 ohms with 1 channel driven at 1% HD; dynamic power 43 W/channel;

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## Receivers



response 20-30,000 Hz; FM sensitivity 3.5  $\mu$ V for 30 dB quieting; main/remote speaker switch; slide-type switches for left and right volume, bass & treble; 17" x 4 $\frac{3}{4}$ " x 12 $\frac{1}{2}$ " D; with walnut wood cabinet; \$199.95

### MOTOROLA, INC.

#### Model SK109G

AM-Stereo FM design; dynamic power 18 $\frac{1}{2}$  W/channel at 8 ohms at 5% HD; response



20-20,000 Hz; pair of speaker systems each with 8" woofer, 4" mid-range & exponential horn tweeter; FM sensitivity 7.5  $\mu$ V for 20 dB quieting; main/remote speaker switch; speaker cabinet 11 $\frac{1}{2}$ " x 17 $\frac{1}{2}$ " x 8 $\frac{1}{2}$ " D; 17 $\frac{3}{4}$ " x 4 $\frac{3}{8}$ " x 10 $\frac{1}{2}$ " D; with cabinet; \$299.95

### NIKKO ELECTRIC CORP. OF AMERICA

#### Model STA 501S

AM-Stereo FM design; 11 W/channel continuous sine-wave into 8 ohms with both channels driven at 0.8% THD; dynamic power 25 W/channel into 8 ohms; input sensitivity 2.8 mV; mag. phono 200 mV; tape head 1.8 mV; HD 0.2% at 1 W output; FM sensitivity 1.8  $\mu$ V for 30 dB quieting; capture ratio 3 dB (IHF); separate level control for remote speaker; 117 V/240 V, 50-60 Hz operation; 15 $\frac{1}{4}$ " x 4 $\frac{1}{2}$ " x 12 $\frac{3}{4}$ " D; \$189.95

#### Model STA-1101

AM-Stereo FM design; 37 W/channel continuous sine-wave into 8 ohms with both chan-



nels driven at 0.3% THD; dynamic power 56 W/channel into 8 ohms; 80 W/channel into 4 ohms; input sensitivity 2.8 mV; mag. phono 200 mV; tape head 1.8 mV; HD 0.1% at 1 W output; FM sensitivity 1.5  $\mu$ V for 30 dB quieting; capture ratio 1.5 dB (IHF); two VU meters for stereo balance; six slide-type controls for bass, treble & volume; separate level control for remote speaker; separate preamp/amp outputs; 117 V/240 V, 50-60 Hz operation; 14 $\frac{1}{4}$ " x 4 $\frac{1}{2}$ " x 12 $\frac{3}{4}$ " D; (with black satin metal cabinet \$399.95); oiled walnut cabinet; \$419.95

#### Model STA-6010

AM-Stereo FM design; 15 W/channel continu-

ous sine-wave into 8 ohms with both channels driven at 0.8% THD; dynamic power 27 $\frac{1}{2}$  W/channel into 8 ohms at 5% THD; HD 0.2% at 1 W output; FM sensitivity 1.8  $\mu$ V for 30 dB quieting; capture ratio 3 dB (IHF); main/remote speaker & tape monitor switches; 15 $\frac{1}{4}$ " x 4 $\frac{1}{2}$ " x 12 $\frac{3}{4}$ " D; \$199.95

#### Model STA-8010

AM-Stereo FM design; 19 W/channel continuous sine-wave into 8 ohms with both channels



driven at 0.8% THD; dynamic power 42 $\frac{1}{2}$  W/channel into 8 ohms; response 20-30,000 Hz  $\pm$ 1 dB at rated output; HD 0.2% at 1 W output; FM sensitivity 1.8  $\mu$ V for 30 dB quieting; capture ratio 3 dB (IHF); signal-strength & stereo separation meters; main/remote & tape monitor switches; 15 $\frac{1}{4}$ " x 4 $\frac{1}{2}$ " x 12 $\frac{3}{4}$ " D; \$239.95

### OLSON

#### Model RA-280

AM-Stereo FM design; dynamic power 30 W/channel into 8 ohms; response 20-20,000 Hz;



FM sensitivity 2  $\mu$ V for 30 dB quieting; magnetic, ceramic phono, aux. & tape inputs; 14" x 5" x 11 $\frac{5}{8}$ " D; walnut cabinet; \$160.00

#### Model RA-288

Stereo FM-only design; dynamic power 50 W/channel into 8 ohms; response 30-20,000 Hz; capture ratio 2.7 dB (IHF); made in England by BRC Ferguson; 21 $\frac{1}{8}$ " x 3 $\frac{3}{4}$ " x 9 $\frac{7}{8}$ " D; walnut cabinet; \$220.00

#### Model RA-285

AM-Stereo FM design; dynamic power 120 W/channel into 8 ohms; response 20-20,000



Hz; capture ratio 2 dB (IHF); multiband tuner; made in Italy by Voxson; 31" x 5" x 7" D; (amp & tuner available separately \$200.00 each); rosewood cabinet; \$380.00

#### Model RA-110

AM-Stereo FM design; dynamic power 55 W/channel into 8 ohms; response 15-25,000 Hz; slide-type controls for volume, balance, bass & treble; main/remote speaker switch; inputs for mag. & ceramic phono & tape; 17" x 5" x 13 $\frac{1}{2}$ " D; walnut cabinet; \$188.00

#### Model RA-290

AM-Stereo FM design; dynamic power 87 $\frac{1}{2}$  W/channel into 8 ohms; response 30-20,000



Hz; main/remote speaker switch; will accept Garrard turntable mounting on top; tape monitoring; mag. & ceramic phono inputs; 18 $\frac{3}{8}$ " x 5 $\frac{3}{4}$ " x 14 $\frac{3}{4}$ " D; walnut cabinet; \$300.00

### PANASONIC

(Matsushita Electric Corp. of America)

#### Model SA-6500

AM-Stereo FM design; 50 W/channel continuous sine-wave into 8 ohms with both channels



driven at 0.5% THD; 70 W/channel into 4 ohms; dynamic power with 70 W/channel into 8 ohms; 100 W/channel into 4 ohms; power bandwidth 5-60,000 Hz; response 5-65,000 Hz +0, -3 dB; input sensitivity 2 & 2 mV; mag. phono (dual inputs) 170 mV; FM sensitivity 1.8  $\mu$ V for 30 dB quieting; capture ratio 1.5 dB (IHF); signal-strength & center-of-channel tuning meter, tape monitor; main/remote speaker selector switch; 16 $\frac{7}{8}$ " x 5 $\frac{1}{8}$ " x 15 $\frac{1}{4}$ " D; walnut cabinet; \$399.95

#### Model SA-5500

AM-Stereo FM design; 20 W/channel continuous sine-wave into 8 ohms with both channels driven at 0.5% THD; 29 W/channel into 4 ohms; dynamic power 25 W/channel into 8 ohms; 35 W/channel into 4 ohms; power bandwidth 7-40,000 Hz; response 15-50,000 Hz +0, -3 dB; input sensitivity 2 & 10 mV; mag. phono (dual inputs) 160 mV; FM sensitivity 2  $\mu$ V for 30 dB quieting; capture ratio 2 dB (IHF); main/remote speaker switch; 16" x 5 $\frac{1}{2}$ " x 14" D; walnut cabinet; \$199.95

#### Model SA-4000

AM-Stereo FM design; 90 W/channel continuous sine-wave into 4 ohms with both channels



driven at 0.1% THD; dynamic power 90 W/channel into 4 ohms; power bandwidth 20-30,000 Hz; response 20-50,000 Hz  $\pm$ 3 dB; input sensitivity 3 & 5 mV; mag. phono (dual inputs) 150 mV; FM sensitivity 1.5  $\mu$ V for 30 dB quieting; capture ratio 1 dB (IHF); up to 5 stations can be pre-set; motor tuning; remote control optional; ceramic filters; 20 $\frac{1}{8}$ " x 7" x 17" D; walnut cabinet; \$990.00

#### Model SA-6200

AM-Stereo FM design; 38 W/channel continuous sine-wave into 8 ohms with both channels



driven at 0.5% THD; 50 W/channel into 4 ohms; dynamic power 50 W/channel into 8 ohms; 75 W/channel into 4 ohms; power bandwidth 5-40,000 Hz; response 15-65,000 Hz +0, -3 dB; input sensitivity 3 mV; mag. phono 160 mV; FM sensitivity 1.8  $\mu$ V for 30 dB quieting; capture ratio 1.5 dB (IHF); slide-type controls for volume, balance, bass & treble; 16 $\frac{7}{8}$ " x 5 $\frac{1}{2}$ " x 14 $\frac{7}{8}$ " D; walnut cabinet; \$319.95

#### Model SA-5800

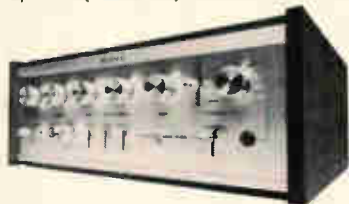
AM-Stereo FM design; 27 W/channel continu-

# If you can't tell a Sony 6055 from a Sony 6065, here's your chance to find out.

If you're about to invest in stereo, browse through the following selection of Sony components. You'll find a component that best fits your needs in almost every price category. You'll also find unique features that contribute to the superior performance which characterizes Sony components.

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**The amp that achieves true integration.** The Sony TA-1130 integrated amplifier (\$359.50) has an FET front



end that gives this integrated package a preamp stage that does full justice to its output section. The FET's (developed by Sony for this application) keep the preamp sensitive enough to handle lowest-output cartridges, yet let it accept the highest-output ones without overloading. The output section has similar specs as our TA-3130 basic amp; 230 IHF watts into 4 ohms (200 IHF watts into 8 ohms), continuous power 65/65 watts at 8 ohms. Power bandwidth extends from 7 Hz to 30 kHz, damping factor of 100 is exceeded down to 5 Hz. And the control facilities include a front-panel Aux input, plus provision to use the preamp and power amplifier sections separately.

**"A tuner as good as the best we have encountered."** The Sony ST-5000F FM-stereo tuner (\$399.50) is a perfect match for any of these amplifying systems. Sony FET's give it low internal noise for extreme sensitivity (1.8 uV IHF), plus an uncanny ability to handle powerful FM signals without cross-modulation. Three Sony ceramic-disc filters that never need alignment do the work

of a dozen ordinary i.f. transformers; they also keep selectivity ultra-sharp at 100 dB (IHF), capture ratio incredibly low at 1.5 dB. Features



include signal-strength and center-channel meters, high-blend to let you take the noise out of distant stereo broadcasts without eliminating separation and high frequencies, plus AFC and muting (with defeat switches for weak and noisy signals). You can even by-pass all but stereo stations. No surprise that *High Fidelity* found it "as good as the best FM sets we have encountered." And that one British Magazine (*HI-FI News*) compared it to Rolls-Royce.

**A tuner and amplifier with stereo you can feel.** The Sony ST-5100



AM/Stereo-FM tuner (\$219.50) utilizes the same design concepts as the ST-5000F, including passive RF circuits, Sony FET's and solid-state filters. Sensitivity is 2.6 uV (IHF), selectivity is 80 dB. Capture ratio is the same amazing 1.5 dB as in the ST-5000F. AM performance is surprisingly hi-fi, too. And the controls have a feel as silky-smooth as you'll find anywhere.



**The Sony TA-1144 amplifier** (\$219.50) is a pleasure to touch and a pleasure to listen to. Its human-engineered layout guides finger to function effortlessly, and its controls include subtly-detented graphic sliders for bass and treble on each channel, plus a horizontal, slide-type balance-control potentiometer. Other features include front-panel Aux inputs, high and low-cut filters and a speaker switch, plus provision to use the amplifier and the preamp sections independently. Power is 100 IHF watts into 8 ohms, 30/30 RMS watts, all at less than 0.2% distortion for full power level, less than 0.05% at 1/2 watt.

**A tuner and amplifier for the sharp of ear and flat of pocketbook.** The Sony ST-5600 AM/FM-stereo tuner (\$119.50, walnut cabinet included)



brings Sony component tuner quality within reach of even modest budgets. It has flywheel tuning and a long, long dial for easy station-finding plus such extras as switchable AFC and hi-blend, FET front end and solid-state i.f.'s. Sensitivity is 3 uV IHF, selectivity is 60 dB, and capture ratio a rather remarkable 1.6 dB.



**The Sony TA-1010 amplifier** (\$119.50, walnut cabinet included) gives the same high level of performance at the same modest price. It puts out 44 watts IHF into 8 ohms (15/15 watts RMS) at less than 0.5% harmonic distortion, less than 1% IM. Features include a front-panel Aux input, high filter, tape monitor, speaker switching and a sexy, sliding balance control.

**Our \$700 receiver.** The Sony 6200 FM-stereo receiver (\$699.50) has



power to spare, by whatever measure: 360 IHF watts into 4 ohms, 70/70 watts continuous power into 8 ohms with both channels driven, a minimum of 60/60 at all frequencies from 20 to 20,000 Hz.

And its FM performance matches that of its amplifier section. Sensitivity approaches the theoretical limit (1.2 uV for 20 dB quieting, 1.8 uV IHF), in an FET front end which avoids overload distortion on even the strongest signals. Solid-state i.f.'s help achieve a selectivity of 100 dB and a capture ratio of only 1.0 dB. Tuning is so accurate that you can dial your station with the power off and hear it come in clearly when you turn the power on again.

A full complement of controls allows you to blank out all but stereo FM signals, switch out muting to find weak and distant stations, and receive noisy stereo signals quietly, without loss of separation or high frequencies. The front panel sports both Aux inputs and line outputs for your convenience, and there's a center-channel output in the back.

**But a Sony receiver needn't cost you \$700.** The Sony 6065 AM/FM-stereo receiver (\$399.50) shares a number of the 6200's features (a

front-panel Aux input and center-channel output, for example), and adds AM reception, too. The amplifier section puts out 255 watts IHF into 4 ohms (220 watts IHF into 8



ohms); 70/70 RMS watts at 8 ohms with both channels driven simultaneously. Sensitivity is 2.2 uV (IHF), selectivity is 80 dB, and capture ratio is the same 1.5 dB as in our most expensive tuner.

**An immoderately good performer at a moderate price.** The Sony 6055 AM/FM-stereo receiver (\$299.50)



has virtually the same list of features as the 6065, including similar direct-coupled circuitry. Power is a hefty 145 watts IHF into 4 ohms (100 watts IHF into 8 ohms) 40/40 watts continuous at 8 ohms. IHF FM sensitivity is a notable 2.6 uV; selectivity and capture ratio are 80 dB and 1.5 dB respectively.

**Cleans your signal without cleaning out your bank account.** The Sony 6045 FM stereo/FM-AM receiver



(\$229.50) spares no detail to deliver a clean signal to your speakers. Its FM front end uses passive RF circuitry so that strong signals can't overload the input to swamp your station or pop up at several random places on the dial. By the time the signal does reach an active stage most of the undesirable signals have been shorn away. And, since that stage is an FET, it's virtually immune to overloading. Six solid-state IF filters clean the signal even further. What's more they never need realignment. The Sony 6045 provides 2.6 uV IHF sensitivity; 70 dB signal-to-noise ratio; 80 dB of selectivity; 100 dB of spurious signal rejection, a capture ratio of 1.5 dB.

Visit your Sony dealer today to see and hear these quality Sony stereo components. While you're there be sure to audition Sony turntables and speaker systems. Sony Corporation of America, 47-47 Van Dam St., Long Island City, New York 11101.

**SONY**

# 6

## Receivers

ous sine-wave into 8 ohms with both channels driven at 0.5% THD; 37 W/channel into 4 ohms; dynamic power 37 1/2 W/channel into 8 ohms; 50 W/channel into 4 ohms; power bandwidth 5-40,000 Hz; response 10-50,000 Hz +0, -1 dB; input sensitivity 2 mV; mag. phono 180 mV; FM sensitivity 1.8  $\mu$ V for 30 dB quieting; capture ratio 1.5 dB (IHF); facilities to record from one tape deck to another; center-channel output; main/remote speaker switch; 16" x 5 1/2" x 14" D; wood cabinet; \$259.95

### PIONEER

(U.S. Pioneer Electronics Corp.)

#### Model SX-1500TD

AM-Stereo FM design; 58 W/channel continuous sine-wave into 8 ohms with both channels driven at 0.5% THD; 70 W/channel into 4 ohms; dynamic power 72 1/2 W/channel into 8 ohms; 90 W/channel into 4 ohms; power bandwidth 15-70,000 Hz; response 10-100,000 Hz  $\pm$ 3 dB; input sensitivity 3.3 mV; FM sensitivity 1.7  $\mu$ V for 30 dB quieting; capture ratio 0.7% dB (IHF); mike mixing; handles up to 3 pairs of speakers; 110, 120, 130, 200, 240 V a.c. power supply; main/remote speaker switch; phono #1 & #2 selector; 18 1/8" x 5 3/4" x 14 1/2" D; microphone; rosewood end pieces; \$359.95

#### Model SX-990

AM-Stereo FM design; 28 W/channel continuous sine-wave into 8 ohms with both channels



driven and 0.5% THD; dynamic power 50 W/channel into 8 ohms; 65 W/channel into 4 ohms; power bandwidth 15-40,000 Hz; response 10-100,000 Hz  $\pm$ 3 dB; input sensitivity 3.3 mV; mag. phono 200 mV; ceramic phono 24 mV; FM sensitivity 1.7  $\mu$ V for 30 dB quieting; capture ratio 1 dB (IHF); mike input for either channel; 18 1/8" x 5 3/8" x 14 1/2" D; walnut cabinet; \$269.95

#### Model SX-770

AM-Stereo FM design; 15 W/channel continuous sine-wave into 8 ohms with both channels driven at 0.8% THD; 17 W/channel into 4 ohms; dynamic power 26 W/channel into 8 ohms; 35 W/channel into 4 ohms; power bandwidth 15-35,000 Hz; response 20-40,000 Hz  $\pm$ 3 dB; input sensitivity 2.5 mV; mag. phono 200 mV; ceramic phono 58 mV; mike 5 mV; FM sensitivity 1.8  $\mu$ V for 30 dB quieting; capture ratio 2.5 dB (IHF); can power two separate speaker systems; 17" x 5 3/4" x 13 3/4" D; walnut; \$199.95

#### Model SX-440

AM-Stereo FM design; 12 W/channel continuous sine-wave into 8 ohms with both channels driven at 1% THD; 15 W/channel into 4 ohms; dynamic power 16 1/2 W/channel into 8 ohms; 20 W/channel into 4 ohms; power bandwidth 30-20,000 Hz; response 20-70,000 Hz  $\pm$ 3 dB;



input sensitivity 3 mV; mag. phono 130 mV; FM sensitivity 2.5  $\mu$ V for 30 dB quieting; capture ratio 6 dB (IHF); will handle two separate speaker systems; 16" x 5 1/2" x 15" D; walnut cabinet; \$169.95

#### Model SX-9000

AM-Stereo FM design; 50 W/channel continuous sine-wave into 8 ohms with both channels driven at 0.5% THD; 60 W/channel into 4 ohms; dynamic power 75 W/channel into 8 ohms; 120 W/channel into 4 ohms; power bandwidth 10-35,000 Hz; response 10-35,000 Hz  $\pm$ 1 dB; input sensitivity 2.5 mV; mag. phono 160 mV; mike 1.6 mV; FM sensitivity 1.6  $\mu$ V for 30 dB quieting; capture ratio 1 dB (IHF); reverberation amplifier circuit; microphone; 3-pair speaker selector; mixing amp; magnetic & ceramic phono inputs; 110, 120, 130, 220 & 240 volt a.c. operation; 20 5/8" x 7 7/8" x 13 5/8" D; \$499.95

#### Model SX-2500

AM-Stereo FM design; 84 W/channel continuous sine-wave into 8 ohms with both channels driven at 0.5% THD; 120 W/channel into 4 ohms; dynamic power 104 W/channel into 8 ohms; 170 W/channel into 4 ohms; power bandwidth 20-30,000 Hz; response 20-70,000 Hz  $\pm$ 2 dB; input sensitivity 2.7 mV; mag. phono 200 mV; ceramic phono 60 mV; FM sensitivity 1.6  $\mu$ V for 30 dB quieting; capture ratio 1 dB (IHF); motor-driven automatic tuning dial; 23-ft remote control for tuning & volume; 5 IC's & 2 crystal filters; center-channel output; 110, 120, 130, 220, 240 volt a.c. operation 19 1/8" x 5 3/4" x 15 1/8" D; \$549.95

## SANSUI ELECTRONICS CORP.

#### Model 5000X

AM-Stereo FM design; 60 W/channel continuous sine-wave into 8 ohms with both channels



driven at 0.5% THD; 85 W/channel into 4 ohms; dynamic power 80 W/channel into 8 ohms; 100 W/channel into 4 ohms; power bandwidth 15-30,000 Hz; response 10-50,000 Hz  $\pm$ 1 dB at 1 W output; input sensitivity 2.5 & 2.5 mV; mag. phono (dual inputs) 150 mV; mike 3 mV; FM sensitivity 1.8  $\mu$ V for 30 dB quieting; capture ratio 1.5 dB (IHF); tape monitor #1 & #2; main/remote speaker selection; 100, 117, 220, 240 volt, 50/60 Hz a.c. power-line inputs; 18 1/4" x 6 3/8" x 13 1/4" D; walnut cabinet; \$399.95

#### Model 4000

AM-Stereo FM design; 45 W/channel continuous sine-wave into 8 ohms with both channels driven at 0.8% THD; 65 W/channel into 4 ohms; dynamic power 60 W/channel into 8 ohms; 80 W/channel into 4 ohms; power bandwidth 20-30,000 Hz at 8 ohms; response 20-40,000 Hz  $\pm$ 1 dB at 1 W output; input sensitivity 2.5 & 2.5 mV; mag. phono (dual inputs) 150 mV; FM sensitivity 1.8  $\mu$ V for 30 dB quieting; capture ratio 1 dB (IHF); main/remote speaker selection; tape monitor; 8 different power-line inputs, 50/60 Hz; 17 3/4" x 5 1/4" x 13 3/4" D; oiled walnut cabinet \$22.50; \$349.95

#### Model 2000A

AM-Stereo FM design; 35 W/channel continuous sine-wave into 8 ohms with both channels driven at 0.8% THD; 43 W/channel into 4 ohms; dynamic power 45 W/channel into 8 ohms; 60 W/channel into 4 ohms; power bandwidth 20-40,000 Hz at 8 ohms; response 20-40,000 Hz  $\pm$ 1 dB at 1 W output; input sensitivity 2.5 & 2.5 mV; mag. phono (dual inputs) 150 mV; FM sensitivity 1.8  $\mu$ V for 30 dB quieting; capture ratio 1 dB (IHF); main/remote speaker selection; tape monitor; 8 different a.c. power-line

voltages, 50/60 Hz; 17 3/8" x 5" x 13 1/8" D; oiled walnut cabinet \$22.50; \$299.95

#### Model 1000X

AM-Stereo FM design; 28 W/channel continuous sine-wave into 8 ohms with both channels



driven at 0.8% THD; 35 W/channel into 4 ohms; dynamic power 38 W/channel into 8 ohms; 50 W/channel into 4 ohms; power bandwidth 20-30,000 Hz; response 20-30,000 Hz  $\pm$ 1 dB at 1 W output; input sensitivity 2.5 mV; mag. phono 150 mV; FM sensitivity 2  $\mu$ V for 30 dB quieting; capture ratio 2.5 dB (IHF); main/remote speaker switch; tape monitor #1 & #2; 8 different a.c. power-line voltages, 50/60 Hz; 16 1/2" x 5 3/4" x 12 1/8" D; walnut cabinet; \$269.95

#### Model 350A

AM-Stereo FM design; 20 W/channel continuous sine wave into 8 ohms with both channels driven at 1% THD; 22 W/channel into 4 ohms; dynamic power 23 W/channel into 8 ohms; 27 W/channel into 4 ohms; power bandwidth 30-30,000 Hz; response 30-30,000 Hz  $\pm$ 1 dB at 1 W output; input sensitivity 2.2 mV; mag. phono 150 mV; FM sensitivity 3  $\mu$ V for 30 dB quieting; capture ratio 3 dB (IHF); main/remote speaker switch; 8 different a.c. power-line voltages; 50/60 Hz; tape monitor; 16 3/8" x 5 3/4" x 12 1/8" D; walnut cabinet; \$199.95

#### Model 210

AM-Stereo FM design; 10 W/channel continuous sine-wave into 8 ohms with both channels driven at 1% THD; 11 W/channel into 4 ohms; dynamic power 11 W/channel into 8 ohms; 17 W/channel into 4 ohms; power bandwidth 30-25,000 Hz; response 25-30,000 Hz  $\pm$ 2 dB; input sensitivity 3 mV; mag. phono 180 mV; FM sensitivity 5.5  $\mu$ V for 30 dB quieting; 100, 117, 220, 240 volt, 50/60 Hz power supply; tape monitor; 17 1/8" x 5" x 11 1/8" D; walnut cabinet; \$129.95

#### Model Eight

AM-Stereo FM design; 60 W/channel continuous sine-wave into 8 ohms with both channels



driven at 0.3% THD; 80 W/channel into 4 ohms; dynamic power 80 W/channel into 8 ohms; 100 W/channel into 4 ohms; power bandwidth 10-40,000 Hz; response 5-50,000 Hz  $\pm$ 1 dB at 1 W output; input sensitivity 2 & 2 mV; mag. phono (dual inputs) 180 mV; FM sensitivity 1.7  $\mu$ V for 30 dB quieting; capture ratio 1.5 dB (IHF); main/remote speaker switch; can handle 3 sets of speakers; independent preamp & power amp sections; equipped for 2 tape decks, 2 tape monitors; has 8 different a.c. power-line voltages; 17 1/2" x 5 1/2" x 12 7/8" D; walnut cabinet; \$499.95

## H. H. SCOTT, INC.

#### Model 367

AM-Stereo FM design; 30 W/channel continuous sine-wave into 8 ohms with both channels driven at 0.5% THD; 35 W/channel into 4 ohms; power bandwidth 25-20,000 Hz; input sensitivity 2.5 & 5 mV; mag. phono 500 mV; FM sensitivity 2.5  $\mu$ V for 30 dB quieting; capture ratio 2.5 dB (IHF); tape monitor; 18" x 5 1/2" x 12" D; \$259.90

#### Model 377

AM-Stereo FM design; 40 W/channel continuous

ous sine-wave into 8 ohms with both channels driven at 0.5% THD; 50 W/channel into 4 ohms; power bandwidth 15-30,000 Hz; input sensitivity 3.6 & 6 mV; mag. phono 450 mV; mike 10 mV; FM sensitivity 1.9  $\mu$ V for 30 dB quieting; capture ratio 2.5 dB (IHF); main/remote speaker switches; 17" x 5 1/2" x 11 1/4" D; \$319.90

#### Model 477

AM-Stereo FM design; 70 W/channel continuous sine-wave into 8 ohms with both channels



driven at 0.5% THD; 100 W/channel into 4 ohms; power bandwidth 15-40,000 Hz; input sensitivity 4 & 8 mV; mag. phono (dual inputs) 550 mV; mike 5.5 mV; FM sensitivity 1.9  $\mu$ V for 30 dB quieting; capture ratio 2.5 dB (IHF); six-way speaker switching for up to 3 pairs; 17 1/2" x 6" x 15 1/2" D; \$399.90

#### Model 387

AM-Stereo FM design; 55 W/channel continuous sine-wave into 8 ohms with both channels driven at 0.5% THD; 85 W/channel into 4 ohms; dynamic power 70 W/channel into 8 ohms, 110 W/channel into 4 ohms; power bandwidth 10-38,000 Hz; input sensitivity 4.2 & 8.5 mV; mag. phono 700 mV; mike 5.5 mV; FM sensitivity 1.9  $\mu$ V for 30 dB quieting; capture ratio 2.5 dB (IHF); main/remote speaker switches; 17 1/2" x 6" x 15" D; \$359.90

#### Model 357

AM-Stereo FM design; 25 W/channel continuous sine-wave into 8 ohms with both channels



driven at 0.6% THD; 30 W/channel into 4 ohms; power bandwidth 25-20,000 Hz; input sensitivity 2.5 & 4.5 mV; mag. phono 300 mV; FM sensitivity 2.5  $\mu$ V for 30 dB quieting; capture ratio 2.5 dB (IHF); main/remote speaker switches; 15" x 4 3/8" x 14 1/4" D; \$199.90

### SHARP ELECTRONICS CORP.

#### Model STA-24N

AM-Stereo FM design; dynamic power 15 W/channel into 8 ohms at 5% THD; response 30-40,000 Hz; supplied with two 2-way speaker systems each 10" x 13 7/8" x 6 7/8" D; 17 3/8" x 4 7/8" x 12 1/2" D; walnut cabinet; \$189.95

### SHERWOOD ELECTRONIC LABS, INC.

#### Model S-7300

AM-Stereo FM design; 42 W/channel continuous sine-wave into 8 ohms with both channels driven at 0.6% THD; 52 W/channel into 4 ohms; dynamic power 60 W/channel into 8 ohms; 80 W/channel into 4 ohms; power bandwidth 8-35,000 Hz at 1% HD; response 20-20,000 Hz  $\pm$ 0.5 dB; input sensitivity 2.2 mV; mag. phono 230 mV; mike 2.1 mV; HD 0.1% at 10 W; FM sensitivity 1.8  $\mu$ V for 30 dB quieting; capture



1972 EDITION

ratio 1.9 dB (IHF); ceramic i.f. filters; simultaneous recording on two tape recorders or dubbing from one to another; 18 1/2" x 5 3/4" x 16" D; oiled walnut cabinet; \$319.95

#### Model SEL-200

AM-Stereo FM design; 60 W/channel continuous sine-wave into 8 ohms with 1 channel driven at 0.2% THD; 85 W/channel into 4 ohms; dynamic power 70 W/channel into 8 ohms; 112 W/channel into 4 ohms; power bandwidth 8-35,000 Hz at 1% HD; response 20-20,000 Hz  $\pm$ 1 dB; input sensitivity variable 1.6 to 7.2 V; mag. phono 200 mV; HD 0.1% at 10 W; FM sensitivity 1.5  $\mu$ V for 30 dB quieting; capture ratio 1.7 dB (IHF); 9-pole Legendre toroidal FM i.f. filter; main/remote speaker facilities; oiled walnut cabinet \$29.95; metal cabinet; \$599.00

#### Model S-7900

AM-Stereo FM design; 48 W/channel continuous sine-wave into 8 ohms; with 1 channel driven at 0.35% THD; 70 W/channel into 4 ohms; dynamic power 60 W/channel into 8 ohms; 90 W/channel into 4 ohms; power bandwidth 12-30,000 Hz; response 20-20,000 Hz  $\pm$ 1 dB; input sensitivity variable 1.6 to 50 mV; mag. phono 200 mV; HD 0.1% at 10 W; FM sensitivity 1.7  $\mu$ V for 30 dB quieting; capture ratio 1.9 dB (IHF); ceramic i.f.'s; main/remote speaker facilities; 16 1/2" x 5 1/4" x 14" D; (S-8900 without AM circuitry \$399.95); oiled walnut cabinet \$28.00; \$439.95

#### Model S-7100

AM-Stereo FM design; 25 W/channel continuous sine-wave into 8 ohms with 1 channel



driven and 1% THD; 30 W/channel into 4 ohms; dynamic power 35 W/channel into 8 ohms; 40 W/channel into 4 ohms; power bandwidth 25-20,000 Hz; response 30-20,000 Hz  $\pm$ 2 dB; input sensitivity 1.5 mV; mag. phono 200 mV; HD 0.35% at 10 W; FM sensitivity 1.9  $\mu$ V for 30 dB quieting; capture ratio 2.8 dB (IHF); main/remote speaker facilities; 17 1/2" x 5 3/4" x 13 1/2" D; oiled walnut cabinet; \$199.95

### SONY CORPORATION OF AMERICA

#### Model STR-6045

AM-Stereo FM design; 25 W/channel continuous sine-wave into 8 ohms with both channels driven at 0.5% THD; dynamic power 37 1/2 W/channel into 8 ohms; 42 W/channel into 4 ohms; power bandwidth 10-30,000 Hz; response 10-50 000 Hz +0, -3 dB at rated output; input sensitivity 2.5 mV; FM sensitivity 2.6  $\mu$ V for 30 dB quieting; capture ratio 1.5 dB (IHF); 15 3/4" x 5 3/4" x 12 1/4" D; oiled walnut cabinet optional; metal cabinet; \$229.50

#### Model STR-6055

AM-Stereo FM design; 40 W/channel continuous sine-wave into 8 ohms with both channels



driven at 0.2% THD; 50 W/channel into 4 ohms; dynamic power 50 W/channel into 8 ohms; 72 W/channel into 4 ohms; power bandwidth 15-30,000 Hz; response 12-60,000 Hz +0, -3 dB; input sensitivity 1.8 mV; FM sensitivity 2.6  $\mu$ V for 30 dB quieting; capture ratio 1.5 dB (IHF); 17 3/8" x 5 7/8" x 12 3/8" D; oiled walnut cabinet optional; metal cabinet; \$299.50

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# 6

## Receivers

### Model STR-6065

AM-Stereo FM design; 70 W/channel continuous sine-wave into 8 ohms with both channels driven at 0.2% THD; 80 W/channel into 4 ohms; dynamic power 110 W/channel into 8 ohms; 127 W/channel into 4 ohms; power bandwidth 15-30,000 Hz; response 12-100,000 Hz +0, -3 dB; input sensitivity 1.4 mV; FM sensitivity 2.2  $\mu$ V for 30 dB quieting; capture ratio 1.5 dB (IHF); 17 $\frac{3}{8}$ " x 5 $\frac{7}{8}$ " x 14" D; oiled walnut cabinet optional; metal cabinet; \$399.50

### Model STR-6200F

Stereo-FM receiver; 70 W/channel continuous sine-wave into 8 ohms with both channels driv-



en at 0.2% THD; 90 W/channel into 4 ohms; dynamic power 122 $\frac{1}{2}$  W/channel into 8 ohms; 180 W/channel into 4 ohms; power bandwidth 10-40,000 Hz; response 10-100,000 Hz +0, -3 dB; input sensitivity 1.4 mV; FM sensitivity 1.8  $\mu$ V for 30 dB quieting; capture ratio 1 dB (IHF); 19" x 5 $\frac{3}{4}$ " x 15 $\frac{1}{8}$ " D; oiled walnut cabinet optional; metal cabinet; \$699.50

### Model STR-222

AM-Stereo FM design; 8 W/channel continuous sine-wave into 8 ohms with both channels driven at 0.8% THD; dynamic power 12 W/channel into 8 ohms; power bandwidth 30-15,000 Hz; response 20-50,000 Hz +0, -3 dB; FM sensitivity 3  $\mu$ V for 30 dB quieting; capture ratio 2 dB (IHF); 16 $\frac{1}{8}$ " x 4 $\frac{3}{8}$ " x 12 $\frac{3}{8}$ " D; \$149.50

### STANDARD RADIO CORP.

### Model SR-1500

AM-Stereo FM design; 40 W/channel continuous sine-wave into 8 ohms with both channels driven; 50 W/channel into 4 ohms; dynamic power 75 W/channel into 4 ohms; power bandwidth 10-40,000 Hz at 8 ohms; response 5-30,000 Hz +0, -1 dB at 8 ohm output; input sensitivity 1.8 mV; mag. phono (dual inputs) 100 mV; mike 1.5 mV; HD 0.5% at rated output; FM sensitivity 1.8  $\mu$ V for 30 dB quieting; capture ratio 1.5 dB (IHF); main/remote speaker & tape monitor switches; 17" x 6 $\frac{1}{4}$ " x 13 $\frac{1}{2}$ " D; \$309.95

### Model SR-207U

AM-Stereo FM design; 10 W/channel continuous sine-wave into 8 ohms with both channels



driven; dynamic power 15 W/channel into 8 ohms; power bandwidth 30-20,000 Hz; response 20-30,000 Hz; input sensitivity 2.5 mV; mag. phono 100 mV; ceramic input 150 mV; HD 0.8%; FM sensitivity 5  $\mu$ V  $\pm$ 3 dB for 30 dB quieting; 15 $\frac{3}{4}$ " x 3 $\frac{1}{2}$ " x 11" D; \$129.95

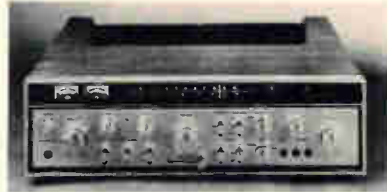
### Model SR-1000

AM-Stereo FM design; 20 W/channel continuous sine-wave into 8 ohms with both channels driven; response 20-20,000 Hz  $\pm$ 1 dB at rated output; input sensitivity 2.5 mV; mag. phono 100 mV; HD 1% at rated output; capture ratio

2.5 dB (IHF); 16 $\frac{3}{4}$ " x 5 $\frac{1}{2}$ " x 12 $\frac{7}{8}$ " D; cabinet; \$209.95

### Model SR-4500

AM-Stereo FM design; 100 W/channel continuous sine-wave into 8 ohms with both channels



driven; power bandwidth 5-50,000 Hz; response 20-30,000 Hz +0, -1 dB at 1 W output; input sensitivity 1.8 mV; mag. phono 180 mV; FM sensitivity 1.5  $\mu$ V for 30 dB quieting; capture ratio 1.5 dB (IHF); \$600.00

### Model SR-500U

AM-Stereo FM design; 12 W/channel continuous sine-wave into 8 ohms with both channels driven; 15 W/channel into 4 ohms; dynamic power 25 W/channel into 4 ohms; power bandwidth 20-50,000 Hz into 8 ohms; response 30-15,000 Hz  $\pm$ 3 dB; input sensitivity 2.5 mV; mag. phono 100 mV; HD 0.9% at rated output; FM sensitivity 2.5  $\mu$ V for 30 dB quieting; capture ratio 2.5 dB (IHF); main/remote speaker & tape monitor switches; 15 $\frac{1}{4}$ " x 5 $\frac{3}{8}$ " x 11" D; walnut wood cabinet; \$169.95

### SYLVANIA ELECTRIC PRODUCTS INC.

(Subs. General Telephone & Electronics)

### Model CR275WX

AM-Stereo FM design; 15 W/channel continuous sine-wave with 1 channel driven; dynamic power 22 $\frac{1}{2}$  W/channel; power bandwidth 25-30,000 Hz; response at tape inputs 45-40,000 Hz; HD 0.5%; FM sensitivity 2.8  $\mu$ V for 30 dB quieting; capture ratio 5.2 dB (IHF); main/remote speaker switch; mag. phono & tape inputs; 17 $\frac{1}{2}$ " x 5 $\frac{1}{2}$ " x 13 $\frac{3}{8}$ " D; with cabinet; \$179.95

### Model CR280W

Same as Model CR275WX except 27 $\frac{1}{2}$  W/channel



nel continuous sine-wave; dynamic power 32 $\frac{1}{2}$  W/channel; power bandwidth 45-18,000 Hz; with cabinet; \$199.95

### TOSHIBA AMERICA, INC.

### Model SA-20Y

AM-Stereo FM design; 50 W/channel continuous sine-wave into 8 ohms with one channel



driven at 0.4% HD; dynamic power 60 W/channel into 8 ohms at 0.4% HD; power bandwidth 20-40,000 Hz; response 20-60,000 Hz +0, -3 dB at rated output; input sensitivity 3 mV; mag. phono 200 mV; 2.5 mV tape head; HD 0.1% at 1 W (rms); FM sensitivity 2  $\mu$ V for 30 dB quieting; main/remote speaker switch; preamp out-

puts & main amp inputs with external jumper cables for use with Toshiba SC-410 Quad-Matrix converter/amplifier; 19 $\frac{1}{2}$ " x 7 $\frac{1}{4}$ " x 15 $\frac{3}{8}$ " D; \$349.50

### Model SA-15Y

AM-Stereo FM design; same as Model SA-20Y except 30 W/channel continuous sine-wave into 8 ohms with 1 channel driven at 0.8% HD; dynamic power 35 W/channel into 8 ohms at 0.8% HD; response 20-50,000 Hz +0, -3 dB at rated output; HD 0.1% at 1 W to  $\frac{1}{3}$  power; \$299.50

### Model SA-400

AM-Stereo FM design; 15 W/channel continuous sine-wave into 8 ohms with 1 channel driv-



en at 0.8% HD; dynamic power 20 W/channel into 8 ohms at 0.8% HD; power bandwidth 20-40,000 Hz; response 20-40,000 Hz +0, -3 dB at rated output; input sensitivity 3 mV; mag. phono 200 mV; HD 0.2% at 1 W output; FM sensitivity 2.5  $\mu$ V for 30 dB quieting; connection & switch for 4-channel adapter; remote/main speaker switch; has several IC's; connections for equalizer or electronic crossover; 16 $\frac{1}{2}$ " x 4 $\frac{1}{2}$ " x 11 $\frac{1}{4}$ " D; \$199.50

### V-M CORP.

### Model 1494

AM-Stereo FM design; 15 W/channel continuous sine-wave into 8 ohms with 1 channel driv-



en at 5% HD; dynamic power 22 $\frac{1}{2}$  W/channel into 8 ohms at 1% HD; response 20-20,000 Hz  $\pm$ 1 dB at rated output; input sensitivity 7 mV; mag. phono 100 mV; ceramic phono 100 mV; HD 0.8% at half-power; FM sensitivity 1.8  $\mu$ V for 30 dB quieting; capture ratio 1.9 dB (IHF); 6" x 18" x 15 $\frac{1}{2}$ " D; simulated oiled walnut cabinet; (Model 1498 same except 50 W/channel dynamic power at 5% HD; \$289.95); \$249.95

### YAMAHA INTERNATIONAL CORP.

### Model CR-700

AM-Stereo FM design; 40 W/channel continuous sine-wave into 8 ohms with 1 channel driven; dynamic power 60 W/channel into 8 ohms; power bandwidth 10-56,000 Hz at 0.5% HD; response (at auxiliary input) 20-30,000 Hz +1, -3 dB at rated output; input sensitivity 3 mV; mag. phono (dual inputs) 200 mV; HD 0.05% at 1000 Hz; FM sensitivity 1.7  $\mu$ V for 30 dB quieting; capture ratio 1.5 dB (IHF); main/remote speaker switch; 16 $\frac{1}{2}$ " x 5 $\frac{1}{2}$ " x 11 $\frac{3}{4}$ " D

### Model CR-500

AM-Stereo FM design; 22 W/channel continuous sine-wave into 8 ohms with 1 channel driven; dynamic power 30 W/channel into 8 ohms; power bandwidth 18-46,000 Hz at 0.5% HD; response (at auxiliary input) 30-30,000 Hz +1, -3 dB; input sensitivity 3 mV; mag. phono (dual inputs) 200 mV; mike 4 mV; HD 0.05% at 20 W & 1000 Hz; FM sensitivity 2  $\mu$ V for 30 dB quieting; capture ratio 1.5 dB (IHF); main/remote speaker switch; 16 $\frac{1}{2}$ " x 5 $\frac{1}{2}$ " x 11 $\frac{3}{4}$ " D



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Model 1555. (Automatic turntable, magnetic cartridge, base dust cover.) Suggested retail, \$220.00.  
Model 93. Suggested retail, \$134.00.



# 7

# Tuners

Stereo-FM Only, AM/Stereo FM

**T**HE tuner selects one radio signal from the many intercepted by the antenna, amplifies it millions of times, and ultimately extracts the program modulation in a form suitable for driving an amplifier and loudspeakers. The Stereo-FM tuner also contains the multiplex circuits which separate a stereo broadcast into its left- and right-channel signals. Although AM reception is inferior to FM in frequency response, distortion, and signal-to-noise (S/N) ratio, some areas lack adequate FM coverage and must depend on AM service. Many tuners combine AM and FM circuits, with the two services sharing the dial and other controls.

The sensitivity of a tuner is a measure of its ability to receive weak signals. Up to a point, the background hiss decreases as signal-strength increases; eventually the tuner is fully quieted and the residual hiss is defined by the signal-to-noise ratio. The IHF Usable Sensitivity rating is based on a signal-to-noise ratio of 30 dB, which is too noisy for serious listening but can be used to compare different tuners. In most locations, a sensitivity of 3 microvolts (3  $\mu$ V) or better is satisfactory; remote or fringe-area reception can benefit from the more sensitive tuners rated at 1.5 to 2 microvolts.

There are several other specifications relating to tuners that each buyer should review carefully. Most of the important ones are expressed in decibels (dB) and the larger numbers almost always indicate a better (and usually more expensive) tuner. The capture ratio, however, is an exception, and the lower the dB rating the better the ability of the tuner to respond only to the stronger of two signals on the same frequency—rejecting the weaker one. A good capture ratio can be important in metropolitan areas where reflections from tall buildings create multipath distortion—audibly unpleasant and especially detrimental to good stereo reception. A few of the more elaborate tuners have a special metering circuit to monitor multipath effects. They are interesting designs and work very well.

High decibel ratings are important in stereo separation, signal-to-noise ratio and suppression of stereo pilot and SCA carriers riding on the FM signal. Selectivity (not listed in this Directory) is also important in urban areas where the number of FM stations and sensitivity of a good tuner may create an awkward situation where the listener can receive more stations than he could possibly desire.

JULIAN D. HIRSCH

## ACOUSTIC RESEARCH, INC.

### AR FM

Stereo FM; solid-state; sensitivity 2.0  $\mu$ V; >40 dB stereo separation at 400 Hz; <2.0 dB



capture ratio; <0.5% IM distortion; 65 dB S/N ratio; stereo indicator light; center-of-carrier meter; inter-station muting; crystal i.f. filters; 4 1/2" H x 15 1/4" W x 9 7/8" D; aluminum panel; walnut cabinet; \$210.00.

## ALLIED RADIO SHACK

### TM-90

AM-Stereo FM; solid state; sensitivity 3.0  $\mu$ V (reference not stated); stereo indicator light;



center-of-carrier meter; push-button mode selector; black-out dial; inter-station muting; walnut cabinet; \$99.95.

### TM-100

AM-Stereo FM; solid state; usable sensitivity 5.0  $\mu$ V (for 20 dB quieting); stereo indicator light; center-of-carrier meter; walnut vinyl cabinet; \$34.95.

1972 EDITION

## ALTEC LANSING

### Model 724A

AM-Stereo FM; solid state; sensitivity 1.8  $\mu$ V (IHF); response 20-15,000 Hz at  $\pm$ 1.0 dB; >40 dB stereo separation at 1000 Hz; 1.3 dB capture ratio; 0.3% HD distortion; 5.0 V output; stereo indicator light; signal strength meter; center-of-carrier meter; inter-station muting; crystal i.f. filters; AM sensitivity 15  $\mu$ V; built-in stereo preamp with two phono inputs, tape and Aux inputs, tone controls, etc.; 5" H x 17 1/4" W x 16 1/2" D; \$550.00.

## BIC/LUX

### 71/5T

AM-Stereo FM; solid state; sensitivity 1.2  $\mu$ V (for 30 dB quieting); response 20-15,000 Hz at



$\pm$ 1.0 dB; 40 dB stereo separation at 1000 Hz; 2.5 dB capture ratio; <5% total distortion; 60 dB S/N ratio; stereo indicator light; signal strength meter; center-of-carrier light; interstation muting; crystal i.f. filters; 6" H x 18 1/2" W x 12 1/2" D; black and gold panel; \$322.00.

### 71/7T

AM-Stereo FM; solid state; usable sensitivity



2.2  $\mu$ V (for 30 dB quieting); frequency response 20-15,000 Hz at  $\pm$ 1.0 dB; 30 dB stereo separation at 1000 Hz; 4.0 dB capture ratio; <7% total distortion; 50 dB S/N ratio; stereo indicator light; signal strength meter; inter-station muting; 5" H x 16 1/2" W x 9" D; \$179.00.

## DYNACO, INC.

### FM-5

Stereo FM; solid state; sensitivity 1.75  $\mu$ V (IHF); response 30-52,000 Hz at  $\pm$ 1.0 dB; 40 dB



stereo separation at 1000 Hz; 1.5 dB capture ratio; 0.50% nominal total distortion; 65 dB S/N ratio; 55 dB subcarrier suppression; 2 V output; stereo indicator light; signal strength meter; interstation muting; ceramic i.f. filters; 4 1/2" H x 13 1/2" W x 9" D; gold panel; \$249.95 (available as a kit for \$149.95).

## EICO ELECTRONIC INSTRUMENT CO., INC.

### Cortina (3200)

Stereo FM; solid-state; sensitivity 2.4  $\mu$ V (for



# 7

## Tuners

30 dB quieting); response 20-15,000 Hz at  $\pm 1.0$  dB; 40 dB stereo separation at 1000 Hz; 4.5 dB capture ratio; .75% nominal HD distortion; 60 dB S/N ratio; 40 dB pilot suppression; stereo indicator light; signal strength meter;  $3\frac{1}{8}$ " H  $\times$  12" W  $\times$  7 $\frac{3}{4}$ " D; silver panel; \$139.95 (available as a kit for \$99.95).

### Cortina (3300)

AM-Stereo FM; solid-state; usable sensitivity 3.5  $\mu$ V (for 30 dB quieting); 33 dB stereo separation at 1000 Hz; <4.0 dB capture ratio; 1.75% nominal HD distortion; 60 dB S/N ratio; 35 dB pilot suppression; stereo indicator light; center-of-carrier meter; inter-station muting; AM sensitivity 100  $\mu$ V;  $3\frac{1}{8}$ " H  $\times$  12 $\frac{9}{16}$ " W  $\times$  6 $\frac{3}{4}$ " D; \$109.95 (available as a kit for \$69.95).

### HEATH COMPANY

#### Heathkit AJ-15

Stereo FM; solid-state; sensitivity 1.8  $\mu$ V (IHF); response 20-15,000 Hz at  $\pm 1.0$  dB; 40 dB stereo



separation at 1000 Hz; 1.5 dB capture ratio; 0.5% HD distortion; 50 dB SCA suppression; 1.5 V output; stereo indicator light; signal strength meter; center-of-carrier meter; inter-station muting; multi-path indicator; crystal i.f. filters;  $4\frac{3}{4}$ " H  $\times$  16 $\frac{7}{8}$ " W  $\times$  12 $\frac{1}{2}$ " D; walnut cabinet (\$19.95); \$189.95 (kit).

#### Heathkit AJ-14

Stereo-FM; solid-state; sensitivity 5.0  $\mu$ V; 30 dB stereo separation at 1000 Hz; 3.0 dB capture



ratio; <1.0% HD distortion; stereo beacon; stereo phase control; walnut cabinet (\$9.95); \$57.95 (kit).

### HITACHI SALES CORP.

#### FT-600

AM-Stereo FM; solid-state; sensitivity 2.5  $\mu$ V (IHF); 30 dB stereo separation; 3.0 dB capture



ratio; 1.5% THD; signal strength meter; center-of-carrier meter; not available until late 1972.

### KENWOOD ELECTRONICS, INC.

#### KT-2001

AM-Stereo FM; solid state; sensitivity 2.0  $\mu$ V (IHF); response 20-15,000 Hz at  $\pm 1.0$  dB; >30 dB stereo separation at 1000 Hz; 4.0 dB capture ratio; <0.7% HD distortion; >60 dB S/N ratio;



1.0 V output; stereo indicator; signal strength meter; inter-station muting; AM sensitivity 25  $\mu$ V (external antenna); 5" H  $\times$  13" W  $\times$  9 $\frac{1}{2}$ " D; oiled walnut cabinet (\$15.00); \$99.95.

#### KT-5000

AM-Stereo FM; solid-state; usable sensitivity 1.7  $\mu$ V (IHF); frequency response 20-15,000 Hz at  $\pm 1.0$  dB; 35 dB stereo separation at 1000 Hz; 2.5 dB capture ratio; <0.9% HD distortion; >60 dB S/N ratio; 1.0 V output; stereo indicator; signal strength meter; center-of-carrier meter; inter-station muting; mechanical i.f. filters; AM sensitivity (IHF) is 15  $\mu$ V;  $5\frac{3}{16}$ " H  $\times$  16 $\frac{1}{4}$ " W  $\times$  11" D; \$179.95.

#### KT 7001

AM-Stereo FM; solid-state; usable sensitivity 1.5  $\mu$ V (IHF); frequency response 20-15,000 Hz



at  $\pm 0.75$  dB; >40 dB stereo separation at 1000 Hz; 1.0 dB capture ratio; <0.5% HD; 60 dB S/N ratio; 50 dB subcarrier suppression; 1.5 V output; stereo indicator light; signal strength meter; center-of-carrier meter; inter-station muting; multi-path indicator; crystal i.f. filters; multipath filter; AM sensitivity 100  $\mu$ V; (built-in antenna);  $5\frac{1}{8}$ " H  $\times$  16 $\frac{1}{4}$ " W  $\times$  11" D; walnut; \$279.95.

### KLH RESEARCH & DEVELOPMENT CORP.

#### Model Eighteen

Stereo FM; solid-state; sensitivity 2.0  $\mu$ V (for 30



dB quieting); response 20-15,000 Hz at  $\pm 1.0$  dB; 3.0 dB capture ratio; 0.5% total HD; stereo indicator; \$129.95.

### LAFAYETTE RADIO

#### LT-725A

AM-Stereo FM; solid-state; usable sensitivity 1.7  $\mu$ V (for 70 dB quieting); frequency response 50-15,000 Hz; 40 dB stereo separation at 400 Hz; 1.5 dB capture ratio; 0.25% HD distortion; 75 dB S/N ratio; stereo indicator light; signal strength meter; center-of-carrier meter; inter-station muting; AM sensitivity 20  $\mu$ V;  $3\frac{3}{4}$ " H  $\times$  12" W  $\times$  9 $\frac{1}{8}$ " D; golden panel; \$119.95.



#### LT-670

AM-Stereo FM; solid-state; sensitivity 3.5  $\mu$ V (for 20 dB quieting); response 50-15,000 Hz; 30 dB stereo separation at 400 Hz; 5.0 dB capture ratio; 0.7% HD distortion; 50 dB S/N ratio; 1.0 V output; stereo indicator light; AM sensitivity 20  $\mu$ V;  $3\frac{1}{2}$ " H  $\times$  10 $\frac{5}{8}$ " W  $\times$  8 $\frac{3}{8}$ " D; golden panel; \$79.95.

### LEAK (Ercona Corp.)

#### Stereofetic

Stereo FM; solid-state; sensitivity 2.0  $\mu$ V (for 30 dB quieting); response 40-15,000 Hz  $\pm 1$  dB;



>30 dB stereo separation at 1000 Hz; 3.5 dB capture ratio; <.25% nominal distortion; 60 dB S/N ratio; 0.9 V output; stereo beacon; signal strength meter; inter-station muting;  $4\frac{1}{4}$ " H  $\times$  11 $\frac{1}{2}$ " W  $\times$  7 $\frac{3}{4}$ " D; \$225.00.

### MARANTZ CO., INC.

(Subs. of Superscope, Inc.)

#### Model 20

Stereo FM; sensitivity 1.8  $\mu$ V (IHF); response 20-15,000 Hz at  $\pm 0.5$  dB; 45 dB stereo separation at 1000 Hz; 1.9 dB capture ratio; 0.15% HD distortion; 73 dB S/N ratio; oscilloscope tuning, center-of-carrier and inter-station muting;  $5\frac{3}{4}$ " H  $\times$  15 $\frac{3}{8}$ " W  $\times$  14 $\frac{1}{8}$ " D; walnut cabinet (\$32.00); \$695.00.

#### Model 110

AM-Stereo FM; usable sensitivity 2.3  $\mu$ V (IHF); frequency response 50-15,000 Hz at  $\pm 1.0$  dB;



42 dB stereo separation at 1000 Hz; 1.6 dB capture ratio; 0.3% HD distortion; 65 dB S/N ratio; oscilloscope tuning, center-of-carrier and inter-station muting;  $5\frac{3}{4}$ " H  $\times$  15 $\frac{3}{8}$ " W  $\times$  14 $\frac{1}{8}$ " D; walnut cabinet (\$32.00); \$395.00.

#### Model 120

AM-Stereo FM; solid state; usable sensitivity 3.0  $\mu$ V (IHF); frequency response 50-15,000 Hz



at  $\pm 1.0$  dB; 40 dB stereo separation at 1000 Hz; 3.0 dB capture ratio; 0.5% HD distortion; 60 dB S/N ratio; stereo beacon; signal strength meter; center-of-carrier meter; inter-station muting;  $5\frac{1}{4}$ " H  $\times$  15 $\frac{3}{8}$ " W  $\times$  12" D; \$159.00.

### NIKKO ELECTRIC CORP. OF AMERICA

#### FAM-400

AM-Stereo FM; solid-state; sensitivity 2.0  $\mu$ V (IHF); 45 dB stereo separation at 1000 Hz;

3.0 dB capture ratio; 0.8% nominal total distortion; -55 dB hum and noise; stereo indicator light; signal strength meter; inter-station muting; AM sensitivity 150  $\mu$ V for 20 dB S/N; 3 $\frac{3}{4}$ " H x 12" W x 9 $\frac{3}{4}$ " D; Aluminum panel; \$109.95.

#### FAM-1200

AM-Stereo FM; solid-state; usable sensitivity 1.5  $\mu$ V (IHF); 40 dB stereo separation at 1000



Hz; 1.5 dB capture ratio; 0.6% nominal total distortion; -70 dB hum and noise; stereo indicator light; signal strength meter; center-of-carrier meter; inter-station muting; AM sensitivity 100  $\mu$ V for 20 dB S/N; 4 $\frac{1}{2}$ " H x 15 $\frac{1}{4}$ " W x 12 $\frac{3}{4}$ " D; \$239.95.

#### OLSON

##### RA-235 Voxson

AM-Stereo FM; solid-state; 30 dB stereo separation (reference not stated); 2.0 dB capture



ratio; stereo indicator light; signal strength meter; inter-station muting; features long wave and short wave band tuning; 4 $\frac{3}{4}$ " H x 15 $\frac{1}{2}$ " W x 17 $\frac{1}{2}$ " D; rosewood cabinet; \$200.00.

##### RA-310

AM-Stereo FM; solid-state; 32 dB stereo separation (reference not stated); stereo indicator light; signal strength meter; 4 $\frac{1}{4}$ " H x 11 $\frac{1}{4}$ " W x 7 $\frac{1}{4}$ " D; walnut cabinet; \$89.00.

#### PANASONIC

(Matsushita Electric Corp. of America)

##### Model ST-3600

AM-Stereo FM; solid-state; usable sensitivity 1.7  $\mu$ V (IHF); frequency response 30-13,000 Hz  $\pm$ 0.5 dB; 40 dB stereo separation at 1000 Hz; capture ratio 1.5 dB; total distortion 0.5%; 70 dB S/N ratio; 1.0 V output; stereo indicator light; signal-strength meter; center-of-carrier meter; inter-station muting; AM sensitivity 10  $\mu$ V (IHF); 5 $\frac{7}{8}$ " x 16 $\frac{1}{2}$ " x 14 $\frac{3}{4}$ " D; \$249.95.

#### PIONEER

(U.S. Pioneer Electronics Corp.)

##### TX-500

AM-Stereo FM; solid-state; sensitivity 2.5  $\mu$ V (IHF); 35 dB stereo separation at 1000 Hz; 6.0 dB capture ratio; 50 dB S/N ratio; stereo



indicator light; signal strength meter; inter-station muting; 5" H x 13" W x 13" D; walnut cabinet; \$99.50.

##### TX-600

AM-Stereo FM; solid-state; sensitivity 2.2  $\mu$ V (IHF); >40 dB stereo separation at 1000 Hz; 3.0 dB capture ratio; <0.8% HD distortion;



70 dB S/N ratio; stereo indicator light; signal strength meter; center-of-carrier meter; inter-station muting; ceramic i.f. filters; AM sensitivity 15  $\mu$ V (IHF); 5 $\frac{3}{4}$ " H x 17" W x 13 $\frac{1}{2}$ " D; \$159.95.

##### TX-800

AM-Stereo FM; solid-state; sensitivity 1.8  $\mu$ V (IHF); >40 dB stereo separation at 1000 Hz; 2.0 dB capture ratio; <0.8% HD distortion; 70 dB S/N ratio; stereo indicator light; signal strength meter; center-of-carrier meter; inter-station muting; ceramic i.f. filters; AM & FM output level adjustments on front panel, 5 $\frac{3}{4}$ " H x 17" W x 13 $\frac{1}{2}$ " D; \$199.95.

##### TX-1000

AM-Stereo FM; solid-state; sensitivity 1.7  $\mu$ V (IHF); >40 dB stereo separation at 1000 Hz;



1.5 dB capture ratio; <0.5% HD distortion; 70 dB S/N ratio; stereo indicator light; signal strength meter; center-of-carrier meter; variable inter-station muting; crystal i.f. filters; AM and FM output level adjustments on front panel; AM sensitivity 8  $\mu$ V (IHF); 5 $\frac{3}{4}$ " H x 17" W x 13 $\frac{1}{2}$ " D; \$279.95.

#### REVOX CORPORATION

##### Model A-76

Stereo FM; solid-state; sensitivity 1.0  $\mu$ V (for 30 dB quieting); response 30-15,000 Hz at  $\pm$ 0.5 dB; 40 dB stereo separation at 1000 Hz; 1.0 dB capture ratio; 0.2% distortion; 70 dB S/N ratio; 40 dB pilot suppression; 1.0 V output; stereo indicator light; signal strength me-

## Regarding Prices:

Unless otherwise indicated, all prices quoted should be considered "audiophile net."

As would be expected, prices do vary across the country and those quoted are usually the ones prevailing in the manufacturer's immediate vicinity. Obviously, because of transportation costs, prices in areas remote from his location will be higher.

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### AUDIO UNLIMITED, INC.

396 Third Ave. (Nr. 28), N. Y.,  
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CIRCLE NO. 7 ON READER SERVICE CARD

# 7

## Tuners



ter; center-of-carrier meter; inter-station muting; multi-path indicator; 9<sup>3</sup>/<sub>8</sub>" H x 16<sup>3</sup>/<sub>8</sub>" W x 6<sup>3</sup>/<sub>8</sub>" D; \$495.00.

### SANSUI ELECTRONICS CORP.

#### TU-555

AM-Stereo FM; solid-state; sensitivity 2.5  $\mu$ V (IHF); >35 dB stereo separation at 1000 Hz; 3.0 dB capture ratio; <0.8% HD distortion; >60 dB S/N ratio; stereo indicator light; signal strength meter; inter-station muting; AM sensitivity 20  $\mu$ V at 1000 kHz; 4<sup>3</sup>/<sub>8</sub>" H x 11<sup>1</sup>/<sub>2</sub>" W x 10<sup>1</sup>/<sub>2</sub>" D; \$129.95.

#### TU-666

AM-Stereo FM; solid-state; sensitivity 2.5  $\mu$ V (IHF); >35 dB stereo separation at 400 Hz; 3.0



dB capture ratio; <0.8% total HD distortion; >65 dB S/N ratio; stereo indicator light; signal strength meter; inter-station muting; AM sensitivity 150  $\mu$ V (built in antenna); 5<sup>3</sup>/<sub>8</sub>" H x 13<sup>1</sup>/<sub>4</sub>" W x 11" D; \$159.95.

#### TU-999

AM-Stereo FM; solid-state; sensitivity 1.8  $\mu$ V (IHF); >38 dB stereo separation at 400 Hz; 1.5



dB capture ratio; <0.5% total HD distortion; >65 dB S/N ratio; stereo indicator light; signal strength meter; center-of-carrier meter; inter-station muting; crystal i.f. filters; 6<sup>1</sup>/<sub>8</sub>" H x 17<sup>1</sup>/<sub>8</sub>" W x 12<sup>1</sup>/<sub>2</sub>" D; \$279.95.

### H. H. SCOTT, INC.

#### Model 431

AM-Stereo FM; solid-state; sensitivity 1.7  $\mu$ V (IHF); response 50-15,000 Hz; 35 dB stereo separation; 2.5 dB capture ratio; 0.8% HD distortion; 65 dB S/N ratio; 60 dB pilot suppres-



sion; stereo indicator light; signal strength meter; center-of-carrier meter; inter-station muting; multipath indicator; AM sensitivity 100  $\mu$ V; 6" H x 17<sup>1</sup>/<sub>2</sub>" W x 15<sup>1</sup>/<sub>2</sub>" D; \$219.90.

#### Model 433

Stereo FM; solid-state; sensitivity 1.9  $\mu$ V (IHF); response 50-15,000 Hz; 35 dB stereo separa-



tion; 1.8 dB capture ratio; 0.25% HD distortion; 67 dB S/N ratio; 60 dB pilot suppression; 2.5 V output; stereo beacon; signal strength meter; inter-station muting; multi-path indicator; punched card station selection; card programmed digital frequency synthesizer; auto scanning; digital frequency readout; 6" H x 17<sup>3</sup>/<sub>8</sub>" W x 15" D; \$549.50.

### SHERWOOD ELECTRONIC LABS, INC.

#### Model S-2300

AM-Stereo FM; solid-state; sensitivity 1.8  $\mu$ V (IHF); response 20-15,000 Hz at  $\pm$ 0.5 dB; 40 dB stereo separation at 1000 Hz; 2.0 dB capture ratio; 0.15% nominal total distortion; stereo indicator light; center-of-carrier meter; inter-station muting; 4" H x 14" W x 10<sup>1</sup>/<sub>2</sub>" D; \$224.50.

#### Model S-3300

Stereo FM; solid-state; sensitivity 1.8  $\mu$ V (IHF); response 20-15,000 Hz at  $\pm$ 0.5 dB; 40 dB stereo



separation at 1000 Hz; 2.0 dB capture ratio; 0.15% nominal total distortion; stereo indicator light; center-of-carrier meter; inter-station muting; 4" H x 14" W x 10<sup>1</sup>/<sub>2</sub>" D; \$197.50.

#### SEL-300

AM-stereo FM; solid-state; sensitivity 1.5  $\mu$ V (IHF); stereo indicator light; signal strength



meter; center-of-carrier meter; inter-station muting; multi-path indicator output; 12 pole toroidal i.f. filters; 7-segment digital station frequency readout; \$579.00.

### SONY CORP. OF AMERICA

#### ST-5000F

Stereo FM; solid-state; sensitivity 1.8  $\mu$ V (IHF); response 50-15,000 Hz at  $\pm$ 0.5 dB; 30 dB stereo separation at 10,000 Hz; 1.5 dB capture ratio; 0.35% total HD distortion; 70 dB S/N ratio; 0.7 V output; stereo indicator light; signal strength meter; center-of-carrier meter; inter-



station muting; 5<sup>3</sup>/<sub>4</sub>" H x 15<sup>3</sup>/<sub>4</sub>" W x 12<sup>1</sup>/<sub>4</sub>" D; walnut cabinet extra; \$399.50.

#### ST-5100

AM-Stereo FM; solid-state; sensitivity 2.6  $\mu$ V (IHF); response 20-15,000 Hz at  $\pm$ 0.5 dB; 30 dB



stereo separation at 10,000 Hz; 1.5 dB capture ratio; 0.5% total HD distortion; 70 dB S/N ratio; stereo indicator light; signal strength meter; center-of-carrier meter; 5<sup>3</sup>/<sub>4</sub>" H x 16<sup>3</sup>/<sub>8</sub>" W x 13<sup>3</sup>/<sub>8</sub>" D; walnut cabinet extra; \$219.50.

#### ST-5600

AM-Stereo FM; solid state; sensitivity 3.0  $\mu$ V (IHF); response 20-15,000 Hz at  $\pm$ 1.0 dB; 30 dB



stereo separation at 10,000 Hz; 2.0 dB capture ratio; 0.7% total HD distortion; 65 dB S/N ratio; stereo indicator light; signal strength meter; inter-station muting; 4<sup>7</sup>/<sub>8</sub>" H x 16<sup>3</sup>/<sub>8</sub>" W x 10<sup>1</sup>/<sub>2</sub>" D; walnut cabinet extra; \$119.50.

### STANDARD RADIO CORP.

#### TU108U

AM-Stereo FM; solid-state; sensitivity 5.0  $\mu$ V (reference not stated); >36 dB stereo separa-



tion (reference not stated); 6.0 dB capture ratio; <0.5% HD distortion; >65 dB S/N ratio; stereo indicator light; signal strength meter; AM sensitivity 200  $\mu$ V; 3<sup>3</sup>/<sub>16</sub>" H x 13<sup>3</sup>/<sub>8</sub>" W x 7<sup>7</sup>/<sub>8</sub>" D; walnut cabinet; \$74.95.

### TEAC CORP. OF AMERICA

#### AT-201

AM-Stereo FM; solid-state; sensitivity 1.8  $\mu$ V (IHF); response 20-15,000 Hz at  $\pm$ 0.5 dB; >40



dB stereo separation at 400 Hz; <1.0 dB capture ratio; <0.3% HD distortion; >7.0 dB S/N ratio; >60 dB pilot suppression; 1.1 V output; stereo indicator light; signal strength meter; center-of-carrier meter; inter-station muting; AM sensitivity 100  $\mu$ V with bar antenna; 6" H x 16<sup>1</sup>/<sub>2</sub>" W x 12<sup>3</sup>/<sub>4</sub>" D; \$349.50.

### YAMAHA INTERNATIONAL CORP.

#### CT-700

AM-Stereo FM; solid-state; sensitivity 1.7  $\mu$ V (IHF); 40 dB stereo separation (reference not stated); 1.5 dB capture ratio; 0.5% HD distortion; 70 dB S/N ratio; AM sensitivity 1.5  $\mu$ V (IHF); 5<sup>1</sup>/<sub>2</sub>" H x 15<sup>3</sup>/<sub>4</sub>" W x 11<sup>3</sup>/<sub>4</sub>" D.

CIRCLE NO. 34 ON READER SERVICE CARD →

# 8

# Stereo Systems

## Compacts, Portables

THE "compact" stereo system represents a nearly complete integration of components, designed to be compatible electrically and physically. Instead of the inefficient use of space by a stereo tuner and amplifier in its cabinet, with a record changer or cassette player on a separate base, the two (or more) are combined into a single unit only slightly larger than the record changer alone.

Stereo compacts were made possible by the development of solid-state circuits which could be modularized and mounted so as to fill unused spaces around the record changer or cassette deck mechanism. Since transistors generate little heat, the components can be placed close together, with a minimum of ventilation required. Operating controls are usually on the front of the base, although in some models they are on top.

Just as a receiver is simpler to install than separate units with their many interconnecting cables, the compact goes one step further by having its record changer built-in, with the phono cartridge internally wired to the amplifier input. Setting up a record changer and mounting a cartridge can be difficult for a neophyte; compact systems come from the manufacturer in a "ready-to-play" condition.

Ordinarily, connecting speakers to amplifier output terminals requires care to avoid short circuits and observance of correct polarity to insure in-phase operation. The speakers supplied with compact systems are fitted with phono jacks, as are the amplifier outputs. Plugging in the cables supplied automatically provides a safe, correctly phased speaker hook-up.

Most compact systems are relatively low powered (from 8 to 20 watts per channel), but their power ratings are rarely included in manufacturers' specifications. There is no need for the user to be concerned with the selection of a suitable speaker, since the manufacturer has provided speakers whose efficiency and frequency response are matched to the amplifier.

Since compact systems were not intended to compete with elab-

orate, powerful stereo component systems, speaker units are usually quite small and of modest performance. However, some manufacturers offer the same basic receiver/record-changer unit with a choice of several types of speaker systems. With the larger and costlier speaker options, many of the better compacts are equivalent in performance to good component systems. A few compacts, using unusually small speaker systems, have a "contoured" frequency response in their amplifiers to compensate for the speaker's characteristics. Although these systems frequently produce amazingly good sound, they cannot be expected to match the quality of a more expensive unit with larger speakers. Furthermore, since the amplifier frequency response is tailored to its own speakers, other types of speaker systems cannot be used with this type of compact.

A few full-size stereo receivers are designed to be converted to "compacts" by replacing the cabinet top with a mounting board and record changer. These receivers, with the addition of a pair of suitable speakers, form the basis of a very powerful, high-quality compact system.

The record player and phono cartridge supplied with a compact system have been selected to complement the quality of the speakers. Most compacts use low-priced changers, with more rumble than higher-priced record players. Normally, the relatively small speakers used in such systems will not reproduce rumble frequencies. Higher-priced compacts with wider-range speakers, often have high-quality record changers suitable for use with almost any speaker system.

Phono cartridge characteristics are determined by the record-changer requirements. Low-priced models use a cartridge tracking at 3 to 4 grams; better record players use high-compliance cartridges operating at 1 to 2 grams.

As with components, performance of a compact system is roughly related to its price. However, the buyer is assured of a compatible design, installation problems are virtually non-existent, and cost is somewhat less than an equivalent component system. JULIAN D. HIRSCH

### AIWA

(Milovac International Co., Inc.)

#### Model TPR-2001

Combines AM-Stereo FM receiver; cassette tape record/playback unit; 20 W/channel continuous sine-wave power amp; main/remote speaker switch; (with pair speaker systems, each with 6" dual-cone speaker \$249.95); walnut cabinet; \$199.95

### ALTEC LANSING

#### Model 912A

Combines 3-speed Garrard SL95B automatic turntable with Shure M93E mag. cartridge; 0.4 x .7 mil elliptical diamond stylus; AM-Stereo

FM receiver section (their Model 714A); Starr cassette recorder/playback; recorder response 50-10,000 Hz; control center 2 1/2" x 6 7/8" x 19 1/2" D; has mike input; (Model 911A without cassette recorder \$499.00); walnut; \$650.00

### AMPEX CORP.

#### Model MX1000

Combines 3-speed automatic turntable with Shure mag. cartridge; diamond stylus; 12 1/2 W/channel dynamic power amp at 8 ohms with 5% THD; AM-FM tuner section; response 40-12,000 Hz; cassette record/playback section; pair speaker systems; 14 3/8" x 12" x 9 3/8" D each with 6" x 9" speaker; supplied with 2 mikes; control center 14 3/8" x 9 1/4" x 31 3/4" D; oiled walnut finish; \$489.95

### BENJAMIN

#### Model 1036

Combines 4-speed Benjamin/Miracord 620C automatic turntable with Elac 244-17 mag. cartridge; 0.7 mil diamond stylus; 22 1/2 W/channel dynamic power; AM-FM tuner section with 1.6 μV FM sensitivity for 20 dB quieting; pair of 2-way air-suspension speaker systems; power bandwidth 25-30,000 Hz; response 10-100,000 Hz ±1 dB; speaker cabinets 20" x

11" x 9" D; 8" woofer & 3 1/2" tweeter; control center 9 7/8" x 16 7/8" x 16 7/8" D; dust cover optional; \$379.50

#### Model 1046

Combines Benjamin/Miracord 50B automatic turntable with Elac 244-17 mag. cartridge; 0.7 mil diamond stylus; 30 W/channel dynamic power amp; AM-FM tuner section with 1.6 μV FM sensitivity for 20 dB quieting; pair of 3-way speaker systems; power bandwidth 25-30,000 Hz; response 10-100,000 Hz ±1 dB; speaker cabinets 23" x 12 1/2" x 9 3/4"; 10" woofer, 5" mid-range & 3 1/2" tweeter; control center 9 7/8" x 18 1/4" x 17" D; dust cover optional; \$469.50

#### Model 2032

Combines 4-speed BSR C117 automatic turntable with Shure M71MC mag. cartridge; 0.6 mil diamond stylus; 16 W/channel dynamic power amp; AM-FM tuner section with 1.6 μV FM sensitivity for 20 dB quieting; pair Benjamin speaker systems; power bandwidth 25-30,000 Hz; response 10-100,000 Hz ±1 dB; speaker cabinets 20" x 10" x 7" D; 8" woofer & 2 1/2" tweeter; control center 9 7/8" x 16 7/8" x 16 7/8" D; dust cover optional; \$299.50

#### Model 1031

Combines Miracord 620C automatic turntable with Elac 244-17 mag. cartridge; diamond



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## Stereo Systems



stylus; 16 W/channel dynamic power amplifier; AM-FM tuner section with 1.6  $\mu$ V FM sensitivity for 20 dB quieting; pair of EMI speaker systems; power bandwidth 25-30,000 Hz; response 10-100,000 Hz  $\pm$ 1 dB; speaker cabinets 16 $\frac{1}{4}$ "  $\times$  11 $\frac{1}{8}$ "  $\times$  8 $\frac{1}{4}$ " D; 8" woofer & 3 $\frac{3}{8}$ " tweeter; control center 9 $\frac{7}{8}$ "  $\times$  16 $\frac{5}{8}$ "  $\times$  16 $\frac{7}{8}$ " D; dust cover optional; \$329.50

### Model 2036

Combines 4-speed BSR C117-4 automatic turntable with Shure M71MC mag. cartridge; 0.6 mil



diamond stylus; slot-loading cassette tape recorder; 16 W/channel dynamic power amplifier; AM-FM tuner section with 1.6  $\mu$ V FM sensitivity for 20 dB quieting; pair of 2-way speaker systems; power bandwidth 25-30,000 Hz; response 10-100,000 Hz; speaker cabinets 16 $\frac{1}{4}$ "  $\times$  11 $\frac{1}{8}$ "  $\times$  8 $\frac{3}{8}$ " D; 8" woofer & 3 $\frac{3}{8}$ " tweeter; control center 9 $\frac{7}{8}$ "  $\times$  20 $\frac{3}{8}$ "  $\times$  16 $\frac{7}{8}$ " D; dust cover (DCP-6) optional; \$449.50

### BOGEN DIV.

(Lear Siegler, Inc.)

### Model BC360

Combines automatic turntable with Pickering mag. cartridge; diamond stylus; 45 W/channel



continuous sine-wave into 4 ohms power amp; AM-Stereo FM tuner; "Crescendo" control expander-compressor; less speakers; \$379.95

### BSR McDONALD

(BSR-USA-Ltd.)

### Model RTS-40

Combines BSR 310/X automatic turntable with mag. cartridge; diamond stylus; AM-Stereo



FM receiver; pair of SS-2 speaker systems; (without speakers \$259.95); \$329.95

### CLARICON

### Model 34-200

Combines automatic turntable with mag. cartridge; diamond stylus; 30 W/channel dynamic



power amp; AM-Stereo FM tuner; 8-track cartridge player; pair of two-way air-suspension speaker systems; 8" woofer & tweeter with horn dispersion system; speaker cabinets 15"  $\times$  10"  $\times$  7" D; control center 21"  $\times$  16"  $\times$  8 $\frac{1}{2}$ " D; oiled walnut finish; dust cover; \$229.95

### ELECTROHOME LTD.

### Model SC407-1210

Combines 3-speed Dual 1210 automatic turntable with mag. cartridge; diamond stylus;



10 W/channel continuous sine-wave power amp into 8 ohms at 1% HD with both channels driven; 18 W/channel dynamic power at 8 ohms with both channels driven; response 30-50,000 Hz  $\pm$ 3 dB; AM-Stereo FM tuner section 2.5  $\mu$ V FM sensitivity for 30 dB quieting; varactor FM tuner; main/remote speaker switch; without speakers; \$349.50

### Model SC412-1215

Same as Model SC407-1210 except 20 W/channel continuous sine-wave; 30 W/channel dynamic power; Dual 1215 automatic turntable; four touch-tuning pre-selector; \$429.50

### ELECTRO-VOICE, INC.

### Model Landmark 100

Combines 4-speed Garrard automatic turntable with E-V Stereo-V mag. cartridge; diamond

stylus; 20 W/channel continuous sine-wave at 0.15% THD with both channels driven. 40 W/channel dynamic power; power bandwidth 20-25,000 Hz; response 20-25,000 Hz  $\pm$ 1.5 dB; AM-Stereo FM tuner section with 1.9  $\mu$ V FM sensitivity for 30 dB quieting; capture ratio 2.5 dB (HF); speaker cabinets 10"  $\times$  10"  $\times$  10" with full-range speaker facing forward & two full-range speakers with tweeter at asymmetrical angles at back of cabinet radiating sound



for wall reflection; integrated system in that speakers provide servo-linear motional feedback into main amplifier; 16 $\frac{1}{8}$ "  $\times$  8 $\frac{1}{2}$ "  $\times$  16 $\frac{1}{4}$ " D; dust cover \$14.95; \$399.95

### FISHER RADIO

### Model 3055

Combines 4-speed automatic turntable with mag. cartridge; diamond stylus; 50 W/channel dynamic power amp with 5% THD at 8 ohms with both channels driven; AM-FM tuner section; pair of Fisher XP-55B two-way speaker systems; 20"  $\times$  10"  $\times$  7 $\frac{1}{2}$ " D; each with 8" woofer & 3" tweeter; with dust cover; oiled walnut cabinet; \$329.95

### Model 3560K

Combines 4-speed automatic turntable with mag. cartridge; diamond stylus; 50 W/channel



dynamic power amp with 5% THD at 8 ohms; AM-FM tuner section; pair of Fisher XP-60K speaker systems; 13"  $\times$  23"  $\times$  10" D each with 10" woofer & 3" tweeter; control center 17 $\frac{1}{2}$ "  $\times$  8 $\frac{1}{4}$ "  $\times$  16" D; dust cover \$19.95; oiled walnut cabinet; \$399.95

### Model 3570

Combines 4-speed automatic turntable with mag. cartridge; diamond stylus; 50 W/channel dynamic power amp with 5% THD at 8 ohms;





AM-FM tuner section; pair of Fisher WS-70 omnidirectional speaker systems; 15½" × 16½" × 9½" D each with 6" woofer & 3" tweeter; control center 17½" × 8¼" × 16" D; oiled walnut cabinet; \$349.95

**Model 3580**

Combines 4-speed automatic turntable with mag. cartridge; diamond stylus; 50 W/channel



dynamic power amp with 5% THD at 8 ohms; AM-FM tuner section; pair of Fisher WS-80 three-way omnidirectional speaker systems; 18" × 18¾" × 11" D each with 8" woofer, 5¾" mid-range and 3" wide-dispersion tweeter; control center 17½" × 8¼" × 16" D; dust cover \$19.95; oiled walnut cabinet; \$399.95

**Model 5055**

Combines automatic turntable with mag. cartridge; diamond stylus; 45 W/channel dynamic



power amp with 5% THD at 8 ohms; AM-FM tuner section; pair of Fisher XP-55B two-way speaker systems; stereo cassette deck with dual meters & controls; 2 mikes; 10" × 20" × 7½" D each with 8" woofer & 3" tweeter; control center 23¾" × 8" × 16" D; dust cover \$19.95; oiled walnut cabinet; \$499.95

**Model 3044**

Combines 4-speed automatic turntable with mag. cartridge; diamond stylus; 50 W/channel dynamic power amp with 5% THD at 8 ohms; AM-FM tuner section; pair of Fisher XP-44B two-way speaker systems; 15¼" × 8¼" × 6¼" D each with 6" woofer & 3" tweeter; control center 17½" × 8¼" × 16" D; dust cover \$19.95; oiled walnut finish; \$299.95

**Model 3556**

Combines 4-speed automatic turntable with mag. cartridge; diamond stylus; 45 W/channel dynamic power amp with 5% THD at 8 ohms; AM-FM tuner section; pair of Fisher XP-56 two-way speaker systems; 11" × 21" × 9" D each with 8" woofer & 3" tweeter; control center 8¼" × 17½" × 16" D; dust cover \$19.95; oiled walnut finish; \$349.95

**GENERAL ELECTRIC CO.**

**Model C771**

Combines 4-speed automatic turntable with ceramic cartridge; diamond stylus; 20 W/channel dynamic power amp at 5% THD; AM-FM tuner section; 8-track tape player; pair 3-way

1972 EDITION



speaker systems; 17" × 13" × 16" D each with 10" woofer, 3" tweeter, 2 kHz exponential horn; molded plywood with special stand to house components; white lacquer finish; hinged dust cover; main/remote speaker switch; control center 28" × 14" × 16" D; \$529.95

**Model P794**

Combines 4-speed record changer with ceramic cartridge; diamond stylus; 12½ W/channel continuous sine-wave into 8-ohm power amp at 5% THD; 20 W/channel at 5% THD dynamic power; AM-FM tuner section; FM sensitivity 5 µV; frequency response 20-20,000 Hz ±3 dB at 8 ohms; pair air-suspension sealed speaker systems; 19¾" × 13" × 9½" D each with 8" woofer & 3½" tweeter; control center 19½" × 10" × 14¾" D; with dust cover; oiled walnut finish; \$329.95

**HEATH COMPANY**

**Model AD-27**

Combines 4-speed BSR McDonald "500" automatic turntable with Shure M44MB mag.



cartridge; diamond stylus; 15 W/channel dynamic power amp; response 12-60,000 Hz ±1 dB at 1% HD; AM-FM tuner with 5 µV sensitivity for 30 dB quieting; oiled walnut cabinet with tambour doors; 12¾" × 14¾" × 7¾" D; less speakers; (kit) \$169.95

**Model AD-17**

Combines 4-speed BSR McDonald "400" automatic turntable with Shure mag. cartridge; 0.7



mil diamond stylus; 10 W/channel continuous sine-wave power at 1% THD; 15 W/channel dynamic power; response 12-16,000 Hz ±1 dB at 1 W; power bandwidth 5-90,000 Hz; control center 21¾" × 8¼" × 14½" D; oiled walnut cabinet; less speakers; (kit) \$109.95

**HITACHI SALES CORP.**

**Model DPK-310**

Combines BSR CI-17 automatic turntable with mag. cartridge; diamond stylus; 15 W/channel

dynamic power amp. at 8 ohms with 5% THD; AM-FM tuner section; pair of speaker systems; 9½" × 14½" × 7½" D; control center 14" ×



8½" × 16" D; with dust cover; oiled walnut cabinet; \$229.95

**Model KS-3200**

Combines 4-speed Garrard automatic turntable with mag. cartridge; diamond stylus; 15 W/



channel dynamic power amp. at 8 ohms with 5% THD; AM-FM tuner section; pair of speaker systems; \$349.95

**Model DPK-321**

Combines BSR CI-17 automatic turntable with Pickering V-15/AC-2 mag. cartridge; diamond



stylus; 22 W/channel dynamic power amp. at 8 ohms; response 20-30,000 Hz; AM-FM tuner section; 2.5 µV FM sensitivity for 20 dB quieting; pair of speaker systems; 12" × 20¾" × 10" D each with 8" woofer & exponential horn tweeter; control center 20" × 10" × 16½" D; \$379.95

**Model KS-2460**

Combines 4-speed BSR automatic turntable with mag. cartridge; diamond stylus; 15 W/channel dynamic power amp. at 8 ohms with 5% THD; AM-FM tuner section; pair of two-way speaker systems; slide-type controls for balance, bass & treble; hinged dust cover; \$249.95

**Model KS-2300**

Combines 4-speed mini record changer; 9 W/channel dynamic power amp at 8 ohms with 5% THD; AM-FM tuner section; pair of speaker systems each with 6¼" speaker; \$189.95

**JVC AMERICA, INC.**

(Subs. of Victor Co. of Japan, Ltd.)

**Model 4400**

Combines 4-speed automatic turntable with mag. cartridge; diamond stylus; 12 W/channel continuous sine-wave power amp. into 8 ohms; dynamic power 15 W/channel into 8 ohms;

# 8

## Stereo Systems

AM-FM tuner section; pair of speaker systems; 16" x 9 1/4" x 7 1/2" D each with 6 1/2" woofer & 2" tweeter; control center 17 1/2" x 7 7/8" x 17 3/4" D. \$249.95

### Model 4450

Combines 4-speed automatic turntable with mag. cartridge; diamond stylus; 17 W/channel



continuous sine-wave power amp. into 8 ohms; dynamic power 20 W/channel into 8 ohms; AM-FM tuner section; pair of speaker systems; 18 1/2" x 10 1/2" x 8 1/2" D each with 8" woofer & 2" tweeter; five-zone tone-control system with ±12 dB range; control center 19 3/4" x 7 7/8" x 17 3/4" D; dust cover; \$299.95

### KENWOOD ELECTRONICS, INC.

### Model KS-505P

Combines 3-speed Perpetuum-Ebner PE2010 automatic turntable with Pickering V-15/AT-3



mag. cartridge; diamond stylus, Dustamatic brush; 16 W/channel continuous sine-wave into 8 ohms at 0.8% THD; 20 W/channel into 4 ohms; 20 W/channel dynamic power at 8 ohms; 24 W/channel at 4 ohms; power bandwidth 20-20,000 Hz; response 20-30,000 Hz ±2 dB; AM-Stereo FM tuner section with 2.5 μV FM sensitivity; capture ratio 4 dB (IHF); main/remote speaker facilities; control center 17 1/2" x 8" x 18" D; without speakers; oiled walnut cabinet; \$249.95

### Model KS-606P

Same as KS-505P except more power; combines 3-speed Perpetuum-Ebner PE2034 automatic turntable with Pickering V-15/AT-3 mag. cartridge; diamond stylus; Dustamatic brush; 17 W/channel continuous sine-wave into 8 ohms with both channels driven at 0.5% THD; 26 W/channel dynamic power at 8 ohms; 35 W/channel into 4 ohms; power bandwidth 20-30,000 Hz; response 15-50,000 Hz ±1.5 dB; AM-Stereo FM tuner section with 2.5 μV FM



sensitivity for 30 dB quieting; main/remote speaker switch; control center 17 1/4" x 8" x 18" D; without speakers; walnut cab., \$299.95

### Model KS-707P

Combines 3-speed Perpetuum-Ebner PE2034 automatic turntable with Pickering V-15/AT-3



mag. cartridge; diamond stylus; Dustamatic brush; 35 W/channel continuous sine-wave into 8 ohms with both channels driven at 0.5% THD; 57 W/channel dynamic power at 8 ohms; 75 W/channel into 4 ohms; power bandwidth 18-30,000 Hz; response 13-70,000 Hz ±1.5 dB; AM-Stereo FM tuner section with 1.8 μV FM sensitivity for 30 dB quieting; capture ratio 2.5 dB (IHF); main/remote speaker switch; control center 17 1/4" x 8" x 18" D; without speakers; oiled walnut cabinet; \$349.95

### KLH RESEARCH & DEVELOPMENT CORP.

### Model Thirty-Five

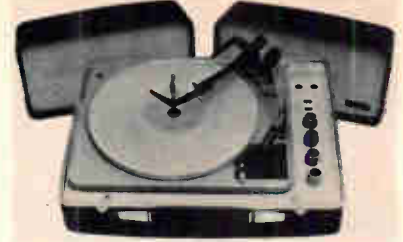
Combines 3-speed Dual automatic turntable with Pickering XV-15/350 mag. cartridge with



diamond stylus; 20 W/channel continuous sine-wave (into 8 ohms) power amp, both channels driven; AM-FM tuner section; pair of KLH speaker systems; features tape monitoring & recording facilities; outputs for remote & main speakers; speaker cabinets 23 1/2" x 12 3/8" x 11 7/8" D; 12" acoustic-suspension woofer; 1 3/4" direct-radiator tweeter; 1500 Hz LCR crossover; control center 9" x 20 1/2" x 14 3/8" D; oiled walnut finish; \$549.95

### Model Eleven

Combines 4-speed Garrard automatic turntable with Pickering V-15 mag. cartridge; diamond stylus; stereo amplifier; pair KLH sealed speak-



er systems with 3" full-range speakers; portable design with vinyl-clad "Contourlite" finish; \$199.95

### Model Eleven-W

Same as Model Eleven except cabinet version; 8 3/8" x 15" x 4" D; control center 8 3/8" x 18" x 14" D; oiled walnut finish; \$209.95

### Model Twenty-Six

Combines 3-speed Garrard automatic turntable with Pickering V-15/AT-3 mag. cartridge; dia-



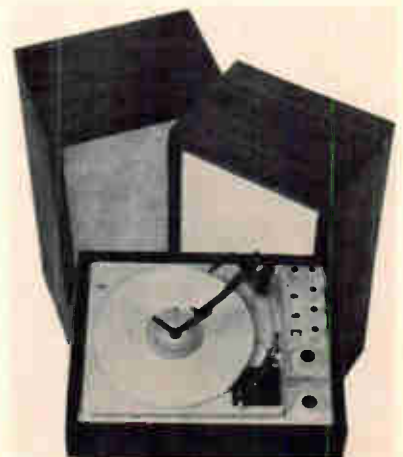
mond stylus; 12 1/2 W/channel dynamic power amp; pair KLH speaker systems each with 8" acoustic-suspension woofer & 2" direct-radiator tweeter; 18" x 10 1/4" x 7 1/4" D; control center 18" x 8 3/8" x 14 1/8" D; inputs for phono, tuner & tape; oiled walnut finish; \$269.95

### Model Twenty-Four

Combines 3-speed KLH automatic turntable with Pickering V-15 mag. cartridge; Stereo FM tuner; 17 1/2 W/channel dynamic power amplifier; pair KLH speaker systems each with 8" acoustic-suspension woofer & 2" tweeter; 18" x 10 1/4" x 7 1/2" D; control center 18" x 8 3/8" x 14" D; inputs for phono, aux. & tuner; (with AM-Stereo FM tuner \$349.95); \$319.95

### Model Twenty

Combines KLH automatic turntable with Pickering mag. cartridge; diamond stylus; 25 W/channel



nel dynamic power amplifier; Stereo FM tuner; pair KLH speaker systems each with 10" acoustic-suspension woofer, 1 3/4" direct-radiator tweeter & LCR crossover; 23 1/8" x 11 1/4" x 9" D;

zero-center tuning meter; control center 8 $\frac{3}{8}$ " x 18 $\frac{1}{4}$ " x 14" D; (with AM-Stereo FM tuner \$429.95); oiled walnut finish; \$399.95

## LAFAYETTE RADIO

### Model LRC-70

Combines 4-speed Garrard 40B automatic turntable with Pickering V-15/AC-3 mag. car-



tridge; diamond stylus; dynamic power 20 W/channel at 4 ohms; amp. response 20-20,000 Hz  $\pm$ 1.5 dB; AM-FM tuner section with 2.5  $\mu$ V FM sensitivity for 30 dB quieting; mike input; tape monitor; main/remote speaker switches; p.a. amp. capability; control center 17" x 9" x 16 $\frac{1}{8}$ " D; (with two Lafayette "Criterion 50A" speaker systems \$299.85); without dust cover; \$259.95

### Model LSC-6000

Combines 4-speed BSR automatic turntable with ceramic turnover cartridge; diamond stylus; stereo amplifier; AM-Stereo FM tuner section; pair of two-way air-suspension speaker systems; 8-track cartridge player; speaker cabinet 15 $\frac{3}{4}$ " x 11" x 6 $\frac{1}{2}$ " D each with 8" woofer, 2" tweeter & multi-cellular-type duct; slide controls for bass, treble and balance; control center 17 $\frac{1}{2}$ " x 9" x 14 $\frac{3}{4}$ " D; dust cover; walnut finish; \$179.95

### Model LSC-8000B

Combines 4-speed Garrard 2025 automatic turntable with ceramic turnover cartridge; diamond stylus; 50 W/channel dynamic power amp.; AM-Stereo FM tuner; pair of 3-way air-suspension speaker systems; 8-track cartridge player; speaker cabinet 14 $\frac{7}{8}$ " x 11 $\frac{1}{4}$ " x 6 $\frac{3}{4}$ " D each with 6 $\frac{1}{2}$ " woofer, two 3 $\frac{1}{2}$ " tweeters; slide-type controls for balance, volume, bass & treble; mike input; control center 23 $\frac{1}{2}$ " x 9 $\frac{1}{4}$ " x 15" D; walnut vinyl cabinet includes a dust cover; \$229.95

## MOTOROLA, INC.

### Model FH220-HW

Combines 4-speed automatic record changer with ceramic cartridge; diamond stylus; 30 W/channel dynamic power at 5% THD; response 20-20,000 Hz; AM-Stereo FM tuner section with 10  $\mu$ V FM sensitivity for 20 dB quieting; pair of sealed speaker systems; 10" x 13 $\frac{1}{4}$ " x 8 $\frac{3}{8}$ " D each with 8" woofer & 3 $\frac{1}{2}$ " tweeter; control center 16 $\frac{1}{2}$ " x 9 $\frac{1}{4}$ " x 17 $\frac{5}{8}$ " D; with dust cover; \$229.95

## PACKARD BELL

### Model RPS-02

Combines 4-speed Garrard automatic turntable with ceramic cartridge; diamond stylus; 25 W/channel dynamic power at 8 ohms at 5% THD; AM-Stereo FM tuner; pair of speaker sys-



1972 EDITION

tems; 13 $\frac{1}{2}$ " x 22 $\frac{3}{4}$ " x 12 $\frac{1}{2}$ " D each with 10" woofer & 3 $\frac{1}{2}$ " tweeter; control center 18 $\frac{1}{4}$ " x 10" x 18 $\frac{3}{4}$ " D; dust cover; \$279.95

## PANASONIC

(Matsushita Electric Corp. of America)

### Model SC-8600

Combines 4-speed Garrard automatic turntable with Pickering V-15 mag. cartridge; diamond stylus; 14 W/channel dynamic power into 8 ohms at 1% THD; power bandwidth 20-25,000 Hz; response 30-40,000 Hz  $\pm$ 3 dB; AM-Stereo FM tuner section with 2.8  $\mu$ V FM sensitivity for 30 dB quieting; pair of two-way air-suspension speaker systems; speaker cabinet 19 $\frac{1}{2}$ " x 12 $\frac{1}{4}$ " x 7 $\frac{3}{4}$ " D each with 8" woofer & 2" tweeter; main/



remote speaker selection; control center 17 $\frac{3}{4}$ " x 9 $\frac{3}{8}$ " x 20 $\frac{3}{8}$ " D; oiled walnut cabinet; dust cover; \$349.95

### Model SC-777

Combines 4-speed Garrard automatic turntable with Pickering V-15 mag. cartridge; diamond stylus; 15 W/channel dynamic power into 8 ohms at 1% THD; AM-Stereo FM tuner section with 2.8  $\mu$ V FM sensitivity for 30 dB quieting; pair of two-way air-suspension speaker systems; cassette record/playback section; speaker cabinet 15 $\frac{3}{8}$ " x 9 $\frac{3}{4}$ " x 8 $\frac{1}{4}$ " D each with 6 $\frac{1}{2}$ " woofer & 2 $\frac{1}{2}$ " tweeter; control center 9 $\frac{3}{4}$ " x 18 $\frac{7}{8}$ " x 19" D; oiled walnut cabinet; dust cover; \$429.95

### Model SC-555A

Combines 4-speed BSR automatic turntable with ceramic cartridge; diamond stylus; 15 W/channel dynamic power at 8 ohms at 1% THD; AM-Stereo FM tuner section with 2.9  $\mu$ V FM sensitivity for 30 dB quieting; capture ratio 2.5 dB (IHF); pair of two-way air-suspension speaker systems; speaker cabinet 15 $\frac{3}{8}$ " x 9 $\frac{3}{4}$ " x 8 $\frac{1}{4}$ " D each with 6 $\frac{1}{2}$ " woofer & 2 $\frac{1}{2}$ " tweeter; control center 8 $\frac{7}{8}$ " x 17 $\frac{7}{8}$ " x 15 $\frac{1}{8}$ " D; oiled walnut cabinet; dust cover; \$299.95

## PILOT RADIO-TELEVISION CORP.

### Model PMP-2000

Combines 4-speed BSR automatic turntable with Shure M71B mag. cartridge; diamond stylus; 10 W/channel continuous sine-wave into 8 ohms with 0.7% THD; dynamic power 18 W/channel at 8 ohms; power bandwidth 40-18,000 Hz; AM-Stereo FM tuner with 3  $\mu$ V FM sensitivity for 30 dB quieting; capture ratio 3.5 dB (IHF); pair of speaker systems; speaker cabinet 10" x 11 $\frac{1}{4}$ " x 14 $\frac{3}{4}$ " D each with 8" woofer & 3" tweeter; control center 10" x 17 $\frac{1}{4}$ " x 14 $\frac{3}{4}$ " D; oiled walnut cabinet; supplied with hinged dust cover; \$349.95

## H. H. SCOTT, INC.

### Model 2516

Combines Garrard automatic turntable with Pickering mag. cartridge; diamond stylus; 20



W/channel dynamic power into 4 ohms at 0.8% THD; power bandwidth 20-20,000 Hz; response 18-25,000 Hz  $\pm$ 1 dB; AM-Stereo FM tuner section with 2  $\mu$ V FM sensitivity for 30 dB quieting; pair of Scott speaker systems; inputs for mike/guitar (for mixing, aux. & tape recorders); oiled walnut finish; with S-17 speakers \$359.95; with S-10 speakers \$399.95; with S-15 speakers \$449.95

### Model 2506

Combines Garrard automatic turntable with Pickering mag. cartridge; diamond stylus; 25



W/channel dynamic power into 4 ohms at 0.8% THD; power bandwidth 20-20,000 Hz; response 18-25,000 Hz  $\pm$ 1 dB; AM-Stereo FM tuner section with 2  $\mu$ V FM sensitivity for 30 dB quieting; pair of Scott speaker systems; oiled walnut finish; with S-17 speakers \$399.95; with S-10 speakers \$429.95; with S-15 speakers \$489.95; with Q-100 speakers \$549.95

## SEARS, ROEBUCK & CO.

### Model 7424 "Virtuoso II"

Combines 4-speed automatic turntable with mag. cartridge; diamond stylus; 50 W/channel



dynamic power into 8 ohms at 5% THD; response 20-25,000 Hz; AM-Stereo FM tuner section with 3.5  $\mu$ V sensitivity for 30 dB quieting; connection for remote control; main/remote speaker capability; automatic (motorized) station locator; less speakers; 20 $\frac{1}{4}$ " x 4 $\frac{5}{8}$ " x 19" D (8" high with automatic spindle); high-impact plastic cabinet with oiled walnut veneer overlay; \$299.95

## SHERWOOD ELECTRONIC LABS., INC.

### Model S-4100

Combines 4-speed BSR automatic turntable with Shure mag. cartridge; 0.6 mil diamond stylus; 25 W/channel continuous sine-wave into 8 ohms power amp; 30 W/channel into 4 ohms at 1% THD; dynamic power 35 W/channel into 8 ohms; 40 W/channel into 4 ohms; HD 0.2% at 10 W; response 30-20,000 Hz  $\pm$ 2 dB;



AM-Stereo FM tuner section with 1.9  $\mu$ V FM sensitivity for 30 dB quieting; capture ratio 2.8 dB (HF); main/remote speaker facilities; less speakers; \$279.95

## SONY CORPORATION OF AMERICA

### Model HP-215

Combines 4-speed BSR automatic turntable with Sony VX-18P mag. cartridge; diamond stylus; 18 W/channel dynamic power into 8 ohms at 5% THD; response 20-40,000 Hz  $\pm$ 3 dB at 1 W output; pair of Sony SS-210 2-way speaker systems; speaker cabinet 15" x 9 $\frac{1}{4}$ " x 8 $\frac{3}{8}$ " D each with 6 $\frac{1}{2}$ " woofer & 2" tweeter; main/remote speaker switch; control center 16 $\frac{3}{8}$ " x 9 $\frac{1}{2}$ " x 16 $\frac{1}{8}$ " D; dust cover; \$179.95

### Model HP-218

Combines 4-speed BSR automatic turntable with mag. cartridge; diamond stylus; 18 W/channel dynamic power into 8 ohms at 5% THD; response 20-40,000 Hz  $\pm$ 3 dB at 1 W output; AM-Stereo FM tuner section with 2.5  $\mu$ V FM sensitivity for 30 dB quieting; pair of Sony SS-210 2-way speaker systems; 8-track cartridge player; speaker cabinet 15" x 9 $\frac{1}{4}$ " x 8 $\frac{3}{8}$ " D each with 6 $\frac{1}{2}$ " woofer & 2" tweeter; main/remote speaker switch; storage space for 8-track cartridges; control center 23 $\frac{1}{8}$ " x 9 $\frac{1}{8}$ " x 17 $\frac{1}{4}$ " D; dust cover; \$299.95

### Model HP-219

Combines 4-speed BSR automatic turntable with mag. cartridge; diamond stylus; 18 W/



channel dynamic power into 8 ohms at 5% THD; response 40-40,000 Hz  $\pm$ 3 dB at 1 W output; AM-Stereo FM tuner section with 2.5  $\mu$ V FM sensitivity for 30 dB quieting; pair of Sony SS-210 2-way speaker systems; slot-loading cassette recorder/playback section with mike input; speaker cabinet 15" x 9 $\frac{1}{4}$ " x 8 $\frac{3}{8}$ " D each with 6 $\frac{1}{2}$ " woofer & 2" tweeter; storage for cassette cartridges; control center 23 $\frac{1}{8}$ " x 9 $\frac{1}{8}$ " x 17 $\frac{1}{4}$ " D; dust cover; \$319.95

### Model HP-610

Combines Dual automatic turntable with Pickering micro-magnetic cartridge; 0.7 mil diamond stylus; Dustomatic brush; 20 W/channel continuous sine-wave into 8 ohms with both channels driven; 33 W/channel dynamic power into 8 ohms at 5% THD; response 30-50,000 Hz  $\pm$ 3 dB at 1 W output; AM-Stereo FM tuner section with 2.5  $\mu$ V FM sensitivity for 30 dB quieting; pair of Sony Model SS-610 3-way speaker systems; speaker cabinet 17 $\frac{1}{2}$ " x 19 $\frac{1}{4}$ " x 9 $\frac{1}{2}$ " D each with 8" woofer, 4" mid-range & 2" tweeter; main/remote speaker & tape monitoring switches; control center 20 $\frac{1}{4}$ " x 9 $\frac{1}{4}$ " x 17 $\frac{3}{8}$ " D; dust cover; \$399.95

### Model HP-465A

Combines 3-speed Garrard automatic turntable with Pickering V-15 mag. cartridge; 0.7 mil diamond stylus; Dustomatic brush; 10 W/channel continuous sine-wave into 8 ohms with both channels driven; 25 W/channel dynamic power into 8 ohms at 5% THD; response 25-40,000 Hz  $\pm$ 3 dB at 1 W output; pair of Sony SS-485 2-way speaker systems; speaker cabinet 11 $\frac{3}{8}$ " x 17 $\frac{3}{8}$ " x 8 $\frac{3}{8}$ " D each with 8" woofer & 2 $\frac{1}{2}$ " tweeter; main/remote speaker switch; control center 17 $\frac{1}{8}$ " x 9 $\frac{1}{4}$ " x 15 $\frac{1}{4}$ " D; dust cover; \$219.95

### Model HP-510

Combines 3-speed Dual automatic turntable with Pickering micro-magnetic cartridge; 0.7



mil diamond stylus; Dustomatic brush; 15 W/channel continuous sine-wave into 8 ohms with both channels driven; 26 W/channel dynamic power into 8 ohms at 5% THD; response 40-40,000 Hz  $\pm$ 3 dB at 1 W output; AM-Stereo FM tuner section with 2.5  $\mu$ V FM sensitivity for 30 dB quieting; pair of Sony SS-510 2-way speaker systems; speaker cabinet 17 $\frac{3}{8}$ " x 10 $\frac{3}{8}$ " x 9 $\frac{1}{2}$ " D each with 8" woofer & 2" tweeter; main/remote speaker & tape monitoring switches; control center 17 $\frac{1}{8}$ " x 9 $\frac{1}{2}$ " x 16 $\frac{3}{8}$ " D; dust cover; \$309.95

### Model HP-210

Combines 4-speed BSR automatic turntable with Sony VX-18P mag. cartridge; diamond stylus; 18 W/channel dynamic power into 8 ohms at 5% THD; response 40-40,000 Hz  $\pm$ 3 dB at 1 W output; AM-Stereo FM tuner section with 2.5  $\mu$ V FM sensitivity for 30 dB quieting; pair of Sony SS-210 2-way speaker systems; speaker cabinet 15" x 9 $\frac{1}{4}$ " x 8 $\frac{3}{8}$ " D each with 6 $\frac{1}{2}$ " woofer & 2" tweeter; main/remote speaker switch; control center 16 $\frac{3}{8}$ " x 9 $\frac{1}{2}$ " x 16 $\frac{1}{8}$ " D; dust cover; \$219.95

## SYLVANIA ELECTRIC PRODUCTS INC.

(Subs. General Telephone & Electronics)

### Model MST240W

Same as MS220WX but includes Sylvania



CT160 stereo cassette recorder/player; control center 23 $\frac{1}{8}$ " x 10 $\frac{1}{8}$ " x 18 $\frac{1}{2}$ " D; \$479.95

### Model MS220WX

Combines BSR McDonald 510 automatic turn-

table with Pickering mag. cartridge; diamond stylus; 15 W/channel continuous sine-wave; dynamic power 22 $\frac{1}{2}$  W/channel; power bandwidth 25-30,000 Hz; response at tape input 45-40,000 Hz; HD 0.5% at 1 W (rms); AM-Stereo FM tuner section with 2.4  $\mu$ V FM sensitivity; capture ratio 5.1 dB (HF); pair sealed air-suspension speaker systems; speaker cabinet 10 $\frac{3}{4}$ " x 18 $\frac{3}{4}$ " x 10 $\frac{1}{2}$ " D each with 8" woofer & dome tweeter; main/remote speaker switch; control center 17 $\frac{1}{2}$ " x 10" x 18 $\frac{1}{2}$ " D; dust cover; \$349.95

## WEBCOR

### Model WFX257

Combines 4-speed Garrard automatic turntable with mag. cartridge; diamond stylus; 10



W/channel continuous sine-wave amp at 5% HD; dynamic power 50 W/channel at 5% HD; response 20-20,000 Hz; AM-Stereo FM tuner section; pair of 3-way air-suspension speaker systems with 3-dimensional grilles; 8-track stereo player; each speaker with 6 $\frac{1}{2}$ " woofer, 2 $\frac{1}{4}$ " radiator-cone mid-range & 3" tweeter; main/remote speaker switch; storage compartment for 8-track cartridges; control center 22 $\frac{3}{4}$ " x 8 $\frac{1}{4}$ " x 16 $\frac{3}{4}$ " D; dust cover; \$199.95

## YAMAHA INTERNATIONAL CORP.

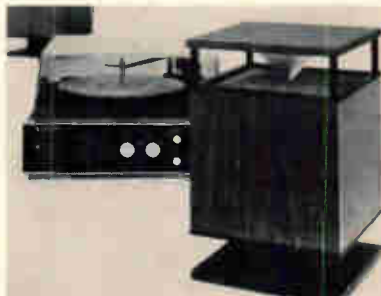
### Model MSC3E

Combines 3-speed Perpetuum-Ebner 2036 automatic turntable with Shure M75MB, Type 2 mag. cartridge; 0.6 mil diamond stylus; 22 W/channel continuous sine-wave into 8 ohm power amp; 30 W/channel dynamic power into 8 ohms; power bandwidth 10-30,000 Hz at 0.5% HD; HD 0.05% at rated output; input sensitivity mag. phono 3.5 mV; aux. 100 mV.

## ZENITH RADIO CORP.

### Model C590W "Metropolitan"

Combines 4-speed record changer (will play 6 records & intermix 10" and 12" discs at same



speed) with ceramic cartridge; for LP & 78 rpm records; 25 W/channel dynamic power at 5% HD; AM-Stereo FM tuner section; pair of "Circle of Sound 360" speaker systems with sealed sound chambers; each system has high-compliance woofer directing sound down & exponential treble horn projecting sound up to deflector cones; response 40-15,000 Hz; speaker cabinet 14 $\frac{1}{8}$ " H x 9 $\frac{1}{8}$ " x 9 $\frac{1}{8}$ " x 9 $\frac{1}{8}$ " D; control center 9 $\frac{3}{8}$ " x 16 $\frac{1}{4}$ " x 17 $\frac{3}{8}$ " D; walnut cabinet; dust cover; \$299.95

### Model C587W

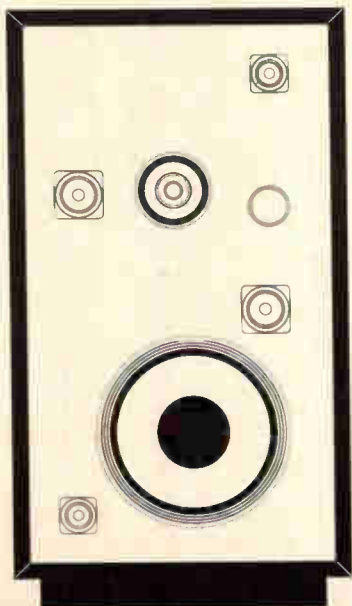
Same as Model C590W except has bookshelf-type completely sealed speaker systems; each with 6" high-compliance woofer & exponential treble horn; speaker cabinet 10 $\frac{7}{8}$ " x 12" W x 7 $\frac{1}{2}$ " D; walnut finish; \$269.95

# For \$279 we give you engineering. For an extra \$20 we throw in some furniture.

To call the **Rectilinear III** a piece of engineering is a rather vigorous understatement.

The equipment reviewers of leading hi-fi and other technical publications have gone on record that there's nothing better than this \$279 floor-standing speaker system, regardless of type, size or price. (Reprints on request.)

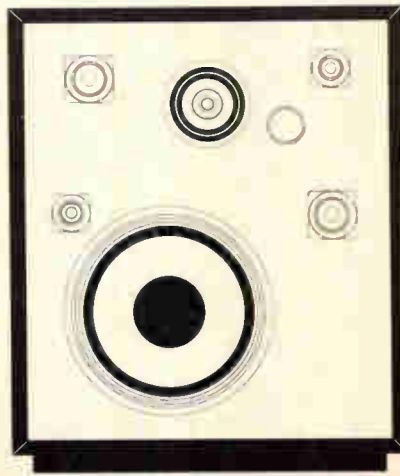
But engineering is all you should expect when you buy this



original version of the **Rectilinear III**. Its cabinet is 35" by 18" by 12" deep, handsome but utterly simple. For \$279, you get quality and taste but no frills.

However, if you're the last of the big-time spenders, you can now escape this austerity for an extra \$20. Because, for \$299, there's the stunning new lowboy version of the **Rectilinear III**, 28" by 22" by 12 1/4" deep, with a magnificent fretwork grille.

Mind you, the actual internal volume of the enclosure is the same in both versions. So are the



drivers and the crossover network. Only the cabinet styles and the dimensions are different. In the dark, you can't tell which **Rectilinear III** is which. They sound identical.

That's engineering.

(For more information, including detailed literature, see your audio dealer or write to Rectilinear Research Corp., 107 Bruckner Blvd., Bronx, N.Y. 10454. Canada: H. Roy Gray Co. Ltd., Markham, Ont. Overseas: Royal Sound Co., 409 N. Main St., Freeport, N.Y. 11520.)

## Rectilinear III

# REAL 4-CHANNEL STEREO IS EXPENSIVE. BUT NOW IT DOESN'T HAVE TO BE VERY EXPENSIVE.



## Introducing our expensive, but not very expensive, 4-channel receiver. The Fisher 601.

In 1970, Fisher brought out the world's first true 4-channel receiver, the Fisher 701. The price was \$699.95.

Now, you have to understand that a true 4-channel receiver requires nearly twice the electronics of an equally good 2-channel receiver.

And since the 701 was to be the world's first 4-channel receiver, we pulled out all the stops when we designed it. Which resulted in a piece of equipment that was *very* expensive. Incredibly good, but very expensive.

But now we think it's time to bring out a top-quality 4-channel receiver that more people can afford. One that doesn't cost a lot more than the best 2-channel receivers. So we're introducing the Fisher 601 4-channel AM/FM receiver.

### Meet the Fisher 601. \$599.95.

Even though the 601 is not the top of the Fisher 4-channel line, it's a no-compromise piece of equipment.

It's got everything: power, sensitivity, versatility, and wonderfully clean 4-channel sound.

### 200 watts is a lot of power.

The Fisher 601 has 200 watts of clean power. It's fully capable of driving two sets of speakers—four main, four remote. And it will drive them at concert levels with no sign of strain.

The FM tuner section has 1.8 microvolts sensitivity, which is on a par with the tuners in the finest 2-channel

receivers Fisher makes. You'll get clear reception on stations that non-Fisher tuners pick up as static.

### A full complement of controls.

The new 601 receiver is equipped with bass and treble controls, of course. They're of the Baxandall variety, which is a little more expensive than the kind other makers like to use. But they're also better. (They leave the midrange alone while you adjust the bass or treble.)

A muting switch quiets the noise between FM stations. There's a high filter so you can cut out unwanted high frequencies on the front channels, if you choose. There's a balance control, loudness contour and tape monitoring switches for front and rear channels.

Of course, the 601 has controls for mode, selecting speakers, and selecting a sound source. And the front and rear-channel volume controls slide like professional sound-studio faders.

### The Fisher 2+2 matrix system. 4 channels out of 2.

Not only does the Fisher 601 give you fantastic sound with true 4-channel program material, it also incorporates a switch to activate a special circuit that lets you create 4 channels out of 2-channel material. The circuit extracts ambiance information from the channels that you otherwise couldn't hear, and feeds it into the two rear channels. This information, which represents the

sum of the reflected signals from the original recording source, enhances the stereo effect. The result is as close as you can get to true 4-channel sound, without actually starting with four separate signals.

So now you can hear your entire library of stereo LP's, tapes, and even FM-stereo broadcasts in 4-channel. And even more important, Fisher's 2+2 matrix system will let you play the various different stereo records and tapes that have been encoded with 4-channel information for playback on a 4-channel system.

That's planned non-obsolence.

### Only 50¢! \$2 value!

Send for your copy of The Fisher Handbook, fact-filled 72-page guide to high fidelity. This full-color reference book also includes complete information on all Fisher stereo components. Enclose 50¢ for handling and first class postage.

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# 9

# 4-Channel Components

Decoders, Adapters, Amplifiers, Receivers, Tape Machines, Accessories

**A**lthough the status of 4-channel sound for use in the home is quite fluid at this writing, there is enough hardware and program source material to permit the adventurous listener to enjoy 4-channel reproduction at a modest investment. This report is not intended to be all-inclusive, but rather a bird's-eye view of the type of equipment available, its cost, and performance specifications.

Basically, 4-channel sound is an extension of the familiar 2-channel stereo system. In addition to the conventional left- and right-channel signals at the front of the listening room, another pair of speakers at the back of the room carry left-rear and right-rear channel information. A recording made with four similarly placed microphones can thus be reproduced in the home with a spatial distribution and sense of realism not attainable with ordinary 2-channel stereo.

Strictly speaking, such a "discrete" 4-channel system requires four very distinct program channels—which in practice today means a 4-track open reel or 8-track cartridge tape system. A few 4-channel reel-to-reel tapes have been released and there are tape decks and recorders capable of handling this sort of program information. However, there is little sign of an immediate expansion in the 4-channel open-reel-tape system technique.

The second discrete 4-channel system embodying 8-track tape cartridges—an adaptation of the system widely used in automobile stereo players—offers a convenient medium for 4-channel sound reproduction. There is a reasonable number of "Q-8" tape cartridges on the market and as will be shown there is a variety of tape-cartridge players available for home use. However, in spite of the simplicity and low cost of the cartridge system and the advantages of discrete 4-channel recordings, the cartridge player still leaves much to be desired when judged by the standards applied to the top-quality home stereo system.

A discrete 4-channel disc system has been developed by JVC and released commercially in Japan. Although technically feasible, the system requires a specialized phono cartridge with a frequency response extending to 45,000 Hz. This exceptional bandwidth is required in order to cope with the subcarrier modulation technique developed by JVC as a means of embossing discrete 4-channel information on a recording disc. The practical limitations of the JVC system are rather awesome and it seems doubtful that, in view of the other options currently available, a discrete channel disc system is in the offing.

## Discrete Systems—Open Reel Tape

Four manufacturers offer top-line open reel-to-reel 4-channel tape decks. At the present state-of-the-art, these products provide the highest order of fidelity and the lowest distortion figures of any 4-channel system.

**Akai**—A 4-track, 4- or 2-channel compatible stereo tape deck has recently been introduced by this manufacturer as its *Model 1730D-SS*. This is a two-speed (7½ and 3¾ ips) transport



with a frequency response of 30-22,000 Hz at  $\pm 3.0$  dB. The wow & flutter (also measured at 7½ ips) is claimed by the manufacturer to be 0.12% rms. The *Model 1730D-SS* has four heads—one each for recording and playback and two erase heads (2-channel and full-track). There are four independent VU meters, fully automatic shut-off, headphone jacks for front and rear speakers, and a pause control lever. The tape deck measures 18" H x 16½" W x 9½" D.

**JVC**—A three-head, 4-channel stereo tape deck is now available from this manufacturer as *Model 1400* (\$399.95). This is a 4-track, 4- or 2-channel deck with two tape speeds (7½ and 3¾ ips). The claimed frequency response is 20-25,000 Hz. Wow & flutter is less than 0.07% and the S/N is better than -53 dB. The *Model 1400* features four independent slide-type record and playback volume-level controls plus a master control. There are four independent VU meters, an automatic stop feature, tape bias adjustment, and a pause lever control.

**Kenwood Electronics**—The *Model KW-6044* features four independent VU meters and level



controls and has a front-panel headphone jack with "Front-Rear" switching to permit monitoring of each channel through stereo headphones. This tape deck may also be used for 2-channel recording. The deck has three tape

speeds (7½, 3¾, and 1½ ips) and frequency response of 20-20,000 Hz at 7½ ips. Wow & flutter is less than 0.12% and the S/N ratio is better than 47 dB (also measured at 7½ ips).

**Panasonic**—A full complement of controls makes the *Model RS-740* (\$399.95) a rather



versatile 4-channel tape deck. Frequency response is 30-20,000 Hz at  $\pm 3.0$  dB (7½ ips) with wow & flutter of less than 0.1%. Besides the four independent VU meters, the *Model RS-740* has special front and rear separation controls, tape-bias adjustment switch, front or rear headphone monitoring, pause control, etc. This tape-recorder deck has two speeds (7½ and 3¾ ips), mike and line inputs, digital counter and automatic shutoff.

**Sony/Superscope**—Three tape decks are offered by Sony/Superscope in what the manufacturer refers to as its "Quadradial" product line. The *Sony Model 366-4* is an adaptation of the popular *Model 366* 2-channel stereo tape deck. The deck has four independent VU meters, automatic total-mechanism shutoff, tape/source monitoring, noise suppressor switch, sound-on-sound capability, etc. The *Model 366-4* is a 2-speed (7½ and 3¾ ips) deck with wow & flutter of 0.09% and a S/N ratio of 52 dB, measured at 7½ ips. The *Model 366-4* has a unique slanted walnut base mounting arrangement.

*Sony/Superscope Model 654-4* has many of the features of the *Sony Model 650* stereo tape deck and features a tape bias adjustment switch, four independent VU meters, color-coded push-button controls, and modular plug-in electronics (including eight preamplifiers—four for recording and four for playback). This deck sells for \$795.00, is two speed (7½ and 3¾ ips), has wow & flutter of 0.04% and a S/N ratio of 54 dB.

The *Sony/Superscope Model 854-4* is a professional-quality 3-motor tape deck with 10½" reel capacity. This deck is somewhat similar to the *Sony Model 850* stereo deck with complete 4-channel recording and playback capabilities with the manufacturer's VariSpeed pitch control added. Selling for \$1,595.00, the *Model 854-4* is a three-speed deck (15, 7½ and 3¾ ips) with bias and equalization adjustments, four independent VU meters, color-coded push-button controls, sound-on-sound capability, two stereo-

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## 4-Channel Components

headphone monitoring jacks, and a solenoid-operated three-motor transport.

## Discrete Systems—8-Track Cartridges

The 8-track format (adapted to 4-channel reproduction) eliminates the major problem with open reel 4-channel tapes—they must be rewound after each playing since there is no "return" track. The "Q-8" cartridge—being an endless loop of tape—just keeps on going and although the fidelity rarely extends above 8000-9000 Hz, the 8-track cartridge player definitely has a place in today's 4-channel scene.

**Ampex**—Just added to this manufacturer's line is an automatic 4- or 2-channel 8-track tape-cartridge player combined with an AM/Stereo-FM receiver. Priced under \$230.00, the *Model 8400* has two power amplifiers and four preamps. Like most of the 8-track machines, the user may advance the tracks manually, or let the units do all of the work, automatically.

**Bell & Howell**—For \$169.95 this manufacturer offers its *Model 3120*—an automatic 8-



track, 4-channel stereo tape cartridge player. Included in the selling price are two small speaker systems measuring 10" H x 8 $\frac{3}{4}$ " W x 5 $\frac{3}{4}$ " D. When the *Model 3120* is added to an existing stereo system the user can play either 2-channel or 4-channel cartridges. The basic unit includes a master volume control and stereo-headphone output jack on the front panel.

**Fisher**—A 2- or 4-channel tape-cartridge player (*Model CP-100*) is available for \$169.95. A special feature of the *Model CP-100* is the three program controls: "Repeat"—the same program being played repeatedly; "Change"—advance to the next program; and "Consec"—continuous play through of all programs from beginning to end.

The mechanical and electronic package of the *CP-100* cartridge player is incorporated in the new *Model TX-420* cartridge player, decoder,



and auxiliary 2-channel amplifier (18 W/ch dynamic power into 8 ohms.). The *Model TX-420* has a decoder circuit which can synthesize 4-channel sound from conventional 2-channel stereo source material. This "hidden information" is fed into the internal power amplifiers for playback through the rear speakers of this 4-channel system. The *Model TX-420* enables the user to convert present Fisher stereo equipment to 4-channel operation with a minimum of new interconnections. The *Model TX-420* will be marketed for \$299.95.

**Lafayette**—A variety of stereo components incorporating the 8-track, 4-channel cartridge tape deck is now being offered by this manufacturer. At the bottom of the line is the *Model RK-48*

selling for \$89.95. This is a compatible 4- or 2-channel stereo cartridge tape deck with an output of 1 V maximum per channel and a hum & noise figure of -49 dB. The *Model RK-48* measures 4 $\frac{1}{2}$ " H x 9 $\frac{1}{2}$ " W x 10 $\frac{1}{2}$ " D.

The *Model LRK-480* also features the 8-track, 4-channel cartridge tape player, but includes an AM/Stereo-FM receiver, plus Lafayette's "Composer Circuit" for deriving 4-channel stereo material from 2-channel stereo tapes, discs and FM broadcasts. This unit may also be used as a stereo adapter by adding an external 2-channel stereo amplifier and two additional speakers. The amplifier unit of the *Model LRK-480* is rated at 10 W/ch at  $\pm 1.0$  dB. FM tuner sensitivity is 3.5  $\mu$ V and stereo separation is 35 dB at 400 Hz. There is an Stereo FM indicator light and phono inputs for either magnetic or ceramic cartridges.

Top of the Lafayette line, featuring both the 8-track, 4-channel cartridge tape player and Lafayette's "Composer Circuit," is the *Model LRK-855* (\$219.95). The *Model LRK-855* includes an AM/Stereo FM receiver similar to that in the *Model LRK-480*. In addition there are numerous push-button controls, two VU meters, filters, and provisions for external tape recording output circuits.

**Panasonic**—Featuring a continuous-play control, the *Model RS-847* is a compatible 8-track, 4- or 2-channel stereo cartridge tape deck. Built to top-level specifications, the *Model RS-847* has a claimed frequency response of 30-15,000 Hz and a wow & flutter rating of less than 0.2%. Like most of the cartridge player decks, the *Model RS-847* has easy loading and a protective mechanism to prevent tape snarls or damage when the player is not in use. There is a single-button program selector to control all tracks and a lighted indicator to tell the user whether the cartridge is 2-channel or 4-channel. Price of the *Model RS-847* just announced at press time is \$129.95.

**Pilot**—The *Model PTD-400* "Quadrasonic" tape cartridge deck (\$119.95) is fully 4-channel or 2-channel compatible and has four preamplifiers to give 0.5 V output per channel. The *Model PTD-400* has a program indicator and measures 4 $\frac{1}{2}$ " H x 12" W x 8 $\frac{3}{4}$ " D.

**Toyo**—The *Model 702* (\$169.95) is a 4-channel, solid-state integrated amplifier featuring a



built-in 8-track, 4- or 2-channel compatible cartridge tape playback system. The power output rating of the *Model 702* is 20 W rms (total). Trademarked a "Qaudio" system, the *Model 702* has four independent VU meters, ganged tone controls and a loudness compensation switch. The manufacturer claims a frequency response of 100-10,000 Hz and wow & flutter at 3000 Hz of 0.35%. The *Model 702* measures 5 $\frac{1}{2}$ " H x 18 $\frac{3}{4}$ " W x 10" D.

A somewhat similar model, but called the *Model 707* (\$174.95) features an input switch



selector for phono, reel-to-reel or cassette tape, or any other stereo program source. The phono input has a sensitivity of 7.0 mV and the aux input sensitivity is 100 mV. Dimensions of the *Models 702* and *707* are identical.

Retailing at \$249.95, the *Model 730* is a com-

patible 4- or 2-channel cartridge tape player, plus an AM/Stereo FM receiver. The amplifier section is rated at 20 W/ch dynamic power. The claimed frequency response is 40-18,000 Hz. The FM tuner has a sensitivity of better than 6.0  $\mu$ V for a S/N ratio of 30 dB. Each *Model 730* has a preamplifier for mag phono input (3.0 mV sensitivity), loudness compensation, stereo and tape program indicator lights, plus automatic 4- or 2-channel tape cartridge switching.

## 4-Channel Amplifiers

Equipment designers are fighting the battle of doubling up preamplifier and power amplifier circuits without doubling the physical volume of an integrated amplifier. The battle is being won, but at a cost—at the present time—of a substantial reduction in the power output of any one of the 4 channels. Undoubtedly, as 4-channel stereo sound becomes more common, per channel output will rise without significantly increasing the size of today's handsome and well-packaged amplifiers.

**Akai**—Primarily designed as a companion piece to its 4-channel tape deck, Akai has recently introduced the *Model AA-6100* (price



n.a.). The *Model AA-6100* is a discrete 4-channel integrated amplifier with a dynamic power output rating of 20 W/ch into 8 ohms. Harmonic distortion is claimed to be 0.5% at 10 W output into 8 ohms at 1000 Hz. Frequency response is 20-22,000 Hz at -3 dB and the S/N ratio is better than -70 dB. The *Model AA-6100* is in a modest size package measuring 4" H x 16 $\frac{3}{4}$ " W x 9 $\frac{3}{4}$ " D.

**Kenwood Electronics**—Its *Model KM-7044* is basically an all-solid-state preamplifier with



the special feature of controllable reverberation to the two rear speakers thus simulating a "concert-hall" effect. Kenwood is calling the *Model KM-7044* its "Surround Sonic Quadraxer." The preamplifier also features four separate VU meters with an attenuator circuit to permit simplified output level adjustment. All balance controls are of the "professional" slide-type and there is a special mixing control that easily changes the relative sound level between front and rear speakers. The *Model KM-7044* permits dubbing of 4-channel program sources to encoded 2-channel recordings; 2-channel to 2-channel dubbing; or 2-channel or 4-channel playback. A special speaker directionality control rotates the sound source position of the direct sound (usually front channels) and reverberated sound (usually rear channels) clockwise or counterclockwise. The *Model KM-7044* has a 4-channel frequency response of 20-20,000 Hz at -1 dB and a S/N ratio of better than -75 dB. The measurements of this preamplifier are 5" H x 19 $\frac{1}{2}$ " W x 10" D.

**Pioneer**—A variety of new products is being offered by this manufacturer including preamps, power amplifiers and special integrated 4-chan-



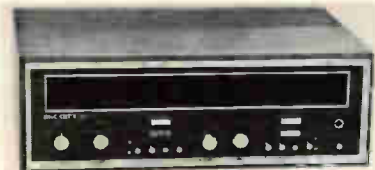


nal stereo amplifiers. In the latter category is the *Model QA-800* (\$349.95) with a 4-channel power rating of 20 W/ch rms at 8 ohms. The IHF power bandwidth is claimed by the manufacturer to be 15-50,000 Hz with distortion of less than 0.5%. The *Model QA-800* includes the choice of either de-matrixing or phase shifting of 2-channel material to obtain simulated 4-channel reproduction. Each of the 4 channels has a front-panel volume control and gain of the entire amplifier may be controlled by a master volume control. In addition, the *Model QA-800* includes hi and lo filters, loudness compensation, multiple loudspeaker selection, tape monitoring, and a 20 dB muting switch. The unit measures 5 $\frac{1}{8}$ " H x 16 $\frac{1}{8}$ " W x 13 $\frac{1}{4}$ " D.

The *Model QC-800* is similar to the *Model QA-800* just described, but does not include a power-amplifier section. This unit sells for \$249.95 and has 3-dB stepped tone controls and a 2-4 channel "Quadralizer" for choice of discrete, matrix or phase-shift 4-channel sound enhancement. The frequency response of the *Model QC-800* is 10-70,000 Hz at  $\pm 1$  dB while the harmonic distortion is rated at less than 0.05%. The unit itself is the same physical size as the *Model QA-800*.

The Pioneer *Model QM-800* is a 4-channel power amplifier rated at 280 W total of music power at 4 ohms or 25 W/ch dynamic power with all 4 channels driven and feeding 8-ohm speakers. Power bandwidth is claimed to be 10-50,000 Hz at a distortion of less than 0.5% with all channels driven. There is a master input-level control and four independent power input meters. The *Model QM-800* may also be used as a 2-channel, 2-way power amplifier. The unit measures 5 $\frac{1}{8}$ " H x 16 $\frac{1}{8}$ " W x 13 $\frac{1}{4}$ " D. It sells for \$299.95.

**H. H. Scott**—One new product is being introduced in late 1971 for 4-channel reproduc-



tion. The *Model 495* (\$349.90) will have an rms power rating of 25 W/ch at 8 ohms. The frequency response will be 20-30,000 Hz at  $\pm 1$  dB and the harmonic distortion at rated output is less than 0.8%. The *Model 495* will feature numerous operating conveniences including multiple speaker switching, quadrant stereo level setting, hi-frequency filtering, dual phone jacks, tape monitoring, microphone-phono equalization switch, etc. This unit measures 6" H x 17 $\frac{1}{2}$ " W x 17" D.

Featuring IC preamplifiers on all phono and microphone inputs, the *Model 499* (\$459.90)



is a solid-state, 4-channel integrated amplifier with an rms per channel rating of 35 W at 8 ohms. Frequency response is 15-30,000 Hz at  $\pm 1$  dB and harmonic distortion is claimed to be 0.5% at rated output. The *Model 499* is a straightforward 4-channel integrated amplifier designed for use with a 4-channel tape deck. Like most other 4-channel amplifiers, the *Model 499* may also be used as two stereo pairs with each pair operating independently and without interaction. Featured in the *Model 499* are four independent VU meters, tape monitoring, loudness compensation, hi and lo filtering, four microphone jack inputs on the front panel, and independent tone and volume controls on all 4 channels.

1972-EDITION

## 4-Channel Stereo Receivers

In the absence of any 4-channel Stereo-FM programming, the purist might consider a product called a 4-channel stereo receiver a misnomer. Most of the 4-channel stereo receivers to be described contain provisions to add a futuristic "black box" that will enable 4 discrete channels to be decoded from FM multiplex. In preparation for that day, the usual 4-channel stereo receiver has four separate power amplifiers and is capable of feeding (at a somewhat low power level) four separate speakers. In addition, these stereo receivers almost always contain some sort of decoding, de-matrixing or synthesizing device to extract hidden ambient information from conventional 2-channel stereo program material.

**Fisher**—Typical of the 4-channel stereo receivers is the *Model 601* (\$595.95, without cabi-



net). The amplifier section is rated at 36 W/ch rms into 8 ohms. The power bandwidth is 25-22,000 Hz and harmonic distortion is less than 0.5%. The phono sensitivity is 2.7 mV and the aux input is 200 mV for rated output. The FM tuner section has a Usable Sensitivity of 1.8  $\mu$ V, capture ratio of 2.0 dB and S/N ratio of 66 dB. The *Model 601* also includes a "decoder" to approximate 4-channel reproduction by an ambience-enhancing technique using 2-channel program sources. Besides the 4-channel capability, the *Model 601* also contains provisions for tape monitoring, loudness compensation (front or rear), Stereo FM muting, hi-frequency noise filter, etc. The unit measures 5 $\frac{1}{4}$ " H x 16 $\frac{1}{8}$ " W x 16 $\frac{1}{2}$ " D.

**JVC**—One of the more powerful 4-channel amplifiers is incorporated in the *Model 5444*



AM/Stereo FM receiver. This amplifier is rated by the manufacturer at 50 W/ch (IHF) into 4 ohms with a power bandwidth of 20-30,000 Hz. HD at rated power output is less than 0.5%. The FM sensitivity is 2.0  $\mu$ V with stereo separation of 35 dB. JVC's *Model 5444* has a panel covered with controls including a graphic tone-control arrangement for the front and rear speakers, phono input (2 mV), remote control, FM muting, headphone outputs, tape monitoring, etc. The *Model 5444* sells for \$499.95 and measures 5 $\frac{1}{8}$ " H x 22 $\frac{1}{8}$ " W x 13 $\frac{1}{4}$ " D.

**Pilot**—The *Model PMC-4000* is referred to by the manufacturer as its "Quadrasonic" modu-



lar center. The amplifier section has a 20 W/ch (IHF) dynamic power rating. The distortion at rated power output is less than 0.5% and the IHF power bandwidth is 20-50,000 Hz. The amplifier has a damping factor greater than 25 and a phono input sensitivity of 2.0 mV. The AM/Stereo FM receiver has an IHF FM sensi-

tivity of 2.5  $\mu$ V, a capture ratio of 3.5 dB, and a S/N ratio of 50 dB. Each amplifier has a complete tone-control system and the rear channels have individual loudness controls. There is sufficient input versatility to accept either discrete, matrix or synthesized 4-channel program material. The *Model PMC-4000* will sell for \$349.95.

**Pioneer**—The *Model QX-8000* has a 4-channel amplifier with a rating of 45 W/ch dy-



amic power at 4 ohms. The harmonic distortion is less than 1.0% at rated output. The FM tuner has a sensitivity of 2.2  $\mu$ V and FM separation is more than 38 dB at 1000 Hz. In addition to all the usual controls featured in products of this nature, the *Model QX-8000* incorporates the manufacturer's unique choice of either matrix or phase-shift recovery of 4-channel program material. This unit may also be used for all conventional 2-channel discs and tapes. The *Model QX-8000* sells for \$499.95 and measures 6 $\frac{1}{4}$ " H x 20" W x 15 $\frac{1}{8}$ " D.

**Sansul**—There are four new products being introduced by this versatile manufacturer incorporating 4-channel amplifiers and AM/Stereo FM receivers. At the low end of the line is the *Model QR-500* with 15 W/ch dynamic power output at 4 ohms. Total harmonic distortion is said to be less than 1.0% at rated output and the frequency response is 30-30,000 Hz at  $\pm 2$  dB. The FM tuner has a sensitivity of 5.0  $\mu$ V, a stereo separation of better than 50 dB. The *Model*



*QR-500* will include both a 4-channel "decoder" and a 4-channel "synthesizer." The decoder will be used to de-matrix 4-channel broadcasts while the synthesizer will be used to convert standard stereo broadcasts, discs and other 2-channel program sources into a synthesized 4 channel program.

The *Model QR-1500* is quite similar to the model above, but is rated at 25 W/ch dy-



amic power into 4 ohms. Harmonic distortion for this amplifier is said to be less than 0.8% at rated output and frequency response is 30-30,000 Hz at  $\pm 1.0$  dB. Otherwise, specifications of the *Models QR-500* and *QR-1500* are identical.

The *Model QR-4500* has an amplifier channel rating of 60 W/ch dynamic power into 4 ohms. Total harmonic distortion is less than 0.5% at rated output and the frequency response is 20-30,000 Hz at  $\pm 1$  dB. The FM tuner has an IHF sensitivity of 2.0  $\mu$ V, S/N ratio of better than

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## 4-Channel Components



65 dB, and stereo separation of better than 35 dB. *Model QR-4500* receiver also has the manufacturer's built-in decoder for matrixed 4-channel broadcasts and a synthesizer for converting 2-channel stereo broadcasts, discs and tapes into 4-channel program material. The front amplifiers have hi and lo filters and the user has tape monitoring, loudness compensation, FM muting, etc. options. A unique feature in the *Model QR-4500* is the "balancing" switch that rearranges orientation of the program material; quarter-turn right, half turn, and quarter-turn left.

**H. H. Scott**—Two AM/Stereo FM receivers are being introduced by this manufacturer. The *Model 443* will be rated at 15 W/ch rms into 8



ohms. The IHF power bandwidth is 25-20,000 Hz and the harmonic distortion at rated output is 0.5%. The FM sensitivity is 2.5  $\mu$ V and the capture ratio is 2.5 dB. The *Model 443* contains the manufacturer's special 4-channel "Quadrant" circuit to convert 2-channel stereo to simulated 4-channel program material. This unit also has an output strapping facility to double the power output per channel when operated in the 2-channel stereo mode. This unit measures 6" H x 17 1/2" W x 17" D and will sell for \$319.90.

The *Model 444* (\$449.90) is being rated at



25 W/ch rms into 8 ohms. The IHF power bandwidth is 15-40,000 Hz with a hum & noise figure of -65 dB (phono input). The FM tuner sensitivity is 1.9  $\mu$ V with a capture ratio of 2.5 dB. The tuner has a frequency response of 30-15,000 Hz at  $\pm$ 1.5 dB. Each *Model 444* also has the special 4-channel "Quadrant" circuit built-in, plus the strapping configuration to permit doubled power output per channel when in the 2-channel stereo mode. Both the *Model 443* and *444* have multiplex input and FM detector output connections to permit addition of any future 4-channel FM multiplexing adapter.

### Matrix Decoder Systems

A fairly recent innovation in 4-channel stereo is the matrix system. The word "matrix" is used here to identify a process of deriving 4 separate signals—by one means or another—from conventional 2-channel disc, tape, or FM broadcasting source material. When 2-channel material is played through a matrix device in the

user's home, there is a recreation of 4-channel programming. At this writing, there are at least a half-dozen matrixing devices or decoders for home use: here are the highlights of some of the equipment items presently available.

**Dynaco/Lafayette**—The simplest device to recover 4-channel information from two stereo channels is the Dynaco "Quadapter" and some-



what similar Lafayette "4-Channel Adapter"



This process has been trademarked by Dynaco as the *Dynaquad*. It is considered the simplest of all of the 4-channel derived systems since it does not require two additional amplifiers or power amplifiers—simply four separate speaker systems.

The *Dynaquad* derives from 2-channel stereo material a certain amount of information that is effectively ignored or cancelled out under normal 2-channel playback conditions. The 4-channel "effect" is reported to vary in order of magnitude and degree from disc to disc. However, both the Dynaco and Lafayette adapters are relatively inexpensive (about \$30) and are certainly the easiest introduction to the enjoyment of 4-channel reproduction.

Dynaco has also recently introduced the *Model SCA-80Q*, a solid-state integrated amplifier with the *Dynaquad* circuit built-in. This amplifier is rated at 40 W/ch rms at 8 ohms and has a claimed frequency response of 15-50,000 Hz at  $\pm$ 0.5 dB. The *SCA-80Q* measures 4 1/4" H x 13 1/2" W x 10" and is sold completely wired for \$249.95, or is available as a kit for \$169.95.

Lafayette has announced a variety of auxiliary and/or compatible 4-channel stereo amplifiers incorporating its 4-channel adapter circuit. At the low end is the *Model LA-424* "Quadnaural" auxiliary amplifier which features Lafayette's 4-channel "Composer" circuit to derive 4-dimensional sound from 2-channel stereo discs or tapes. The *Model LA-424* sells for \$59.95 and is rated at 25 W/ch. Lafayette's *Model LA-2525* is a true 4-channel amplifier which also includes the "Composer" 4-channel de-matrixing circuit. This amplifier sells for \$119.95 and is rated at 10 W/ch into 8 ohms with a frequency response of 20-20,000 Hz at  $\pm$ 1.5 dB. There are separate volume controls for all 4 channels and ganged bass and treble controls for the front and rear channels. Input options include mag. phono (3.5 mV) ceramic phono (125 mV), tuner (500 mV), and aux (275 mV).

The Lafayette *Model LA-44* is an up-graded version of the *Model LA-2525* featuring 42 1/2 W/ch—4 channels at 4 ohms output impedance—and sells for \$219.95. Besides featuring Lafayette's "Composer" circuit, the *LA-44* can be used as two completely independent stereo



systems—supplying two different stereo programs to two different household locations from two different stereo sources simultaneously. The *LA-44* also features push-button input function selection and tape recorder output jacks to enable the user to build his own library of derived 4-channel material.

A step further up is the Lafayette *Model LR-440* utilizing the same amplifier arrangement as in the *Model LA-44*, but including an AM/Stereo FM tuner. This composite derived 4-channel stereo receiver sells for \$369.95 and has an IHF FM sensitivity of 1.6  $\mu$ V, stereo separation of 40 dB at 400 Hz, and S/N ratio of 75 dB. The FM capture ratio is stated as being 1.5 dB.

**Eico**—In what is apparently a somewhat similar circuit arrangement as the *Dynaquad*, Eico has introduced the *QA-4* "Quatrasonic" adapter (\$29.95 factory assembled, or \$17.95 as a kit). In the *Model QA-4* the rear speaker volume level is referred to as the "background level."

**Electro-Voice/Heathkit**—To avoid dependence on "errant" 4-channel material being available on readily accessible 2-channel discs and tapes, Electro-Voice pioneered a true 4-channel playback system built primarily around its E-V Stereo-4 system. This is a matrixing device requiring (for optimum performance) encoding of the 4-channel material into two stereo channels at the disc or tape recording studios and Stereo FM stations. In the user's home the



Electro-Voice *EVX-4* decoder separates the two encoded signals into the four original signals which are then fed to four separate amplifiers and four speakers. The *EVX-4* decoder sells for around \$60 and a kit version is available from Heath as the *Model AD-2002* for \$29.95. The *EVX-4* decoder may be easily connected to any existing amplifier system that has tape input and output jacks. This system is also "compatible" which in this context simply means that the playback of non-encoded material (2-channel discs or tapes) will be enhanced and provide some "simulated" 4-channel effects.

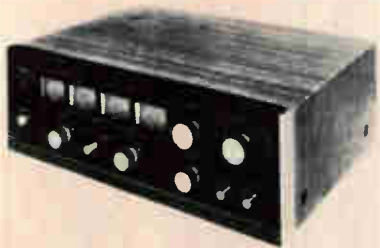
Electro-Voice also offers a modification of its *Model 1244* solid-state integrated amplifier with the E-V Stereo-4 decoder built in. This unit (*Model 1244X*) is an "add-on" 2-channel amplifier with a 40 W/ch dynamic power output. The *Model 1244X* sells for \$129.95 and was designed to enable users with existing stereo high-fidelity equipment to reproduce discrete 4-channel sound from tape or to play program material encoded by the E-V Stereo-4 method. Electro-Voice is intending to offer in the fall or winter 1971-72 a new stereo receiver incorporating 4 discrete amplifier channels as well as the Stereo-4 decoding circuit. This 4-channel AM/Stereo-FM receiver will be known as the *Model EVR-4* and will have an amplifier rating of 62 1/2 W/ch dynamic power output, or 50 W/ch IHF power output into 4 ohms. The FM tuner will be rated at 1.9  $\mu$ V sensitivity IHF with 30 dB separation at 1000 Hz.

**Panasonic**—The *Model SU-3604* (\$309.95) is a solid-state integrated amplifier rated at 60



W/ch rms output into 4 ohms. The preamplifier section of the *Model SU-3604* contains an unique built-in de-matrixing circuit for taking signals for the rear channel speakers from conventional 2-channel program sources. Panasonic calls its process "Quadruplex." This de-matrixing system is not passive, but requires a separate 2-channel amplifier (such as the manufacturer's stereo receiver *Model SA-6500*). A switching arrangement is also provided in the *Model SU-3604* to enable discrete 4-channel amplification from 4-channel program sources. Even without the Quadruplex circuit, the *Model SU-3604* is a top-rated integrated amplifier with a frequency response of 5-100,000 Hz at -1.0 dB. Harmonic distortion and intermodulation distortion are 0.2% at the rated output. Hum & noise is -73 dB and the phono input and magnetic phono input sensitivity is 1.5 mV. Another unique feature of the *Model SU-3604* is a special frequency tone-control system with three-step turnover switches with settings for 125, 250 and 500 Hz for the bass range and 2000, 4000 and 8000 Hz for the treble range.

**Sansui**—A second and more complex means of encoding and decoding 4 channels on/off 2-channel discs or tape has been introduced by Sansui with the *QS-1 Quadphonic Synthesizer*.



Although material using Sansui's own recording matrix is not commonly available in North America, the *QS-1 Synthesizer* does use to advantage its phase-modulation decoder to enhance the liveliness and presence of reproduced sound. The *QS-1 Quadphonic Synthesizer* is a substantially more imposing and complex device than either of the decoders already mentioned. A stereo power amplifier to feed the rear speakers is required and Sansui has gone one step further by developing a method involving the use of six separate speaker systems to permit the listener to choose a speaker arrangement according to his personal preference or the type of music being played.

**Sony/CBS**—A third true matrixing system was developed at CBS Laboratories under the leadership of Benjamin Bauer. Called the *CBS SQ (Stereo/Quadrasonic)* matrix, this system utilizes an involved electronic technique to superimpose rear channel information into record grooves already occupied by the usual 2-channel front speaker system information. Engineers liken this recording technique—discs only—to a helix that may spiral clockwise or counterclockwise. The double-helix superposition is a vector representation of the complex rear speaker program material.

An *SQ decoder* divides the channels so that 4 discrete channels can be fed 4 amplifiers and 4 speakers. The minor disadvantage of the *SQ* system—besides its restriction to discs—is the separation loss between the front and back pair of speakers. No matter what technique is employed, there is always some separation loss,

but on the *SQ* system separation appears to be less than measured using either Electro-Voice or Sansui systems. However, the *SQ decoder* and matrixing system is also reported to have more "logic" with which it is able to identify and cancel out signal information that turns up in the wrong one of the four channels.

Sony has introduced (for about \$55) an *SQ* system decoder (*Model TA-2241*), but at this writing the discs are not readily available.

**Toshiba**—The Toshiba "Quad Matrix" (*Model SC-410*) selling for \$169.95 is an attempt to



offer stereo enthusiasts the pleasures of 4-channel sound in either derived, matrix or discrete formats. Just how and whose decoding system is used in the *Model SC-410* has not been announced at this writing. The manufacturer claims that the *SC-410* will extract "hidden sound information" in a fashion similar to the Dynaco *Quadapter*, or even achieve a 4-channel effect from the 2 channels of a matrixed stereo LP (such as the E-V *Stereo-4*).

The *Model SC-410* includes a 2-channel power amplifier with 15 W (rms) power output per channel. A prominent feature is the Toshiba "QM Acoustical Effect Selector" which gives the listener four choices of multi-channel listening. The choices are labeled: "Concert Hall," "Studio," "Surround," and "Stage." Toshiba apparently derives these effects from an arbitrary mixing of the front and rear speakers with variations in the treble roll-off characteristic.

In addition to such versatility, the Toshiba *SC-410* also lets the user make 4 channels out of 2, play back 2-channel stereo material in the normal fashion, or listen to either of two discrete 4-channel sources.

**Toyo**—A 4-channel phase-shifting decoder (*Model QC-1*) is being offered by this manufacturer for \$49.95. The *QC-1* accepts either a phono or aux input and features an effect selector switch: "Solo," "Concert Hall," or "Surround." Apparently these effects are also simulated by mixing the signals from the front and rear speakers and varying the bass and treble roll-off frequencies.

#### 4-Channel Stereo Compacts

Somewhat similar to 4-channel stereo receivers, the 4-channel stereo compacts are systems ready to jump upon the 4-channel bandwagon, if and when 4-channel broadcasts become a reality. In addition to the usual 4-channel amplifier and AM/Stereo FM receiver, each of the compacts includes a high-quality record player/turntable combination. The 4-channel compact is quite versatile and will do a lot more things than first meets the eye.

**Panasonic**—The *Model SC-8700* (\$429.95) is a four-piece stereo system with a 4-channel amplifier. The amplifier is rated at 15 W/ch dynamic power into 8 ohms. The frequency response is 40-60,000 Hz at  $\pm 3.0$  dB and the

harmonic distortion is less than 1.0% at rated output. The *Model SC-8700* has three built-in program sources and will accept inputs from 4- or 2-channel open reel tapes, 8-track cartridges, or cassettes. The AM/Stereo FM tuner and amplifier are in a center unit package measuring 5 $\frac{1}{8}$ " H x 17 $\frac{1}{8}$ " W x 14 $\frac{1}{8}$ " D. On a separate base is a Garrard automatic turntable with a Pickering V-15 cartridge. This unit "nests" atop the center unit and measures 8 $\frac{1}{8}$ " H x 17 $\frac{1}{8}$ " W x 15 $\frac{1}{8}$ " D. Also included in the initial *Model SC-8700* package are two sealed three-way speaker units with an 8" woofer, 5" mid-range and 2" tweeter. Two additional speakers are required to play back 4-channel program material. A selector switch on the front panel of the stereo receiver permits use of the amplifier through a built-in electronic crossover to feed 15 W in each of two channels to the woofers and 15 W in each of the two channels to the mid-range and tweeter speakers.

**Sansui**—The *Model MQ-2000* 4-channel stereo compact is rated at 17 $\frac{1}{2}$  W/ch dynamic



power into 8 ohms. Total harmonic distortion is less than 1.0% at rated output and frequency response is 30-30,000 Hz at  $\pm 2$  dB. The FM tuner section has a sensitivity of better than 5.0  $\mu$ V, a S/N ratio of better than 50 dB, and stereo separation rating of better than 30 dB at 400 Hz. The *Model MQ-2000* includes the manufacturer's decoder for matrixed present-day 4-channel broadcasts and discs, plus a 4-channel synthesizer for converting 2-channel stereo broadcasts or discs into simulated 4-channel programming.

#### 4-Channel Stereo Headphones

Probably the most "unbelievable" aspect of 4-channel reproduction has been the development of 4-channel headphones. Stereo enthusiasts using headphones have front-row seats with 2-channel programming. With 4 channels, the listener is wholly immersed in sound in what many people describe as a vivid panorama of total sound. If you're wondering how they do it, the answer is simple: double up on the number of reproducers in each earpiece—mounting the additional new units slightly toward the "rear" of the earphone.

**Koss**—Destined to be on the market when this *Directory* is published is the new "Quadrafone" stereo headphone. Each earpiece houses two separate drivers—appropriately connected to the front and rear, left or right, speaker output terminals or jacks. The *Quadrafone (Model K2+2)* will sell for about \$85.00.

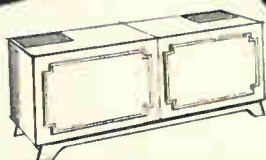
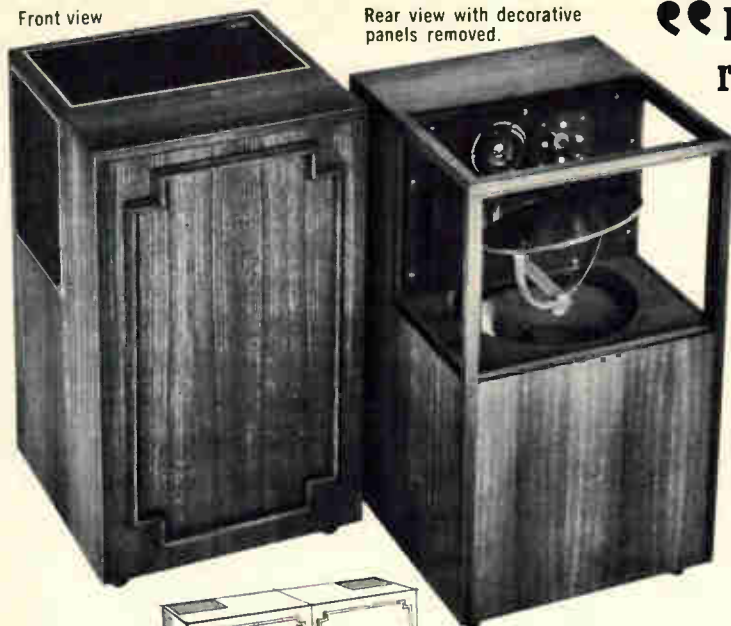
**Suporex**—The *Model QT-4* "Quad-Tette" (\$50.00) has four identical reproducers (two to an earpiece) and a claimed frequency response of 20-18,000 Hz. The cord length is 15'.

#### SPECIAL NOTICE:

While we have made every effort to have all prices shown as accurate as possible, just as we are about to go to press President Nixon announced that a 10% duty is to be levied against most foreign imports. In addition, the Japanese currency (yen) has been permitted to float so that, in addition to the 10% duty, Japanese products will cost more in this country because of the devaluation of the dollar in relation to the yen. As this is written, none of the manufacturers or distributors of imported products is able to give us revised retail prices reflecting these developments.

Front view

Rear view with decorative panels removed.



Two W80As on a single optional pedestal.

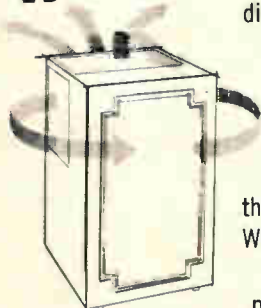
“Driven by a good amplifier or receiver, they must be ranked with the best reproducers available today...”

We auditioned a pair of W80A's in various positions and liked what we heard in all instances. They project a broad, natural-sounding acoustic front with ample "air" and "space" that lend a convincing note of realism to stereo playback ...the W80A is performing exactly as its designers intended it to. ”

-High Fidelity, June 1971

Unlike any other speaker system available today, two W80As can be placed anywhere in a room, any distance apart or from a wall ... even together on an optional pedestal as a single-cabinet console ... and still preserve stereo perception and original tonal balance no matter where in the room you are listening. Here's why:

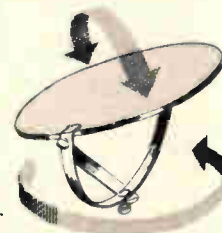
1.



The exclusive variplanular disc inside the cabinet provides a discreet amount of direct frontal energy which is projected from the top of the cabinet; omnidirectional energy from the sides and rear of the cabinet; and reflected sound, mostly from the rear and top of the enclosure. The W80A is therefore not just an "omni" or just a "reflecting" a forward-projecting speaker ... it is all three.

2.

Furthermore, the W80A is a "VARIFLEX", because the variplanular disc is also adjustable. The disc is easily set just once while the system is being installed, without tools or special instruments. There are numerous possibilities, to meet virtually every decor or physical requirement.

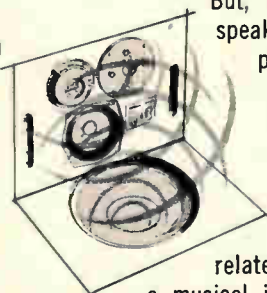


For example, setting the discs outboard widens the stereo sound, if you need to keep the two W80As close together.



Setting the discs toe-in prevents the hole-in-center problem, if the room requires placing the two W80As far apart.

3.



But, unlike most other multi-speaker systems, the bass reproducer does not splatter its sound downward onto the floor, and the mid and treble speakers do not project in other directions. In the W80A, the fundamental tones and related harmonics, which give a musical instrument its identifying timbre and natural, realistic qualities, are reconstituted within a "mixing chamber" which contains the variplanular disc, so that the sounds of musical instruments enter the room as a whole, retaining tonal balance and further abetting stereo perception.

4.

So startlingly effective is the combination of the mixing chamber and its adjustable variplanular disc, that you can freely walk about the room, even sit directly in front of one speaker, and you'll always hear both stereo channels. The music, always stereo, will literally follow you!



The W80A VARIFLEX is a decorator's dream, and happily, practical in cost. At \$317.60 list each, it is more than a match for old fashioned speakers that are a lot bigger (the W80A is only 28" x 17 1/4" x 17" deep) and much more expensive.

For a complete catalog, write to Wharfedale Division, British Industries Co., Dept. V-91 Westbury, N.Y. 11590.

**Wharfedale**  
VARIFLEX SPEAKER SYSTEM

# 10

# Speaker Systems

Acoustic Suspension, Infinite Baffle, Tuned Port, Folded Horn

**T**HE speaker system is probably the most important link in the stereo chain, since the quality of the sound reaching your ears is determined largely by the speaker characteristics, rather than by the amplifier or tuner. Although there is no universal agreement as to what constitutes an "ideal" speaker, there are some speaker systems whose performance is astonishingly close to the stated goals of their designers.

By a "speaker," we usually mean a speaker system—the combination of one or more driver units in a specially designed enclosure which effectively couples their sound to the surrounding environment. Most speaker systems are two-way or three-way designs; *i.e.*, the audible spectrum is divided between speakers especially designed for a particular segment of the audio range. Woofers handle the low end; mid-range speakers of varying sizes, shapes and dimensions handle the speech and voice frequencies; while the tweeter tops off the spectrum with its high-frequency—only—response. There are a few single-speaker systems using one full-range speaker and there are even four- or five-way systems that further divide up the spectrum into smaller increments. The theory behind this being that the narrower the frequency range to be reproduced by each speaker, the better the speaker design can be.

Speaker efficiency is indicated by the amount of amplifier power needed to drive it to a given listening volume. Small, high-quality speaker systems are usually fairly inefficient, requiring considerably more amplifier power than many of the larger systems. There is no correlation between size (or efficiency) and sound quality, but the larger systems usually can deliver more volume than smaller ones, and often without the need for more amplifier power. In any case, the speaker manufacturers' recommendations for the power of the driving amplifier serve as a guide to the required power in average listening situations as well as to the amount of power the speaker can safely handle.

Many compact speaker systems use fully sealed enclosures (so-called "acoustic suspension" types). Others, as well as most larger systems, have a port or opening, critically designed to augment their bass perfor-

mance. Either type is capable of excellent sound and the audible differences between speakers systems are usually due more to the specific design of the drivers and the choice of crossover frequencies than to the basic enclosure system.

Some speaker systems reflect all or most of their sound from a wall, or a portion of the cabinet structure, to achieve a better stereo dispersion of sound throughout the room. These speakers have a different sound quality than ordinary forward-radiating systems, and there is still controversy as to their merits. Your own listening tastes should be your guide.

Whatever type of speaker you choose, there is no substitute for hearing it yourself, preferably in your own home. Published specification curves and figures are of little value in selecting a speaker, since they are difficult to interpret in terms of listening quality. Demonstrations in an audio showroom are better than buying a speaker unheard, but can be misleading since your listening room will have a great effect on the final sound. Listen carefully to music with which you are familiar for any coloration of the sound. Typical colorations include accentuated upper mid-range response, which gives a tiring, but superficial "presence" to the sound; a peak in the upper bass which adds "boom" to male voices; irregular frequency response which imparts harshness to the sound; or lack of extreme high frequencies which dulls the sound of some string, brass, and percussion sounds. Most speakers have some coloration but it is the degree to which it has been eliminated that distinguishes a very good design from an ordinary or even poor one.

A really fine speaker system has an "ease" and smoothness, combined with an effortless low bass response and sharp, well-dispersed but not "edgy" highs, that immediately sets it apart from others. Listen to speakers with these characteristics, even if they are above your price range, and try to find lower-priced units with roughly similar sound qualities. Often, lower-priced speakers within a given manufacturer's line share the design philosophy of his more expensive models.

JULIAN D. HIRSCH

## ACOUSTIC RESEARCH INC.

### AR-1W

Sealed acoustic suspension bookshelf enclosure system with 12" woofer; frequency response 20-1200 Hz at  $\pm 4$  dB (reference not stated); 4 ohms nominal impedance; recommended 25 watts (rms) driving power; dimensions 14" H  $\times$  25" W  $\times$  11 $\frac{1}{2}$ " D; walnut finish; approximate weight 43 lbs; price \$154.00 (other wood finishes available \$132-\$154).

### AR-2ax

Sealed acoustic suspension enclosure system; 3-way bookshelf with 10" woofer, 3 $\frac{1}{2}$ " mid-range, and dome-type  $\frac{3}{4}$ " tweeter; frequency response 43-20,000 Hz at  $\pm 5$  dB (in test chamber); 1400 Hz and 5000 Hz crossover frequencies; mid-range and tweeter level controls; 8 ohms nominal impedance; recommended 20 watts (rms) driving power; dimensions 13 $\frac{1}{2}$ " H  $\times$  24" W  $\times$  11 $\frac{1}{2}$ " D; walnut finish; approximate weight 36 lbs; price \$128 (other wood finishes available \$109-\$128).

### AR-2x

Sealed acoustic suspension enclosure system; 2-way bookshelf with 10" woofer and cone-type 2 $\frac{1}{2}$ " tweeter; 1200 Hz crossover frequency;



tweeter level control; 8 ohms nominal impedance; recommended 20 watts (rms) driving power; less than 4% HD at 60 Hz at 15 watts; dimensions 13 $\frac{1}{2}$ " H  $\times$  24" W  $\times$  11 $\frac{1}{2}$ " D; walnut finish; approximate weight 33 lbs; price \$102.00 (other wood finishes available \$89-\$102).

### AR-3

Sealed acoustic suspension enclosure system; 3-way bookshelf with 12" woofer, 2" mid-range, and dome-type 1 $\frac{3}{8}$ " tweeter; 1000 Hz and 7500 Hz crossover frequencies; mid-range and tweeter level controls; 4 ohms nominal impedance; recommended 25 watts (rms) driving power; less than 3% HD at 60 Hz at 20 watts; dimensions 14" H  $\times$  25" W  $\times$  11 $\frac{1}{2}$ " D; walnut finish; approximate weight 52 lbs; price \$225.00 (other wood finishes available \$203-\$225).

### AR-3a

Sealed acoustic suspension enclosure system; 3-way bookshelf with 12" woofer, 1 $\frac{1}{2}$ " mid-range, and dome-type  $\frac{3}{4}$ " tweeter; frequency response 30-20,000 Hz at  $\pm 5$  dB (in test cham-



ber); 575 Hz and 5000 Hz crossover frequencies; mid-range and tweeter level controls; 4 ohms nominal impedance; recommended 25 watts (rms) driving power; dimensions 14" H  $\times$  25" W  $\times$  11 $\frac{1}{2}$ " D; walnut finish; approximate weight 53 lbs; price \$250.00 (other wood finishes available \$225-\$250).

### AR-4x

Sealed acoustic suspension enclosure system; 2-way bookshelf with 8" woofer and cone-type 2 $\frac{1}{2}$ " tweeter; frequency response 48-20,000 Hz

# 10

## Speaker Systems



at  $\pm 5$  dB (in test chamber); 1200 Hz crossover frequency; tweeter level control; 8 ohms nominal impedance; recommended 15 watts (rms) driving power; less than 6% HD at 60 Hz at 10 watts; dimensions 10" H x 19" W x 9" D; walnut finish; approximate weight 18½ lbs; price \$63.00.

### AR-5

Sealed acoustic suspension enclosure system; 3-way bookshelf with 10" woofer, 1½" mid-range, and dome-type ¾" tweeter; frequency response 43-20,000 Hz at  $\pm 5$  dB (specialized test conditions); 650 Hz and 5000 Hz crossover



frequencies; mid-range and tweeter level controls; 8 ohms nominal impedance; recommended 25 watts (rms) driving power; less than 4% HD at 60 Hz at 15 watts; dimensions 13½" H x 24" W x 11½" D; walnut finish; approximate weight 39 lbs; price \$175.00. (other wood finishes available \$156-\$175).

### AR-6

Sealed acoustic suspension enclosure system; 2-way bookshelf with 8" woofer and cone-type 1½" tweeter; 5000 Hz crossover frequency; tweeter level control; 8 ohms nominal impedance; recommended 20 watts (rms) driving power; dimensions 12" H x 19½" W x 7" D; walnut finish; approximate weight 20 lbs; price \$81.00.

## ACOUSTRON CORP.

### LWE-II

Sealed enclosure system; 3-way floor standing with two 15" woofers, two 6" mid-ranges, and horn-type 5" tweeter; frequency response 20-20,000 Hz at  $\pm 5$  dB (reference not stated); mid-range and tweeter level controls; 4 → 8 ohms nominal impedance; 100 watts (dynamic) maximum input power; dimensions 24" H x 34"



W x 16" D; walnut finish; electronic inverse feedback circuit with "room gain" control; price \$500.00 (kit-\$400.00).

### LWE-1A

Sealed enclosure system; 3-way floor standing with 15" woofer, 6" mid-range, and horn-type 5" tweeter; frequency response 22-20,000 Hz at  $\pm 5$  dB (reference not stated); mid-range and tweeter level controls; 4 ohms nominal impedance; 50 watts (dynamic) maximum input power; dimensions 25" H x 17" W x 12" D; walnut finish; electronic inverse feedback circuit with "room gain" control; price \$290.00 (kit-\$250.00).

### LWE-III

Sealed enclosure system; 3-way floor standing with 12" woofer, 6" mid-range, and 3½" tweeter; frequency response 25-17,000 Hz at  $\pm 5$  dB (reference not stated); mid-range and tweeter level controls; 4 ohms nominal impedance; 40 watts (dynamic) maximum input power; dimensions 22½" H x 15" W x 9" D; walnut finish; electronic inverse feedback circuit with "room gain" control; price \$185.00 (kit-\$160.00).

### LWE-IV

Sealed enclosure system; 4-way floor standing with four 15" woofers, four 8" mid-ranges, four 6" mid-ranges, and two horn-type 5" tweeters; frequency response 16-20,000 Hz at  $\pm 5$  dB (reference not stated); mid-range and tweeter level controls; 4 ohms nominal impedance; 200 watts (dynamic) maximum input power; dimensions 48½" H x 36¼" W x 20" D; walnut finish; electronic inverse feedback circuit with "room gain" control; price \$1,125.00 (kit \$900.00).

### LWE-VI

Sealed enclosure system; 2-way bookshelf with 8" woofer and 3½" tweeter; frequency response 29-15,000 Hz at  $\pm 5$  dB (reference not stated); mid-range and tweeter level controls; 8 ohms nominal impedance; 25 watts (dynamic) maximum input power; dimensions 10" H x 19" W x 9" D; walnut finish; electronic inverse feedback circuit with "room gain" control; price \$94.50 (kit \$74.50).

### LWE-VII

Sealed enclosure system; 2-way floor standing with 10" woofer and 3½" tweeter; frequency response 28-18,000 Hz at  $\pm 5$  dB (reference not stated); mid-range and tweeter level controls; 4 ohms nominal impedance; 35 watts (dynamic) maximum input power; dimensions 22½" H x 15" W x 9½" D; walnut finish; electronic inverse feedback circuit with "room gain" control; price \$135.00 (kit \$110.00).

## ADC

### ADC 303AX

Sealed enclosure system; 2-way bookshelf with 10" woofer and wide dispersion tweeter; frequency response 37-20,000 Hz at  $\pm 3$  dB (average living room); 1500 Hz crossover frequency; 3 dB change mid-range and tweeter level controls; 8 ohms nominal impedance; requires 10 watts driving power; dimensions 23¾" H x 13" W x 11¼" D; oiled walnut finish; removable grille cloth frame; approximate weight 35 lbs; price \$110.00.

### ADC 303B

Sealed enclosure system; 2-way bookshelf with 10" woofer and wide dispersion tweeter; frequency response 40-20,000 Hz at  $\pm 3$  dB (average living room); 8 ohms nominal impedance; requires 10 watts driving power; dimensions 21½" H x 11¾" W x 10" D; oiled walnut finish; approximate weight 33 lbs; price \$90.00.

### ADC 404

Sealed enclosure system; 2-way bookshelf with 6" woofer and wide dispersion tweeter; frequency response 45-20,000 Hz at  $\pm 3$  dB (average living room); 8 ohms nominal impedance; requires 10 watts driving power; dimensions



11⅞" H x 7⅞" W x 8⅞" D; oiled walnut finish; approximate weight 11 lbs; price \$55.00.

### ADC 450A

Sealed enclosure system; 2-way bookshelf with 12" woofer and ¾" super dome tweeter; frequency response 25-30,000 Hz at  $\pm 3$  dB (average living room); modest mid-range and tweeter level adjustments; 6 ohms nominal impedance; requires 10 watts driving power; dimensions 25" H x 14" W x 12⅞" D; oiled walnut finish; approximate weight 50 lbs; price \$165.00.

## ADVENT CORPORATION

### Advent Loudspeaker

Sealed enclosure system; 2-way bookshelf with 10" woofer and impregnated paper cone 2" tweeter; response 20-15,000 Hz at  $\pm 5$  dB (reference not stated); 1000 Hz crossover frequency; tweeter control switch; 8 ohms impedance; requires 20 watts (rms) driving power; 14¼" H x 25⅞" W x 11½" D; walnut; \$116.00.

### Smaller Advent Loudspeaker

Sealed enclosure system; 2-way bookshelf; response 20-15,000 Hz at  $\pm 5$  dB (reference not stated); 4 ohms impedance; requires 15 watts (rms) driving power; 11½" H x 20" W x 9¼" D; vinyl-clad walnut; \$80.00.

## AKAI AMERICA, LTD.

### SW-30

Semi-labyrinth enclosure system; single 4" full-range speaker; response 50-17,000 Hz (reference not stated); 8 ohms impedance; 10 watts (IHF) maximum input power; 14⅞" H x 5⅞" W x 10½" D; aluminum and walnut finish; weight 6 lbs; \$49.95 pair.

### SW-125

Tuned duct port enclosure system; 3-way floor standing with 10" woofer, 5" mid-range, and



horn-type 2" tweeter; response 40-20,000 Hz (reference not stated); 1200 and 5000 Hz crossover frequencies; tweeter control; 8 ohms impedance; 30 watts (dynamic) maximum input power; 21" H x 13⅞" W x 11⅞" D; walnut; weight 24 lbs; \$124.95.

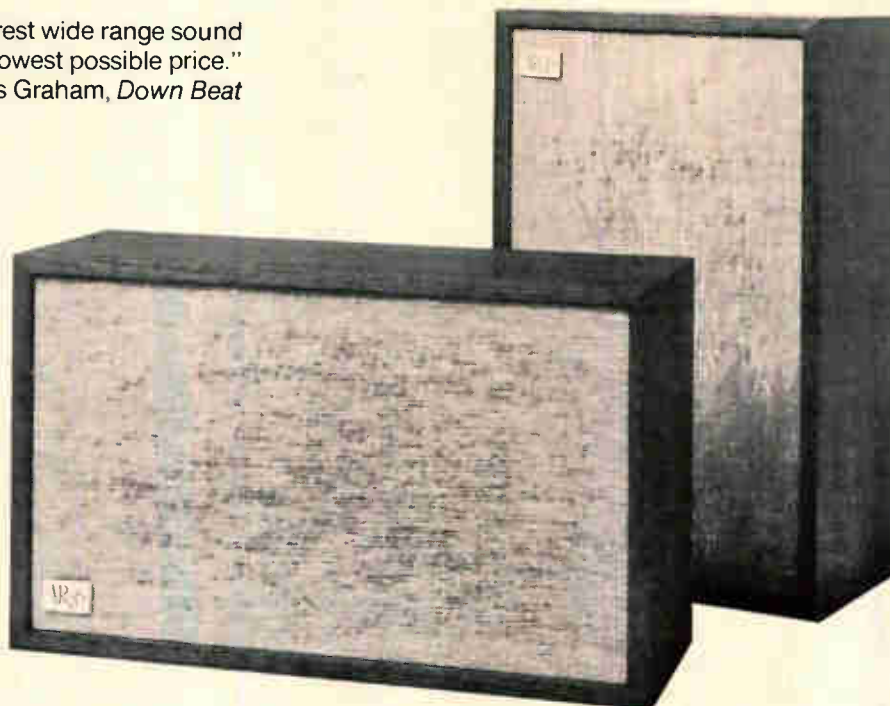
### SW-131A

Sealed enclosure system; 3-way floor standing with 10" woofer, 5" mid-range, and 2½" tweeter; response 40-20,000 Hz (reference not stated); 1200 and 6000 Hz crossover frequencies; tweeter

# "AR has done it again . . .

the best quality and purest wide range sound available today, at the lowest possible price."

Charles Graham, *Down Beat*



"... a really terrific performer. The AR-6 has a clean, uncolored, well-balanced response that delivers some of the most natural musical sound yet heard from anything in its size/price class, and which indeed rivals that heard from some speakers costing significantly more."

*High Fidelity*

"... out-performed a number of considerably larger and far more expensive systems that we have tested in the same way . . . We don't know of many speakers with as good a balance in overall response, and nothing in its size or price class has as good a bass end."

Hirsch-Houck Laboratories, *Stereo Review*

"I am unable to get over the sheer quality represented by the AR-6. To put my wonderment in perspective, perhaps the most telling thing I could add is that I never expected to be saying of any speaker in this price range that it deserves only the finest possible associated components. The AR-6 *does*, and that says a great deal about this product."

Larry Zide, *The American Record Guide*

The price of the AR-6 is \$81 in oiled walnut, \$72 in unfinished pine. Five percent higher in West and Deep South.



## Acoustic Research, Inc.

24 Thorndike Street  
Cambridge, Massachusetts 02141, Dept. SD-10

Please send complete specifications on the AR-6 to

Name \_\_\_\_\_

Address \_\_\_\_\_

er control; 8 ohms impedance; 30 watts (dynamic) maximum input power; 21 $\frac{1}{4}$ " H x 13 $\frac{1}{4}$ " W x 10 $\frac{3}{4}$ " D; walnut; weight 19 lbs; \$89.95.

**SW-155**

Tuned duct port enclosure system; 4-way floor standing with 12" woofer, 5" mid-range, 2 $\frac{1}{2}$ " tweeter, and horn-type 2" super-tweeter; response 25-21,000 Hz (reference not stated); 1200, 5000 and 15,000 Hz crossover frequencies; mid-range and tweeter controls; 8 ohms impedance; 50 watts (IHF) maximum input power; 25" H x 16" W x 11 $\frac{3}{4}$ " D; oiled walnut; weight 39 lbs; \$149.95.

**SW-175**

Sealed enclosure system; 5-way floor standing with 15" woofer, 5 $\frac{1}{4}$ " mid-range, two horn up-



per mid-ranges, 3" cone tweeter, and two dome-type 3 $\frac{1}{2}$ " tweeters; response 20-23,000 Hz (reference not stated); 600, 5000, 10,000, and 15,000 Hz crossover frequencies; mid-range and tweeter controls; 8 ohms impedance; 80 watts (dynamic) maximum input power; 24 $\frac{1}{2}$ " H x 17" W x 11 $\frac{1}{4}$ " D; walnut; weight 49 lbs; \$214.95.

**SW-180A**

Tuned duct port enclosure system; 3-way floor standing with 12" woofer, 3 $\frac{1}{2}$ " x 11 $\frac{1}{2}$ " horn mid-range, and two horn-type 2" tweeters; response 23-22,000 Hz (reference not stated); 700 and 7000 Hz crossover frequencies; mid-range and tweeter controls on front panel; 8 ohms impedance; 60 watts (rms) maximum input power; 30 $\frac{3}{8}$ " H x 18 $\frac{3}{4}$ " W x 15 $\frac{3}{4}$ " D; oiled walnut; weight 70 lbs; \$269.95.

**ALLIED RADIO SHACK****Allied Nova 7**

Sealed enclosure system; 2-way bookshelf with 10" woofer and two 3 $\frac{1}{2}$ " tweeters; response 20-20,000 Hz (reference not stated); 8 ohms impedance; 60 watts (rms) maximum input power; 12 $\frac{1}{2}$ " H x 22 $\frac{1}{8}$ " W x 11" D; oiled walnut; \$99.95.

**Electrostat 2a**

Sealed enclosure system; 2-way floor standing with 8" woofer, mid-range, and 4-element electrostatic tweeter; response 45-25,000 Hz (reference not stated); tweeter control; 8 ohms impedance; requires 12 watts (rms) driving power; 22 $\frac{1}{2}$ " H x 13 $\frac{1}{2}$ " W x 12" D; oiled walnut; weight 25 lbs; \$69.95.

**Optimus 1**

Sealed enclosure system; 2-way bookshelf; response 20-25,000 Hz (reference not stated); 1000 Hz crossover frequency; tweeter control; 8 ohms impedance, 12" H x 23" W x 11 $\frac{1}{2}$ " D; walnut; \$79.95.

**Optimus 4**

Sealed enclosure system; 2-way floor standing with two tweeters; response 20-20,000 Hz (reference not stated); 8 ohms impedance; requires 10 watts (rms) driving power; 19" H x 14 $\frac{1}{2}$ " W x 14 $\frac{1}{2}$ " D; black vinyl covered cushion on top surface; weight 27 lbs; \$89.95.

**Allied Nova Omni**

Omni-directional enclosure system with 8" woofer; response 45-20,000 Hz (reference not stated); 8 ohms impedance; 50 watts (rms) maximum input power; 19" H x 11 $\frac{3}{4}$ " W x 11 $\frac{3}{4}$ " D; oiled walnut \$69.95.

**Optimus 5**

Sealed enclosure system; 2-way floor standing with 12" woofer, two mid-ranges, and one 3" tweeter; response 20-20,000 Hz (reference not stated); mid-range and tweeter controls; 8 ohms impedance; 25" H x 14" W x 11 $\frac{1}{2}$ " D; oiled walnut; weight 35 lbs; \$99.95.

**Optimus 6**

Tuned duct port enclosure system; 2-way floor standing with 12" woofer and two 4 $\frac{1}{2}$ " tweeters; response 20-20,000 Hz (reference not stated); 8 ohms impedance; 23 $\frac{3}{4}$ " H x 19" diameter; walnut; weight 37 lbs; \$119.95.

**Realistic Nova 9**

Infinite baffle enclosure system; 3-way floor standing with 15" woofer, 4" mid-range, and dome-type tweeter; response 20-20,000 Hz (reference not stated); 300 Hz and 3000 Hz crossover frequencies; 8 ohms impedance; 27" H x 20 $\frac{1}{2}$ " W x 13 $\frac{1}{2}$ " D; oiled walnut \$159.95.

**ALTEC LANSING****Barcelona (2873A)**

Infinite baffle enclosure system; components of "Voice of the Theatre" A7 system with special



electronic crossover at 500 Hz (60 W power amp to bass and 30 W power amp to horn); dimensions 29 $\frac{3}{4}$ " H x 38 $\frac{1}{2}$ " W x 24" D; walnut finish; price \$750.00.

**Bolero (890C)**

Sealed enclosure system; 2-way bookshelf with 10" woofer and 10" passive bass phase inverter



tweeter; frequency response 40-20,000 Hz (reference not stated); 2000 Hz crossover frequency; tweeter level control; 8 ohms nominal impedance; 50 watts (dynamic) maximum input power; dimensions 14 $\frac{3}{4}$ " H x 25 $\frac{3}{4}$ " W x 12" D; price \$179.00.

**Corona (893A)**

Infinite baffle enclosure system; 2-way bookshelf with 10" woofer and 3" tweeter; frequency response 50-18,000 Hz (reference not stated); 2500 Hz crossover frequency; 8 ohms nominal impedance; 45 watts (dynamic) maximum input power; dimensions 12 $\frac{1}{4}$ " H x 22" W x 9 $\frac{1}{2}$ " D; walnut finish; price \$89.50.

**Flamenco (848A)**

Bass reflex enclosure system; 2-way floor standing with 15" woofer and Sectoral horn mid-range/tweeter; frequency response 30-20,000 Hz (reference not stated); 800 Hz crossover frequency; horn level control; 8 ohms nominal impedance; 50 watts (dynamic) maximum input power; dimensions 27 $\frac{3}{4}$ " H x 28 $\frac{3}{8}$ " W x 27 $\frac{3}{4}$ " D; oak finish; simulated wrought iron grille; price \$355.00.

**Granada (2875A)**

Infinite baffle enclosure system; similar to Barcelona, except crossover frequency at 800 Hz and slightly smaller horn; dimensions 29 $\frac{3}{4}$ " H x 27 $\frac{1}{2}$ " W x 24" D; price \$650.00.

**Madera (892A)**

Infinite baffle enclosure system; 2-way bookshelf with 10" woofer and compression-driven tweeter; frequency response 45-18,000 Hz (reference not stated); 2500 Hz crossover frequency; 8 ohms nominal impedance; 50 watts (dynamic) maximum input power; dimensions 13" H x 23 $\frac{3}{4}$ " W x 11 $\frac{3}{4}$ " D; walnut; \$145.00.

**Milano (871AL/R)**

Bass reflex enclosure system; 2-way floor standing with 15" woofer and Sectoral horn



mid-range/tweeter; frequency response 30-20,000 Hz (reference not stated); 800 Hz crossover frequency; horn level control; 8 ohms nominal impedance; 50 watts (dynamic) maximum input power; dimensions 29 $\frac{1}{4}$ " H x 27 $\frac{1}{2}$ " W x 19 $\frac{1}{4}$ " D; pecan finish; price \$395.00.

**Santana (879A)**

Sealed enclosure system; 2-way floor standing with 15" woofer and 3" tweeter; 8 ohms nominal impedance; 45 watts (dynamic) maximum input power; oiled walnut finish; composition slate top side; price \$199.00.

**Valencia (846A)**

Bass reflex enclosure system; 2-way floor standing with 15" woofer and Sectoral horn

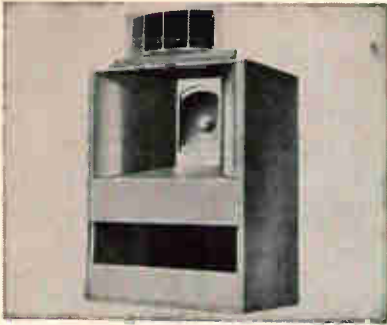


mid-range/tweeter; frequency response 30-22,000 Hz (reference not stated); 800 Hz crossover frequency; horn level control; 8 ohms nominal impedance; 30 watts (dynamic) maximum input power; dimensions 29 $\frac{3}{4}$ " H x 27 $\frac{1}{2}$ " W x 19" D; walnut finish; price \$355.00.

**Voice of the Theatre (A7-8)**

Bass reflex enclosure system; 2-way floor





standing with 15" woofer and Sectoral horn mid-range/tweeter; frequency response 30-20,000 Hz (reference not stated); 800 Hz crossover frequency; horn level control; 8 ohms nominal impedance; 50 watts (dynamic) maximum input power; dimensions 52 1/4" H x 30" W x 24" D; unfinished gray enclosure; price \$368.00

#### Voice of the Theatre (A7-500-8)

Similar to Model A7-8, but with larger Sectoral horn; 500 Hz crossover frequency; dimensions 54 1/4" H x 30" W x 24" D; gray; \$405.00.

#### Voice of the Theatre (A7-500W-II)

Similar to Model A7-500-8, but enclosed in 44" H x 32" W x 24" D walnut enclosure; price \$551.00.

### AUDIO RESEARCH CORP.

#### Magneplanar

Electrostatic system; floor standing; response 40-20,000 Hz (reference not stated); 8 ohms impedance; 48" H x 72" W x 1" D (hinged every 16"); additional details not available at press time; \$1200 (pair).

### AZTEC SOUND CORPORATION

#### duLane

Sealed enclosure system; 3-way bookshelf with 8" woofer, 8" mid-range, and 3" tweeter; frequency response 30-19,000 Hz (reference not stated); 900 Hz and 5000 Hz crossover frequencies; 8 ohms nominal impedance; 50 watts (IHF) maximum input power; dimensions 13 1/2" H x 23" W x 9 3/8" D; price \$83.95.

#### Gaugin IV

Sealed enclosure system; 3-way floor standing with 12" woofer, 3" x 9" mid-range, and horn-type 2" x 6" tweeter; frequency response 20-22,000 Hz (reference not stated); 800 Hz and 2000 Hz crossover frequencies; tweeter level control; 8 ohms nominal impedance; requires 10 watts (IHF) driving power; 65 watts (IHF) maximum input power; dimensions 27" H x 22" W x 15 7/8" D; oiled walnut finish; price \$229.95.

#### Minuet

Sealed enclosure system; 2-way bookshelf with 8" woofer and 3" tweeter; frequency response 30-18,000 Hz (reference not stated); 4000 Hz crossover frequency; 8 ohms nominal impedance; 10 watts (IHF) maximum input power; dimensions 11" H x 18" W x 9 3/8" D; oiled walnut finish; price \$62.95.

#### Picasso

Sealed enclosure system; 3-way bookshelf with 10" woofer, 6" mid-range, and horn-type 2" x 6" tweeter; frequency response 27-20,000 Hz (reference not stated); 700 Hz and 4000 Hz crossover frequencies; tweeter level control; 8 ohms nominal impedance; 50 watts (IHF) maximum input power; dimensions 13 1/2" H x 27 7/8" W x 11 3/4" D; oiled walnut finish; features Density Loading®; price \$109.95.

#### Rembrandt II

Sealed enclosure system; 3-way floor standing with 10" woofer, 3" x 9" mid-range, and horn-1972 EDITION

type 2" x 6" tweeter; frequency response 25-22,000 Hz (reference not stated); 600 Hz and 2500 Hz crossover frequencies; tweeter level control; 8 ohms nominal impedance; requires 15 watts (IHF) driving power; 55 watts (IHF) maximum input power; dimensions 25" H x 20 1/2" W x 14" D; oiled walnut finish; features Density Loading®; price \$169.95.

#### Sombras Model 101-1

Sealed enclosure system; 4-way floor standing with two 10" woofers, two 6 1/2" mid-range drivers, one 600 Hz horn, and one 2000 Hz tweeter; frequency response 18-22,000 Hz (reference not stated); 500 Hz, 900 Hz and 2000 Hz crossover frequencies; 8 ohms nominal impedance; requires 15 watts (IHF) driving power; 60 watts (IHF) maximum input power; dimensions 28" H x 36 1/2" W x 21" D; Spanish Colonial finish; price \$429.95.

#### Sombras Model 101-2

Similar to Gaugin IV, but in Spanish Colonial cabinet; price \$279.95.

#### Vega

Sealed enclosure system; 2-way bookshelf with 6 1/2" woofer and 3" tweeter; frequency response 40-18,000 Hz (reference not stated); 4000 Hz crossover frequency; 8 ohms nominal impedance; 50 watts (IHF) maximum input power; dimensions 10" H x 15" W x 7 7/8" D; features Density Loading®; price \$42.95.

### BANG & OLUFSEN OF AMERICA

#### Beovox 2700

Sealed enclosure system; 2-way bookshelf with 7" woofer and dome-type 1 1/2" tweeter; response 45-20,000 Hz (reference not stated); 4 ohms impedance; 30 watts (dynamic) maximum input power; 8 1/8" H x 16 7/8" W x 8 1/8" D; weight 12 lbs; \$80.00.

#### Beovox 4700

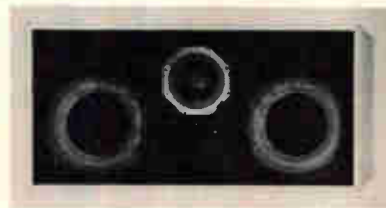
Sealed enclosure system; 3-way bookshelf with two 7 1/2" woofers, 5" mid-range, and dome-type



1 1/2" tweeter; response 35-20,000 Hz (reference not stated); 4 ohms impedance; 80 watts (dynamic) maximum input power; 11 7/8" H x 22 7/8" W x 11 7/8" D; weight 28 lbs; \$160.00.

#### Beovox 5700

Sealed enclosure system; 3-way floor standing with 10" woofer, 2 1/2" mid-range, and dome-



type 3/4" tweeter; response 25-20,000 Hz (reference not stated); 4 → 8 ohms impedance; 100 watts (dynamic) maximum input power; 26" H x 14 3/8" W x 11 1/8" D; weight 49 1/2 lbs; \$260.00

### BOGEN DIV. (Lear Siegler, Inc.)

#### LS20A

Sealed enclosure system; 2-way bookshelf with

# THE ADC 303AX GIVES YOU WHAT ANY OTHER ADC SPEAKER GIVES YOU...



... the cleanest, most natural sound for your dollars. Indeed, we believe you will have difficulty finding a speaker at any price which is significantly superior for use under domestic conditions.

This combination of economy and excellence is achieved by the hyper-critical matching of the separate components that go to make up the 303AX System. The woofer, tweeter, crossover, cabinet, even the grill cloth, have been specifically developed to compliment each other to produce the finest possible performance for a system of this size.

Gimmicks have been eschewed. Instead, you have very smooth response, wide dispersion and low distortion — all essential if you are to be conscious of the music rather than the speaker.

#### SPECIFICATIONS

Nominal Impedance . . . 8 ohms

Response . . . 37Hz to 20kHz ± 3dB in average listening room

High Frequency Driver . . . 2 1/2" viscous impregnated cone with 1 1/2" Dia. effective radiating surface.

Low Frequency Driver . . . 10" viscous coated cone with a high compliance suspension and long voice coil.

Midrange Switch . . . Approx. 3dB change over the band from 200Hz to 2kHz.

Treble Switch . . . Approx. 3dB change over the band from 2kHz to 20kHz.

Enclosure . . . Oiled walnut air-tight cabinet 23 3/4" H x 13" W x 11 3/4" D. Filled with controlled sound absorbent material. Shipping weight approx. 37 lbs.

Price . . . \$110.00 suggested retail (5% higher in West).

Write for further details about this and other ADC speakers from \$50.00 to \$160.00.



PICKETT DISTRICT ROAD,  
NEW MILFORD, CONNECTICUT 06776

# AUDIO FOR AUDIOPHILES

CIRCLE NO. 6 ON READER SERVICE CARD

# 10

## Speaker Systems

8" woofer and 2 1/2" tweeter; frequency response 30-20,000 Hz (reference not stated); tweeter level control; 8 ohms nominal impedance; 40 watts (dynamic) maximum input power; dimensions 10 1/2" H x 19" W x 9" D; oiled walnut finish; price \$119.00 (pair).

### LS30A

Sealed enclosure system; 3-way floor standing with 10" woofer, 5" mid-range, and 3" tweeter; frequency response 28-20,000 Hz (reference not stated); mid-range and tweeter level controls; 8 ohms nominal impedance; 50 watts (dynamic) maximum input power; dimensions 22" H x 14" W x 11" D; oiled walnut finish; price \$199.90 (pair).

### LS50 ("Row 10")

Sealed enclosure system; 3-way floor standing with 12" woofer, 2" dome mid-range, and 1" dome-type tweeter; frequency response 25-20,000 Hz (reference not stated); mid-range and tweeter level controls; 8 ohms nominal impedance; 60 watts (dynamic) maximum input power; dimensions (two separate stacked enclosures) 30" H x 18" W x 13" D; oiled walnut finish; price \$400.000 (pair).

## THE BOSE CORPORATION

### The Bose 501

Special Direct/Reflecting design system with woofer and two tweeters balanced for direct



radiated and reflected sound from wall behind speaker system; 4 ohms nominal impedance; requires 20 watts (rms) driving power; dimensions 24" H x 14 1/2" W x 14 1/2" D; walnut finish; price \$124.80.

### The Bose 901

Special Direct/Reflecting design system with nine full-range speakers arranged to provide 11% direct radiated and 89% reflected sound from wall behind speaker system; Must be 117-volt a.c. powered to solid-state equalizer net-



work; front panel controls to permit adjustment to room acoustics; 8 ohms nominal impedance; each unit 12 3/4" H x 20 1/2" W x 12 7/8" D; walnut facings with white grille cloth; pedestals optional extra for \$39.90 (pair); optional ebony-brown grille less \$29.00; price \$520.00.

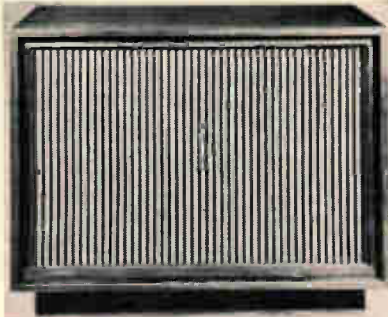
## THE R.T. BOZAK MFG. CO.

### Bard/B-1000

Infinite baffle outdoor system with single full-range 8" speaker; frequency response 50-10,000 (reference not stated); 8 ohms nominal impedance; requires 15 watts (rms) driving power; dimensions 21" H x 18" diameter x 12" D; gold and eggshell white finish; weather-proof cone; approximate weight 22 lbs; price \$98.45.

### Century/B-305

Infinite baffle enclosure system; 3-way floor standing with two 12" woofers, 6 1/2" mid-range,



and two twin-cone tweeters; frequency response 35-20,000 Hz (reference not stated); 800 Hz and 2500 Hz crossover frequencies; 16 ohms nominal impedance; requires 30 watts (rms) driving power; dimensions 27 1/2" H x 24" W x 20" D; walnut or cherry finish; price \$467.50.

### Concerto II/B-312

Infinite baffle enclosure system; 2-way bookshelf with 12" woofer and centrally-mounted twin-cone tweeter; frequency response 45-16,000 Hz (reference not stated); 2500 Hz crossover frequency; 8 ohms nominal impedance; requires 20 watts (rms) driving power; dimensions 17 1/4" H x 24 1/2" W x 12 1/2" D; walnut matte finish; approximate weight 60 lbs; price \$175.50.

### Concerto III/B-313

Infinite baffle enclosure system; 3-way bookshelf with 12" woofer, 6 1/2" mid-range, and twin-cone tweeter; frequency response 45-16,000 Hz (reference not stated); 800 Hz and 2500 Hz crossover frequencies; 8 ohms nominal impedance; requires 20 watts (rms) driving power; dimensions 17 1/4" H x 24 1/2" W x 12 1/2" D; walnut matte finish; approximate weight 70 lbs; price \$258.00.

### Concerto IV/B-300

Infinite baffle enclosure system; 2-way floor standing with 12" woofer and centrally-mounted twin-cone tweeter; frequency response 40-20,000 Hz (reference not stated); 2500 Hz crossover frequency; 8 ohms nominal impedance; requires 20 watts (rms) driving power; dimensions 30" H x 24" W x 18 1/2" D; cherry finish; available in several other wood finishes and cabinet styles; price \$257.95.

### Concerto V/B-302A

Similar to Concerto IV, but with addition of 6 1/2" mid-range speaker; cherry finish; available in many other wood finishes and styles; price \$354.75.

### Concert Grand/B-310

Infinite baffle enclosure system; 3-way floor standing with four 12" woofers, two 6 1/2" mid-ranges, and four twin-cone tweeters; frequency response 28-20,000 Hz (reference not stated); 400 Hz and 2500 Hz crossover frequencies; tweeter level control; 8 ohms nominal imped-

ance; 60 watts (rms) maximum input power; dimensions 52" H x 36" W x 19" D; available in several finishes and styles; price \$935.00.

### Symphony No. 1/B-4000

Infinite baffle enclosure system; 3-way floor standing with two 12" woofers, 6 1/2" mid-range, and eight tweeters; frequency response 35-20,000 Hz; (reference not stated); 400 Hz and 1500 Hz crossover frequencies; tweeter level control; 8 ohms nominal impedance; requires 30 watts (rms) driving power; dimensions 44" H x 28" W x 16" D; walnut Moorish finish (other styles available); price \$654.50.

## BSR McDONALD

(BSR (USA) Ltd.)

### Model SS-2

Sealed enclosure system; 2-way bookshelf with 6" woofer and 2 1/2" tweeter; response 20-20,000 Hz (reference not stated); 8" H x 14" W x 7" D; oiled walnut; \$70.00 (pair).

## CONCEPT PLUS

### TRS-17

Infinite baffle enclosure system; 2-way bookshelf with 6 1/2" woofer and 3" tweeter; response 50-17,500 Hz (reference not stated); 8 ohms impedance; 14" H x 11" W x 7" D; oiled walnut; solid-state FM wired wireless (feeds 117-volt a.c. house wiring) transmitter coupled to amplifier; FM wired wireless receiver at each speaker with bass and treble level control; \$129.95.

## DYNACO, INC.

### A-25

Sealed enclosure system; 2-way bookshelf with 10" woofer and soft dome tweeter; 1500 Hz crossover frequency; 5-position tweeter level control; 8 ohms nominal impedance; 60 watts (rms) maximum input power; less than 3% HD at 50 Hz at 25 watts; dimensions 11 1/2" H x 20" W x 10" D; oiled walnut finish; features aperiodic enclosure design; approximate weight 22 lbs; price \$79.95.

### A-50

Sealed enclosure system; 2-way floor standing with two 10" woofers and 2" tweeter; 1000 Hz crossover frequency; 5-position tweeter level control; 8 ohms nominal impedance; requires 25 watts (rms) driving power; 75 watts (rms) maximum input power; dimensions 28" H x 21 1/2" W x 10" D; oiled walnut finish; features aperiodic enclosure design; approximate weight 47 lbs; price \$179.95.

## EASTMAN SOUND MFG. CO., INC.

### Martin Crescendo

Sealed infinite baffle enclosure system; 3-way bookshelf with 12" woofer, 3 1/2" mid-range, and wide dispersion 2 1/2" tweeter; frequency response 30-18,000 Hz (reference not stated); mid-range and tweeter level controls. 8 ohms nominal impedance; dimensions 14 1/2" H x 25 1/2" W x 12" D; walnut formica finish; approximate weight 45 lbs; price \$169.95.

### Martin Laboratory MK II

Sealed infinite baffle enclosure system; 3-way bookshelf with 10" woofer, 3 1/2" mid-range, and wide dispersion 2 1/2" tweeter; frequency response 35-18,000 Hz (reference not stated); mid-range and tweeter level controls; 8 ohms nominal impedance; 50 watts (dynamic) maximum input power; dimensions 12 1/2" H x 21 1/2" W x 10" D; walnut formica finish; approximate weight 30 lbs; price \$119.95.

### Martin Magnificat

Sealed infinite baffle enclosure system; 3-way floor standing with two 12" woofers, 6" mid-

range, and two wide dispersion 2 1/2" tweeters; frequency response 28-20,000 Hz (reference not stated); mid-range and tweeter level controls; 4 ohms nominal impedance; 80 watts (dynamic) maximum input power; dimensions 37 1/2" H x 18" W x 14 3/4" D; walnut formica finish; approximate weight 90 lbs; price \$319.95.

#### Martin Micro-Max

Sealed enclosure system; 2-way bookshelf with 8" woofer and wide dispersion 3" tweeter; response not stated; 8 ohms nominal impedance; dimensions 10 3/4" H x 18" W x 9 3/4" D; walnut formica finish; price \$59.50.

#### Martin Prismatic

Special enclosure system; 4-way floor standing with 9" woofer, 6 1/2" mid-bass, 3 1/2" mid-range,



and two wide dispersion 2 1/2" tweeters; frequency response 28-18,000 Hz (reference not stated); mid-range and tweeter level controls; 6 ohms nominal impedance; 60 watts (dynamic) maximum input power; dimensions 25" H x 16 1/4" W x 16 1/4" D; walnut formica finish; features reflecting from wall sound dispersion with acoustic lens; approximate weight 75 lbs; price \$300.00.

#### Martin Signature

Sealed infinite baffle enclosure system; 2-way bookshelf with 6" woofer and wide dispersion 4" tweeter; frequency response 40-18,000 Hz (reference not stated); tweeter level control; 8 ohms nominal impedance; 40 watts (dynamic) maximum input power; dimensions 8 3/8" H x 12" W x 9" D; walnut formica finish; approximate weight 15 lbs; price \$89.95 (for a pair).

#### Martin Spectrum Slope

Sealed infinite baffle enclosure system; 2-way bookshelf with two 8" woofers and two wide dispersion 2 1/2" tweeters; frequency response 35-18,000 Hz (reference not stated); 8 ohms nominal impedance; 50 watts (dynamic) maximum input power; dimensions 12 1/2" H x 21 1/2" W x 10" D; walnut formica finish; approximate weight 33 lbs; price \$149.95.

#### Martin Super Spectrum

Sealed infinite baffle enclosure system; 3-way bookshelf with two 8" woofers, 3 1/2" mid-range, and wide dispersion 2 1/2" tweeter; frequency response 30-18,000 Hz (reference not stated); mid-range and tweeter level controls; 4 ohms nominal impedance; 60 watts (dynamic) maximum input power; dimensions 12 1/2" H x 21 1/2" W x 10" D; walnut formica finish; approximate weight 35 lbs; price \$199.95.

#### Martin 840 "Sound Tower"

Sealed enclosure system; 3-way column with four 8" woofers, two 4" mid-range speakers, and two flare dome 2" tweeters; frequency response 28-20,000 Hz (reference not stated); mid-range and tweeter level controls; 100 watts (dynamic) maximum input power; dimensions 52" H x 16 1/4" W x 7 3/4" D; walnut formica finish; approximate weight 75 lbs; price \$350.00.

1972 EDITION

# The best of the past wasn't good enough for Bang & Olufsen

Most top quality amplifiers and receivers offer you less than 1% harmonic distortion, but when the signal reaches your speakers, there is trouble. Many speakers produce up to 5% distortion. Some popular models run as high as 15%! At Bang & Olufsen, we don't stand for that type of performance. So, the B & O Beovox Model 5700 now available in the United States offers you performance as distortion-free as the rest of your system . . . less than 1%. Here's how this remarkable accomplishment was achieved.

#### B & O 5700 Employs World's Largest Dome Speaker

In a joint effort with the famous engineers of Rola Celestion of England, Bang & Olufsen developed the world's largest dome speaker for use as a midrange unit. This 2 1/4" soft dome is employed from 5,000 Hz all the way down to 500 Hz. The unique aspect of such extended response in the midrange allows use of a bass system that need not work over 500 Hz. Since cone break-up can occur in the high

range of woofer response, this distortion is eliminated.

#### ABR System Provides Bass Fidelity, Compactness

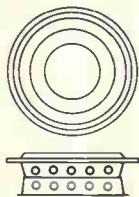
The 5700 contains one active 10" woofer and a passive 10" Auxiliary Bass Radiator that amplify each other for very low distortion and improved transient response. The passive ABR permits tuning of the cabinet to a lower natural resonance in a small space.

The passive unit will continue to oscillate further down the frequency spectrum than the woofer itself. This means that we can reproduce lower frequencies. Distortion, which is normally most pronounced around the bass resonance, is reduced to less than 1% because the woofer is now required to oscillate at only half the amplitude.

The new Beovox 5700 by Bang & Olufsen is a most unusual unit designed for those who appreciate the purity of uncolored sound. It's just one of four new models of B & O speakers. Ask your dealer for a demonstration.

#### BEOVOX 5700

Brazilian Rosewood or Burmese Teak



## Bang & Olufsen of America, Inc.

525 East Montrose Ave., Wood Dale, Illinois • In Canada: Musimart Ltd.

CIRCLE NO. 10 ON READER SERVICE CARD

103

# In 1968 almost every stereo enthusiast knew:

1

You couldn't reproduce bass notes through small speakers.

2

All the sound should come from the front of the speaker and none should be directed rearward toward the wall.

3

A speaker should never have associated electronics such as an active equalizer.

4

All good speakers should have crossovers, woofers and tweeters.

5

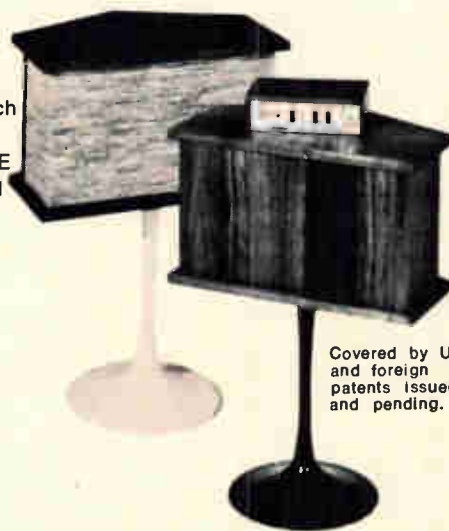
All speakers should be designed to give flat frequency response on axis.

## By 1971 almost every stereo enthusiast has heard the BOSE 901.

A speaker which violates every one of the concepts above. Born out of 12 years of university research,\* the 901 has become *the most highly reviewed speaker, regardless of size or price.*

Today we have a theoretical basis that explains why these concepts limit the performance of conventional speakers. But no theory can tell you how much better a new design will sound. To appreciate this, ask your dealer for an A-B comparison of the BOSE 901 with the largest and most expensive speakers he carries.

\*For those interested in the 12 years of research that led to the design of the 901, copies of the Audio Engineering Society paper "ON THE DESIGN, MEASUREMENT AND EVALUATION OF LOUDSPEAKERS," by Dr. A. G. Bose, are available from BOSE Corporation for fifty cents.

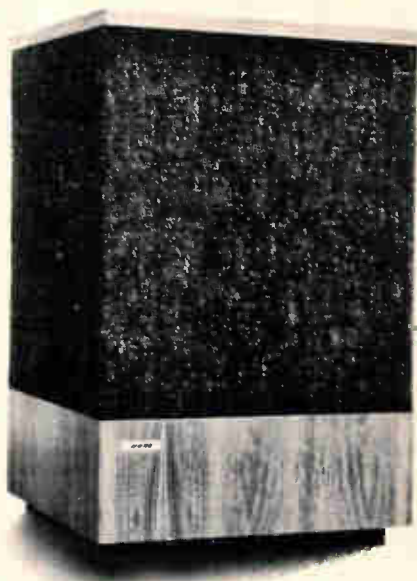


Covered by U.S.  
and foreign  
patents issued  
and pending.

You can hear the difference now.

# **BOSE**

Natick, Mass. 01760



## Ask your franchised dealer\* to A-B the BOSE 501 with any speaker he carries that uses woofers, tweeters and crossovers.

There is an important reason why we ask you to make this test. There are inherent limitations of performance in the use of a woofer, a tweeter and a crossover—limitations covered in detail in earlier issues. The bypassing of these limitations played a large part in the advances which have made the BOSE 901 the most highly reviewed speaker, regardless of size or price.

We set out to design a lower priced speaker which would preserve as much as possible of the performance of the 901. Most important, we were able to design into the 501 much of the 901's great advance in spatial properties. The BOSE 501 is the second DIRECT/REFLECTING® speaker system.

But it became evident that there was no way to keep the advantages of multiple small full-range drivers and equalization. The cost problem was too great. We were forced to accept the woofer-tweeter-crossover combination as the only feasible compromise and set out to achieve the fullest possible realization of this design approach.

Our engineers designed a unique woofer with an unusually long voice coil which provides tight control of bass transients. They developed a new and different approach to crossing over the outputs of the woofer and the two tweeters. In the process they became convinced that \$125 is about the limiting price for improving the performance of a speaker containing woofers, tweeters and crossovers.

The design goal of the 501 was to outperform any other woofer-tweeter-crossover speaker. You be the judge. If we have succeeded, the results will be obvious to you when you make the comparison.

\*Literature sent in answer to your request will include a list of franchised BOSE dealers in your area who are capable of demonstrating BOSE speakers to their full performance.

BOSE 501 DIRECT/REFLECTING® Speaker System  
\$124.80 ea. Patents applied for.

NATICK, MA. 01760

**BOSE**®

**You can hear the difference now.**

## ELECTROHOME LTD.

## SC 508

Tuned duct port enclosure system; 3-way floor standing with 10" woofer, 6" mid-range, and horn-type tweeter; response 40-18,000 Hz at  $\pm 3.0$  dB (average living room); \$149.50.

## SC 510

Tuned duct port enclosure system; 3-way floor standing with 12" woofer, 8" mid-range, and



four 3 1/2" tweeters; response 30-18,000 Hz at  $\pm 3.0$  dB (average living room); \$199.50.

## ELECTRO-VOICE, INC.

## Eight-A

Sealed enclosure system; 2-way bookshelf with 6" woofer and 2 1/2" tweeter; frequency response 60-20,000 Hz (reference not stated); 2000 Hz crossover frequency; tweeter level control; 8 ohms nominal impedance; 50 watts (peak) maximum input power; dimensions 8 1/4" H x 15 1/4" W x 6 1/2" D; walnut finish; approximate weight 10 lbs; price \$49.95.

## Eleven-A

Bass reflex bookshelf enclosure system with single speaker 6" dual-cone; 8 ohms nominal impedance; 25 watts (peak) maximum input power; dimensions 8 1/8" H x 15 1/8" W x 6 3/4" D; walnut veneer finish; approximate weight 9 lbs; price \$34.95.

## Five-C

Sealed enclosure system; 2-way bookshelf with 10" woofer and 2 1/2" tweeter; frequency response 30-20,000 Hz (reference not stated); tweeter level control; 8 ohms nominal impedance; 60 watts (peak) maximum input power; dimensions 12 1/4" H x 21 3/4" W x 10 3/8" D; oiled walnut finish; approximate weight 22 lbs; price \$109.95.

## Four-A

Sealed enclosure system; 3-way bookshelf with 12" woofer, diffraction horn mid-range, and 2 1/2" tweeter; frequency response 30-20,000 Hz (reference not stated); 400 Hz and 2500 Hz crossover frequencies; mid-range and tweeter level controls; 8 ohms nominal impedance; 70 watts (peak) maximum input power; dimensions 14" H x 25" W x 13 1/2" D; oiled walnut finish; approximate weight 51 lbs; price \$199.95.

## Musicaster IA

Bass reflex enclosure system with single 12" full-range dual-cone speaker; frequency response 80-10,000 Hz (reference not stated);

8 ohms nominal impedance; 60 watts (peak) maximum input power; dimensions 21 1/2" H x 21 1/2" W x 8 1/2" D; approximate weight 20 lbs; price \$72.50.

## Musicaster IIA

Similar to Musicaster IA, but with tweeter to extend range to 16,000 Hz; price \$91.00

## Nine

Sealed enclosure system; 3-way bookshelf with 10" woofer, 5" mid-range, and 3 1/2" tweeter; frequency response 30-20,000 Hz (reference not stated); tweeter level control; 8 ohms nominal impedance; 60 watts (peak) maximum input power; dimensions 13 1/2" H x 24" W x 11 1/2" D; oiled walnut finish; approximate weight 40 lbs; price \$149.95.

## Patrician 800

Semi-folded horn enclosure system; 4-way floor standing with 30" woofer, low mid-range 12" driver, diffraction horn mid-range, and horn-type tweeter; frequency response 15-23,000 Hz (reference not stated); 100 Hz, 800 Hz and 5000 Hz crossover frequencies; mid-range and tweeter level controls; 16 ohms nominal impedance; 140 watts (peak) maximum input power; dimensions 51" H x 33" W x 27 3/4" D; walnut, mahogany or cherry finish; traditional or contemporary styling; approximate weight 315 lbs; price \$1400.00.

## Sentry 1A

Bass reflex enclosure system; 2-way wall-mounting with 12" woofer and diffraction horn mid-range/tweeter; frequency response 30-20,000 Hz (reference not stated); 16 ohms nominal impedance; dimensions 37" H x 21 3/4" W x 17" D; walnut finish (primarily for broadcast studios—a walnut finish floor model measuring 32" H x 20" W x 13" D is available at same price, as "Sentry 11A"); price \$195.00.

## Seven-B

Sealed enclosure system; 2-way bookshelf with 8" woofer and 3 1/2" tweeter; frequency response 50-20,000 Hz (reference not stated); 2000 Hz crossover frequency; tweeter level control; 8 ohms nominal impedance; 50 watts (peak) maximum input power; dimensions 10" H x 19" W x 9" D; walnut finish; price \$64.95.

## Sonocaster I

Sealed outdoor enclosure system with single dual cone 8" speaker; frequency response 70-



13,000 Hz (reference not stated); 8 ohms nominal impedance; 30 watts (peak) maximum input power; dimensions 16 3/4" H x 17" W x 8" D; steel gray finish; approximate weight 10 lbs; price \$24.95.

## EMI

(Benjamin Electronic Sound Corp.)

## Model 62

Two-way bookshelf with 10" x 6 1/2" woofer and 3 3/8" tweeter; response 60-20,000 Hz (reference not stated); tweeter control; 8 ohms impedance; 13" H x 20 1/2" W x 10" D; walnut; \$79.95.

## Model 92

Two-way bookshelf with 13 1/2" x 8" woofer and

cone-type 3 3/8" tweeter; response 50-20,000 Hz (reference not stated); tweeter control; 8 ohms impedance; 11 3/4" H x 23 1/8" W x 10 3/4" D; walnut; \$109.95.

## Model 205

Three-way floor standing with 13 1/2" x 8" woofer, two 5" mid-ranges, and 3 3/8" tweeter; response 25-22,000 Hz (reference not stated); mid-range and tweeter controls; 8 ohms impedance; 24 3/4" H x 14 1/4" W x 13 3/4" D; walnut; \$225.00.

## Model 300

Three-way bookshelf/floor standing with 15" woofer, 10" x 7" mid-range, and two compression tweeters; response 10-30,000 Hz (reference not stated); mid-range and tweeter controls; 8 ohms impedance; 27 1/2" H x 26" W x 19" D; walnut; \$350.00.

## Sonoglo 5

Two-way floor standing with 8" woofer and 3 3/8" tweeter; tweeter control; 8 ohms imped-



ance; 18" H x 10 1/4" W x 7 1/2" D; walnut; 37 square inch psychedelic light display coupled to speakers; \$149.50 (pair).

## EMPIRE SCIENTIFIC CORP.

## Grenadier 6000M

Infinite baffle enclosure system; 3-way floor standing column with 10" woofer (facing down),



direct radiator mid-range, and direct radiator ultrasonic tweeter; frequency response 30-20,000 Hz (reference not stated); tweeter level control; 8 ohms nominal impedance; 75 watts (dynamic) maximum input power; dimensions 24 3/8" H x 18" diameter column; walnut finish with marble top; approximate weight 60 lbs; price \$109.95.

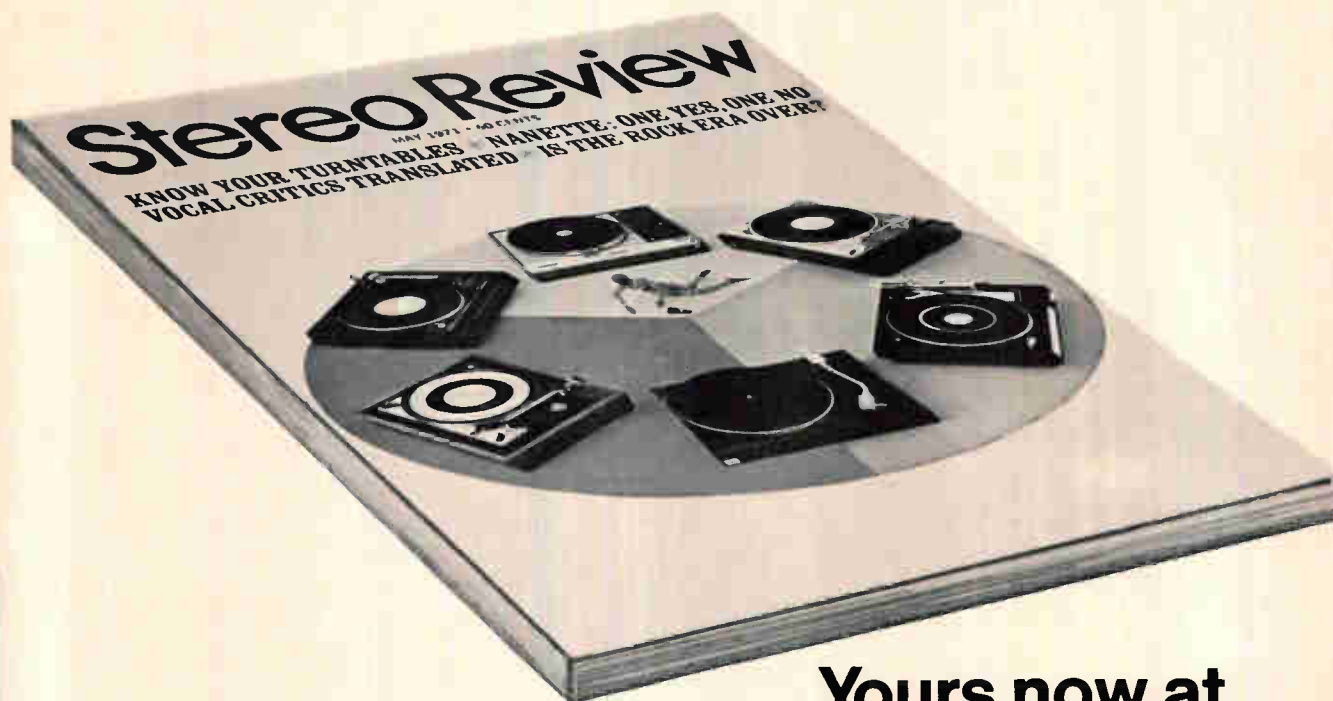
## Grenadier 7000M

Tuned duct port enclosure system; 3-way floor standing column with 12" woofer (facing down), direct radiator mid-range, and direct radiator domed tweeter; frequency response 25-20,000 Hz (reference not stated); tweeter level control; 8 ohms nominal impedance; 90 watts (IHF) maximum input power; dimensions 26 1/2" H x 19" diameter column; walnut finish with or without marble top; bass adjustment slots to suit room acoustics; approximate weight 80 lbs; price \$209.95.

## Grenadier 7500M

Infinite baffle enclosure system; 3-way floor

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# 10

## Speaker Systems

standing column with 15" woofer, direct radiator mid-range, and direct radiator domed tweeter; frequency response-25,20,000 Hz (reference not stated); tweeter level control; 8 ohms nominal impedance; 100 watts (dynamic) maximum input power; dimensions 26 $\frac{3}{4}$ " H x 20" diameter column; walnut or oak finish with marble top; price \$184.95.

### Grenadier 9000M

Infinite baffle enclosure system; 3-way floor standing column with 15" woofer, direct radiator mid-range, and direct radiator domed tweeter; frequency response 20-20,000 Hz (reference not stated); 8 ohms nominal impedance; 125 watts (IHF) maximum input power; dimensions 29" H x 22" diameter column; walnut finish with marble top; approximate weight 120 lbs; price \$299.95.

### EPI

#### Model 100

Sealed enclosure system; 2-way bookshelf with 8" woofer and 1" tweeter; frequency response 30-18,000 Hz (reference not stated); 1800 Hz crossover frequency; 8 ohms nominal impedance; requires 18 watts (rms) driving power; 60 watts (rms) maximum input power; dimensions 21" H x 11" W x 9" D; approximate weight 20 lbs; price \$89.00.

#### Model 201

Similar to Model 100, but contains two 8" woofers and two 1" tweeters; extra woofer and tweeter angled toward ceiling; dimensions 29" H x 18" W x 11" D; price \$199.00.

#### Model 601

Forward and rear facing enclosure system; six drivers in three woofer-tweeter modules; rear



facing modules are 90° apart; each module contains 8" woofer and wide dispersion 1" tweeter; frequency response 40-18,000 Hz at  $\pm 3$  dB (reference not stated); individual balance controls; 8 ohms nominal impedance; 100 watts (rms) maximum input power; dimensions 16" H x 24" W x 15" D; price \$249.00.

### FISHER RADIO

#### WS-80

Omni-directional enclosure system; 3-way floor standing with 8" woofer, 5 $\frac{3}{4}$ " mid-range, and wide dispersion 3" tweeter; frequency response 35-20,000 Hz (reference not stated); 400 Hz and 1500 Hz crossover frequencies; tweeter level control; 8 ohms nominal impedance; 30 watts (dynamic) maximum input power; dimensions 18 $\frac{3}{4}$ " H x 18" W x 11" D; oiled walnut finish; price \$99.95.

#### WS-70

Omni-directional enclosure system; 2-way floor standing with 6" woofer and wide dispersion 3" tweeter; frequency response 39-18,000 Hz (reference not stated); 1500 Hz crossover fre-



quency; tweeter level control; 8 ohms nominal impedance; 20 watts (dynamic) maximum input power; dimensions 16 $\frac{1}{2}$ " H x 15 $\frac{1}{2}$ " W x 9 $\frac{1}{2}$ " D; walnut finish; price \$79.95.

#### XP-7B

Sealed enclosure system; 4-way bookshelf with 12" woofer, 5 $\frac{3}{4}$ " mid-range, 5 $\frac{3}{4}$ " upper mid-range, and two 3" tweeters; frequency response 30-20,000 Hz (reference not stated); 350 Hz, 800 Hz and 3500 Hz crossover frequencies; 8 ohms nominal impedance; 80 watts (dynamic) maximum input power; dimensions 14" H x 24 $\frac{1}{2}$ " W x 12" D; walnut finish; approximate weight 40 lbs; price \$149.95.

#### XP-9C

Sealed enclosure system; 4-way bookshelf with 15" woofer, two 5" mid-ranges, 1 $\frac{1}{2}$ " tweeter, and 1 $\frac{1}{2}$ " super tweeter; frequency response 28-22,000 Hz (reference not stated); 500 Hz, 1200 Hz and 5000 Hz crossover frequencies; 100 watts (dynamic) maximum input power; dimensions 16 $\frac{1}{4}$ " H x 27 $\frac{1}{2}$ " W x 13" D; walnut finish; approximate weight 55 lbs; price \$199.95.

#### XP-16 Consolette

Sealed enclosure system; 4-way floor standing with two 12" woofers, 8" mid-range, 1 $\frac{1}{2}$ " dome



tweeter, and  $\frac{3}{4}$ " horn super tweeter; frequency response 28-24,000 Hz (reference not stated); 250 Hz, 2500 Hz and 7000 Hz crossover frequencies; mid-range and tweeter level controls; 8 ohms nominal impedance; 60 watts (dynamic) maximum input power; dimensions 31 $\frac{1}{2}$ " H x 27 $\frac{1}{2}$ " W x 16 $\frac{1}{2}$ " D; pecan, walnut or cherry finish; three cabinet designs; approximate weight 105 lbs; price \$299.95.

#### XP-18

Sealed enclosure system; 4-way floor standing with 18" woofer, 8" mid-range, 5 $\frac{1}{4}$ " upper mid-range, and two dome-type 2" tweeters; frequency response 30-22,000 Hz (reference not stated); 150 Hz, 1500 Hz and 3000 Hz crossover frequencies; 8 ohms nominal impedance; 60 watts (dynamic) maximum input power; dimensions 29 $\frac{1}{2}$ " H x 30 $\frac{1}{2}$ " W x 16 $\frac{1}{2}$ " D; walnut finish; approximate weight 105 lbs; price \$359.95.

#### XP-66B

Sealed enclosure system; 3-way bookshelf with 12" woofer, 5" mid-range, and 3" tweeter; frequency response 32-20,000 Hz (reference not stated); 500 Hz and 1000 Hz crossover frequencies; 8 ohms nominal impedance; 40 watts (dynamic) maximum input power; dimensions 13 $\frac{9}{16}$ " H x 24 $\frac{1}{8}$ " W x 12" D; walnut finish; approximate weight 33 lbs; price \$99.95.

#### XP-44B

Sealed enclosure system; 2-way bookshelf with

6" woofer and 3" tweeter; frequency response 30-19,000 Hz (reference not stated); 1000 Hz crossover frequency; 8 ohms nominal impedance; 25 watts (dynamic) maximum input power; dimensions 8 $\frac{1}{4}$ " H x 15 $\frac{1}{4}$ " W x 6 $\frac{1}{2}$ " D; walnut (vinyl) finish; approximate weight 15 lbs; price \$89.00 (pair).

#### XP-55B

Sealed enclosure system; 2-way bookshelf with 8" woofer and 3" tweeter; frequency response 37-20,000 Hz (reference not stated); 1500 Hz crossover frequency; 8 ohms nominal impedance; 30 watts (dynamic) maximum input power; dimensions 10" H x 20" W x 7 $\frac{1}{2}$ " D; walnut (vinyl) finish; approximate weight 18 lbs; price \$49.95.

#### XP-60B

Sealed enclosure system; 2-way bookshelf with 10" woofer and 3" tweeter; frequency response 35-20,000 Hz (reference not stated); 1000 Hz crossover frequency; 8 ohms nominal impedance; 30 watts (dynamic) maximum input power; dimensions 13" H x 23" W x 10" D; walnut finish; approximate weight 25 lbs; price \$79.95.

#### XP-65K

Sealed enclosure system; 3-way bookshelf with 10" woofer, 5" mid-range, and 3" tweeter; frequency response 33-20,000 Hz (reference not stated); 600 Hz and 3000 Hz crossover frequencies; 8 ohms nominal impedance; 60 watts (dynamic) maximum input power; dimensions 13" H x 23" W x 10" D; walnut finish; approximate weight 27 lbs; price \$109.95.

### FRAZIER, INC.

#### Buckaroo (F-1023)

Bass reflex enclosure system; 2-way bookshelf with 10" woofer and two 3" tweeters; frequency response 70-12,000 Hz at  $\pm 5$  dB (reference not stated); 3000 Hz crossover frequency; 8 ohms nominal impedance; 25 watts (rms) maximum input power; dimensions 11" H x 23" W x 9 $\frac{1}{2}$ " D; oiled walnut finish; approximate weight 32 lbs; price \$89.95.

#### Manhattan (F8-3M)

Tuned duct port enclosure system; 2-way floor standing with 8" woofer and 3" tweeter; frequency response 40-15,000 Hz at  $\pm 5$  dB (reference not stated); 3000 Hz crossover frequency; 8 ohms nominal impedance; 20 watts (rms) maximum input power; dimensions 19" H x 23 $\frac{7}{8}$ " W x 11 $\frac{7}{8}$ " D; oiled walnut finish; approximate weight 37 lbs; price \$114.95.

#### Mark IV (F-10H)

Tuned duct port enclosure system; 2-way bookshelf with 10" woofer and horn-type tweeter; frequency response 70-13,000 Hz at  $\pm 5$  dB (reference not stated); 2000 Hz crossover frequency; tweeter level control; 8 ohms nominal impedance; dimensions 14" H x 24" W x 12" D; approximate weight 41 lbs; price \$99.95.

#### Mark V (F12-2-5T)

Tuned duct port enclosure system; 3-way floor standing with 12" woofer, two 4" mid-ranges, and horn-type tweeter; frequency response 30-16,000 Hz at  $\pm 5$  dB (reference not stated); 800 Hz and 3300 Hz crossover frequencies; mid-range and tweeter level controls; 8 ohms nominal impedance; 30 watts (rms) maximum input power; dimensions 25 $\frac{1}{4}$ " H x 14" W x 12" D; oiled walnut finish; approximate weight 50 lbs; price \$189.95.

#### Mediterranean (F12-8M)

Tuned duct port enclosure system; 3-way floor standing with 12" woofer, 8" mid-range, and two 3" tweeters; frequency response 25-14,000 Hz at  $\pm 5$  dB (reference not stated); 800 Hz and 3300 Hz crossover frequencies; mid-range and tweeter level controls; 8 ohms nominal impedance; dimensions 30" H x 27 $\frac{1}{4}$ " W x 16 $\frac{5}{8}$ " D; dark oak finish (also available in different cabinet styles in walnut); price \$295.00.



#### Model XX

Bass reflex enclosure system; 2-way bookshelf with 12" woofer and two dome-type tweeters; frequency response 30-15,000 Hz at  $\pm 5$  dB (reference not stated); 2000 Hz crossover frequency; tweeter level control; 8 ohms nominal impedance; dimensions 14" H x 24" W x 12" D; pecan finish; approximate weight 52 lbs; price \$149.95.

#### Monte Carlo IV

Tuned duct port enclosure system; 2-way bookshelf with 8" woofer and 3" tweeter; frequency response 90-12,000 Hz at  $\pm 5$  dB (reference not stated); 3000 Hz crossover frequency; tweeter level control; 8 ohms nominal impedance; 20 watts (rms) maximum input power; dimensions 12" H x 19" W x 10 $\frac{3}{4}$ " D; oiled walnut finish; price \$69.00.

#### Patio (F8-1K)

Bass reflex enclosure system; 2-way outdoor with 8" woofer and 3" tweeter; frequency response 50-15,000 Hz at  $\pm 5$  dB (reference not stated); 3000 Hz crossover frequency; 8 ohms nominal impedance; 12 watts (rms) maximum input power; dimensions 15 $\frac{7}{8}$ " H x 15 $\frac{7}{8}$ " W x 8 $\frac{3}{4}$ " D; multi-color finish; approximate weight 16 lbs; price \$49.75.

Editor's Note: In addition to the above, this manufacturer offers a variety of speaker systems that are assembled in slate-gray and black unfinished cabinets. These systems are for home builders and contractors.

#### GC ELECTRONICS

(Div. of Hydrometals, Inc.)

#### Model 30-5104

Sealed enclosure system; response 35-20,000 Hz (reference not stated); 8 ohms impedance; 25 watts (rms) maximum input power; 9" H x 15 $\frac{1}{2}$ " W x 6 $\frac{1}{2}$ " D; \$55.00.

#### HARMAN-KARDON, INC.

#### HK50

Hemispheric enclosure system; 2-way floor standing with 8" woofer and 2 $\frac{1}{4}$ " tweeter; re-



sponse 35-18,000 Hz (reference not stated); tweeter control; 40 watts (rms) maximum input power; 18" H x 10 $\frac{3}{4}$ " W x 10 $\frac{3}{4}$ " D; walnut; \$99.95.

#### Citation

Bass reflex omni-directional enclosure system; 3-way floor standing with three woofers, two mid-ranges, and two tweeters; 60 watts (rms) maximum input power; walnut; \$295.00.

#### HK20

Sealed enclosure system; 2-way bookshelf with 8" woofer and 3" tweeter; response 42-20,000 Hz (reference not stated); 2000 Hz crossover frequency; tweeter control; 8 ohms impedance; 11 $\frac{1}{4}$ " H x 17 $\frac{1}{4}$ " W x 8 $\frac{1}{4}$ " D; walnut; \$55.00.

#### HK35

Sealed enclosure system; 2-way bookshelf with 8" woofer and 2 $\frac{1}{2}$ " tweeter; response 40-20,000

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# 10

## Speaker Systems

Hz (reference not stated); 2000 Hz crossover frequency; 8 ohms impedance; 40 watts (IHF) maximum input power; 11 $\frac{1}{4}$ " H x 14 $\frac{1}{2}$ " W x 8 $\frac{1}{2}$ " D; \$59.95.

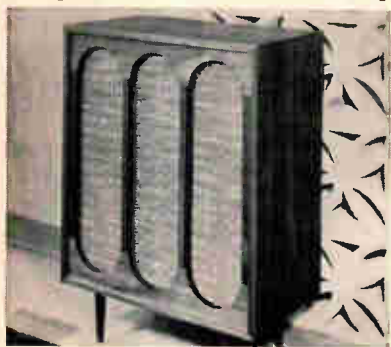
### HK45

Sealed enclosure system; 2-way bookshelf with 10" woofer and 3" tweeter; response 30-20,000 Hz (reference not stated); 1500 Hz crossover frequency; 8 ohms impedance; 60 watts (IHF) maximum input power; 13" H x 20 $\frac{1}{2}$ " W x 11" D; \$89.95.

### HARTLEY PRODUCTS CORP.

#### Concertmaster Jr.

Infinite baffle enclosure system; 2-way floor standing with 10" woofer and 7" mid-range/



tweeter; 1500 Hz crossover frequency; 8 ohms impedance; 30 watts (rms) maximum input power; 34" H x 25" W x 14" D; walnut; \$425.00.

#### Concertmaster Mark III

Open back (SoundSorber) enclosure system; 3-way floor standing with 18" woofer, 10" mid-range, and 7" tweeter; response 15-25,000 Hz (reference not stated); 300 and 3000 Hz crossover frequencies; 8 ohms impedance; 38" H x 29" W x 16" D; walnut; also available with 24" woofer (Model V—\$775.00); weight 150 lbs; \$695.00.

#### Holton A

Infinite baffle enclosure system; single full-range 8" speaker; 8 ohms impedance; 30 watts (rms) maximum input power; 34" H x 24" W x 13" D; oiled walnut; weight 85 lbs; \$275.00.

#### Holton, Jr.

Infinite baffle enclosure system; single full-range 8" speaker; 8 ohms impedance; 25 watts (rms) maximum input power; 30" H x 15" W x 13" D; oiled walnut; \$225.00.

#### Zodiac II

Infinite baffle enclosure system; 2-way bookshelf with 8" woofer and 4" mid-range/tweeter; response 40-18,000 Hz (reference not stated); 2000 Hz crossover frequency; 5 ohms impedance; requires 10 watts (rms) driving power; 20 watts (rms) maximum input power; 11 $\frac{1}{2}$ " H x 18" W x 8 $\frac{1}{2}$ " D; teak or rosewood; less than 1 $\frac{1}{2}$ % HD; weight 16 lbs; \$90.00.

#### Zodiac III

Infinite baffle enclosure system; 3-way bookshelf with 8" woofer, 4" mid-range, and 2 $\frac{1}{2}$ " tweeter; response 38-20,000 Hz (reference not stated); 2000 and 8000 Hz crossover frequencies; 5 ohms impedance; 12" H x 20" W x 8 $\frac{1}{2}$ " D; teak or rosewood; weight 24 lbs; \$135.00.

### HEATH COMPANY

#### Heathkit/AS-101

Bass reflex enclosure system; 2-way floor



standing with 15" woofer and Sectoral horn mid-range/tweeter; response 30-20,000 Hz (reference not stated); 80 Hz crossover frequency; horn level control; 8 ohms impedance; 50 watts (rms) maximum input power; 29 $\frac{3}{8}$ " H x 27 $\frac{3}{4}$ " W x 19 $\frac{1}{8}$ " D; similar to Altec "Milano"; \$259.95 (kit).

#### Heathkit/AS-102

Infinite baffle enclosure system; 3-way floor standing with 12" woofer, 6" mid-range, and two 2 $\frac{1}{4}$ " tweeters; response 28-20,000 Hz (reference not stated); 400 and 2500 Hz crossover frequencies; tweeter control; 8 ohms impedance; 50 watts (rms) maximum input power; 29 $\frac{3}{8}$ " H x 27 $\frac{3}{4}$ " W x 19 $\frac{1}{8}$ " D; Mediterranean; similar to Bozak system; \$239.95 (kit).

#### Heathkit/AS-103

Sealed enclosure system; 3-way bookshelf with 12" woofer, 1 $\frac{1}{2}$ " mid-range, and dome-type  $\frac{3}{4}$ " tweeter; response 30-20,000 Hz at  $\pm 5.0$  dB; 575 and 5000 Hz crossover frequencies; mid-range and tweeter controls; 4 ohms impedance; 25 watts (rms) driving power; 14" H x 25" W x 11 $\frac{3}{4}$ " D; similar to Acoustic Research AR-3a; \$189.95 (kit).

### HITACHI SALES CORP.

#### HS-200F

Sealed enclosure system; 2-way bookshelf with 8" woofer and 2 $\frac{1}{2}$ " tweeter; response 50-20,000 Hz (reference not stated); 3000 Hz crossover frequency; 8 ohms impedance; 20 watts (rms) maximum input power; 11" H x 19 $\frac{1}{8}$ " W x 9 $\frac{1}{16}$ " D; oiled walnut; \$69.95.

#### HS-201F

Tuned duct port enclosure system; 2-way bookshelf with 8" woofer and horn-type tweeter; response 40-20,000 Hz (reference not stated); 4000 Hz crossover frequency; 8 ohms impedance; 20 watts (rms) maximum input power; 12 $\frac{1}{2}$ " H x 21 $\frac{3}{4}$ " W x 11 $\frac{3}{16}$ " D; oiled walnut; \$89.95.

#### HS-250F

Tuned duct port enclosure system; 3-way floor standing with 10" woofer, 5" mid-range, and horn-type tweeter; response 35-20,000 Hz (reference not stated); 800 and 4000 Hz crossover frequencies; 8 ohms impedance; 40 watts (rms) maximum input power; 25 $\frac{5}{16}$ " H x 14 $\frac{7}{16}$ " W x 11 $\frac{7}{16}$ " D; walnut; \$149.95.

#### HS-500

Tuned duct port enclosure system; 2-way floor standing with 8" woofer and horn-type tweeter; response 40-20,000 Hz (reference not stated); 3000 Hz crossover frequency; tweeter control; 8 ohms impedance; 20 watts (rms) maximum input power; 24 $\frac{1}{16}$ " H x 14 $\frac{3}{8}$ " W x 13 $\frac{3}{8}$ " D; walnut; weight 48 lbs; \$269.95.

#### HS-1400W

Bass reflex enclosure system; 4-way floor standing with two 8" woofers (one facing downward), 5" mid-range, and horn-type tweeter; response 35-20,000 Hz (reference not stated); 100, 1500 and 5000 Hz crossover fre-

quencies; mid-range and tweeter controls; 8 ohms impedance; 20 watts (rms) maximum input power; 45 $\frac{1}{2}$ " H x 17 $\frac{1}{4}$ " W x 14 $\frac{1}{2}$ " D; walnut; weight 60 lbs; \$269.95.

### IMF PRODUCTS

#### Monitor Mk. II

Dual transmission line enclosure system; 4-way floor standing with large oval woofer; damped 5" mid-range, and dome-type tweeter; mid-range and tweeter controls; 8 ohms impedance; requires 30 watts (dynamic) driving power; 43" H x 20" W x 17" D; rosewood formica; weight 125 lbs; \$660.00.

#### Monitor Mk. III

Dual transmission line enclosure system; 4-way floor standing with large oval woofer, damped 5" mid-range, and dome-type tweeter; mid-range and tweeter controls; 8 ohms impedance; requires 30 watts (dynamic) driving power; 43" H x 20" W x 17" D; walnut formica; \$800.00.

#### TLS Studio

Dual transmission line enclosure system; 4-way floor standing with large oval woofer, damped 5" mid-range, and dome-type tweeter; response 20-40,000 Hz at  $\pm 1.5$  dB (average living room); 375 Hz, 3500 Hz and 13,000 Hz crossover frequencies; tweeter control; 8 ohms impedance; requires 25 watts (dynamic) driving power; 35 $\frac{1}{2}$ " H x 15" W x 14" D; teak or walnut; weight 70 lbs; \$300.00.

### INFINITY SYSTEMS, INC.

#### Model 1001

Terminated line enclosure system; 2-way floor standing with woofer and two tweeters (one in rear of enclosure to provide "ambiance"); response 30-21,000 Hz at  $\pm 4.5$  dB (average living room); 1300 Hz crossover frequency; 6 ohms impedance; requires 20W rms power; 26" x 18" x 12" D; walnut; \$139.00.

#### Model 2000A

Terminated line enclosure system; 3-way floor standing with 12" woofer, 4" mid-range, and four front and rear radiating electrostatic tweeters; response 30-30,000 Hz at  $\pm 4.0$  dB (average living room); 300 Hz and 1800 Hz crossover frequencies; 4 ohms impedance; requires 35 watts (rms) driving power; 26" H x 18" W x 12" D; oiled walnut; \$289.000.

#### Servo-Statik I

Three enclosure system; floor standing with 18" woofer in a decorator commode with sepa-



rate 110W (rms) power amplifier and servo amplifier, two electrostatic mid-ranges, and tweeter screens; response 15-30,000 Hz at  $\pm 2.0$  dB (average living room); 100 Hz and 1650 Hz crossover frequencies; requires 60 watts (rms) driving power; 50 watts (rms) maximum input power to electrostatics; bass commode 22" H x 22" W x 19" D; electrostatic screens 37" H x 28" W x 6 $\frac{1}{2}$ " D; walnut; \$1995.00.

### JANSZEN

#### JanKit 96 (Environmental)

Open back enclosure system; 2-way floor

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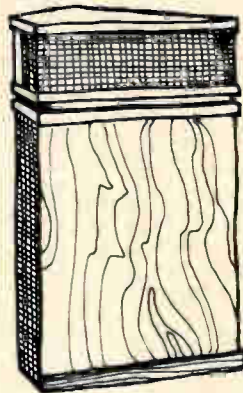
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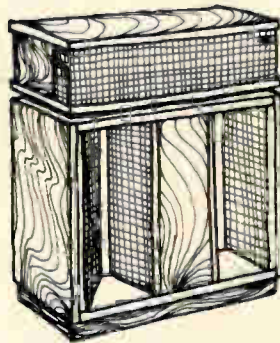
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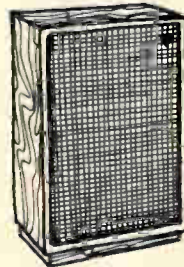
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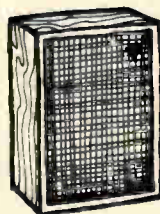
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# 10

## Speaker Systems

standing with 11" woofer and 4 electrostatic tweeters; response 30-30,000 Hz (reference not stated); 1000 Hz crossover frequency; 8 ohms impedance; requires 30 watts (rms) driving power; 100 watts (peak) maximum input power; 24" H x 22" W x 7" D; black utility finish; similar units (Models 41 and 51) are somewhat similar varying in size, woofer design and number of tweeters—\$139.95 and \$129.95, respectively; \$199.95.

### Model 130

Electrostatic bookshelf system with 4 radiators; response 1000-30,000 Hz (reference not stated);



700 Hz crossover frequency; 8 or 16 ohms impedance; 50 watts (rms) maximum input power; 7 1/4" H x 22" W x 13" D; walnut; similar units (Models 33 and 65) are somewhat identical in operation varying in size and number of radiators—\$99.95 and \$119.95, respectively; \$199.95.

### Type Z-108

Sealed enclosure system; 2-way bookshelf with 8" woofer and electrostatic tweeter; response 27-30,000 Hz at ±3.0 dB (average living room); 2000 Hz crossover frequency; 4 ohms impedance; requires 20 watts (rms) driving power; 100 watts (peak) maximum input power; 10 1/2" H x 20" W x 10 3/8" D; vinyl and walnut; Type Z-110 is similar, but uses 10" woofer; 12 1/2" H x 23 1/4" W x 11 3/4" D—\$129.95; \$99.95.

### Model Z-500A

Sealed enclosure system; 2-way bookshelf with 11" woofer and electrostatic tweeter; response



30-30,000 Hz (reference not stated); 2000 Hz crossover frequency; 8 ohms impedance; 100 watts (peak) maximum input power; 13 1/2" H x 24 3/4" W x 11 3/8" D; oiled walnut cabinet; \$149.95.

### Type Z-600A

Sealed enclosure system; 2-way floor standing with 11" woofer and two electrostatic tweeters; response 30-30,000 Hz (reference not stated); 2000 Hz crossover frequency; 8 ohms impedance; 100 watts (peak) maximum input power; 26 5/8" H x 20" W x 13" D; walnut; weight 50 lbs; \$219.95.

### Model Z-700A

Sealed enclosure system; 2-way bookshelf with 11" woofer and two electrostatic tweeters; response 30-30,000 Hz (reference not stated); 2000 Hz crossover frequency; 8 ohms impedance; 100 watts (peak) maximum input power; 15" H x 26" W x 13 1/4" D; walnut; weight 44 lbs; \$179.95.

### Type Z-900A

Sealed enclosure system; 2-way floor standing with two 11" woofers and four electrostatic tweeters; response 20-30,000 Hz (reference not



stated); 1400 Hz crossover frequency; 8 ohms impedance; 100 watts (peak) maximum input power; 28" H x 31 1/4" W x 15 1/2" D; walnut; weight 80 lbs; \$399.95.

### Type Z-960A

Sealed enclosure system; 2-way floor standing with 11" woofer and three electrostatic tweeters; response 30-30,000 Hz (reference not stated); 1400 Hz crossover frequency; 8 ohms impedance; 100 watts (peak) maximum input power; 26 3/4" H x 27 1/2" W x 14 1/2" D; walnut; weight 67 lbs; \$279.95.

## JENSEN SOUND LABORATORIES

(Division of Pemcor)

### Model 1

Sealed system with single speaker dual cone bookshelf; response 40-18,000 Hz (reference not stated); 6000 Hz crossover frequency; 8 ohms impedance; 10" H x 14 1/2" W x 8 1/2" D; walnut vinyl; weight 14 lbs; \$30.00.

### Model 2

Sealed enclosure system; 2-way bookshelf with 8" woofer and 3 1/2" tweeter; response 38-20,000 Hz (reference not stated); 1200 Hz crossover frequency; tweeter control; 8 ohms impedance; 11" H x 18 3/4" W x 8 3/8" D; walnut vinyl; weight 22 lbs; \$48.00.

### Model 3

Sealed enclosure system; 2-way bookshelf with 10" woofer and 3 1/2" tweeter; response 36-20,000 Hz (reference not stated); 800 Hz crossover frequency; tweeter control; 8 ohms impedance; 12 1/4" H x 22 1/2" W x 10 3/4" D; walnut; removable grille cloth; weight 31 lbs; \$75.00.

### Model 4

Sealed enclosure system; 3-way bookshelf with 10" woofer, 5" mid-range, and dome-type tweeter;



response 36-30,000 Hz (reference not stated); 500 Hz and 4000 Hz crossover frequencies; mid-range and tweeter controls; 8 ohms impedance; 13" H x 24" W x 12" D; walnut; weight 46 lbs; \$99.00

### Model 5

Sealed enclosure system; 3-way floor standing with 12" woofer, two 5" mid-ranges, and dome-type tweeter; response 32-30,000 Hz (reference not stated); 500 Hz and 4000 Hz crossover fre-

quencies; mid-range and tweeter controls; 8 ohms impedance; 26" H x 15" W x 13" D; walnut; removable grille cloth; weight 52 lbs; \$147.00.

### Model 6

Sealed enclosure system; 4-way floor standing with 15" woofer, 8" mid-range, 5" tweeter, and



dome-type super-tweeter; response 27-30,000 Hz (reference not stated); 300 Hz, 1000 Hz and 4000 Hz crossover frequencies; mid-range and tweeter controls; 8 ohms impedance; 27" H x 20 1/2" W x 15" D; walnut finish; removable grille cloth; weight 74 lbs; \$198.00.

## JVC AMERICA, INC.

(Subs. of Victor Co. of Japan, Ltd.)

### Model 5303

Omni-directional spherical sealed enclosure system; 2-way floor standing with two 5" woofers and two horn-type tweeters (in each sphere); response 20-20,000 Hz (reference not stated); 5000 Hz crossover frequency; 8 ohms



impedance; 80 watts (peak) maximum input power; 13 1/2" diameter; black metallic finish; weight 26 lbs each; \$169.95 (each).

### Model 5306

Sealed enclosure system; 3-way floor standing with 12" woofer, dome-type mid-range, dome-type tweeter, and horn-type super-tweeter; response 20-20,000 Hz (reference not stated); 600, 4000 and 8000 Hz crossover frequencies; mid-range and tweeter controls under grille; 8 ohms impedance; 60 watts (peak) maximum input power; 26" H x 14 3/8" W x 12 3/8" D; walnut; weight 40 lbs; \$249.95.

### Model 5321

Sealed enclosure system; 3-way floor standing with 8" woofer, 3 1/2" mid-range, and 2" tweeter; response 37-20,000 Hz (reference not stated); 5000 and 10,000 Hz crossover frequencies; tweeter control under grille; 8 ohms impedance; 60 watts (peak) maximum input power; 21 1/2" H x 13" W x 9 3/4" D; walnut; weight 21 lbs; \$89.95.

### Model 5331

Sealed enclosure system; 4-way floor standing with 12" woofer, 6 1/2" mid-range, 3 1/2" tweeter, and 2" super-tweeter; response 30-20,000 Hz

(reference not stated); 5000 and 10,000 Hz crossover frequencies; mid-range and tweeter controls under grille; 8 ohms impedance; 80 watts (peak) maximum input power; 24 $\frac{3}{4}$ " H x 15 $\frac{3}{8}$ " W x 13 $\frac{3}{8}$ " D; walnut; weight 33 lbs; \$149.95.

**Model 5341**

Sealed enclosure system; 4-way floor standing with 12" woofer, horn-type mid-range, 3 $\frac{1}{2}$ " tweeter, and horn-type super-tweeter; response 20-20,000 Hz (reference not stated); 1000, 7000 and 10,000 Hz crossover frequencies; mid-range and tweeter controls; 8 ohms impedance; 80 watts (peak) maximum input power; 28 $\frac{1}{2}$ " H x 16 $\frac{1}{2}$ " W x 15 $\frac{3}{8}$ " D; walnut; weight 50 lb; \$229.95.

**Model 5351**

Sealed enclosure system; 4-way floor standing with 15" woofer, cellular horn mid-range, 6 $\frac{1}{2}$ "



upper mid-range, and two 2" tweeters; response 20-20,000 Hz (reference not stated); 400, 1000 and 5000 Hz crossover frequencies; mid-range and tweeter controls; 8 ohms impedance; 100 watts (peak) maximum input power; 29 $\frac{1}{16}$ " H x 17 $\frac{1}{16}$ " W x 15 $\frac{3}{8}$ " D; walnut; weight 57 lbs; \$299.95.

**KENWOOD ELECTRONICS, INC.**

**KL-3080**

Sealed enclosure system; 3-way bookshelf with 10" woofer, 5" mid-range, and 1 $\frac{1}{2}$ " tweeter;



response 40-20,000 Hz (reference not stated); 800 and 5000 Hz crossover frequencies; tweeter control; 8 ohms impedance; 45 watts (rms) maximum input power; 22 $\frac{1}{2}$ " H x 13 $\frac{1}{2}$ " W x 11 $\frac{1}{4}$ " D; oiled walnut; weight 18 $\frac{1}{2}$  lbs; \$199.95 (pair).

**KL-5060**

Sealed enclosure system; 3-way floor standing with 12" woofer, 6 $\frac{1}{2}$ " mid-range, and two horn-type tweeters; response 30-22,000 Hz (reference not stated); 600 and 5000 Hz crossover frequencies; mid-range and tweeter controls; 8 ohms impedance; 60 watts (rms) maximum input power; 25 $\frac{1}{2}$ " H x 15" W x 11 $\frac{3}{8}$ " D; oiled walnut; weight 44 lbs; \$279.95 (pair).

**KLH RESEARCH & DEVELOPMENT CORP.**

**Model Five**

Sealed enclosure system; 3-way bookshelf with 12" woofer, two 3" mid-ranges, and 1 $\frac{3}{4}$ " tweeter;



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# 10

## Speaker Systems

2500 and 7000 Hz crossover frequencies; mid-range and tweeter controls; 8 ohms impedance; 13<sup>3</sup>/<sub>4</sub>" H x 26" W x 11<sup>1</sup>/<sub>2</sub>" D; oiled walnut; \$189.95.

### Model Six

Sealed enclosure system; 2-way bookshelf with 12" woofer and 1<sup>3</sup>/<sub>4</sub>" tweeter; tweeter control; 8 ohms impedance; 12<sup>5</sup>/<sub>8</sub>" H x 23<sup>3</sup>/<sub>4</sub>" W x 11<sup>7</sup>/<sub>8</sub>" D; walnut or cherry; \$134.00.

### Model Nine

Electrostatic system; floor standing; full-range frequency response; 16 ohms impedance; requires 40 watts (IHF) driving power; 70" H x 23<sup>1</sup>/<sub>2</sub>" W x 27<sup>5</sup>/<sub>8</sub>" D; mahogany or walnut; should be used in pairs; \$1140.00 (each).

### Model Seventeen

Sealed enclosure system; 2-way bookshelf with 10" woofer and 1<sup>3</sup>/<sub>4</sub>" tweeter; tweeter control; 11<sup>3</sup>/<sub>4</sub>" H x 23<sup>1</sup>/<sub>4</sub>" W x 8<sup>1</sup>/<sub>4</sub>" D; oiled walnut; removable grille cloth; \$74.95.

### Model Twenty-Two A

Sealed enclosure system; 2-way bookshelf with 8" woofer and 2" tweeter; 8 ohms impedance; 10<sup>1</sup>/<sub>4</sub>" H x 18" W x 7<sup>5</sup>/<sub>16</sub>" D; oiled walnut; \$54.95.

### Model Thirty-Three

Sealed enclosure system; 2-way bookshelf with 10" woofer and 1<sup>3</sup>/<sub>4</sub>" tweeter; 8 ohms impedance; 13<sup>3</sup>/<sub>4</sub>" H x 23<sup>3</sup>/<sub>8</sub>" W x 10<sup>7</sup>/<sub>16</sub>" D; oiled walnut; \$99.95.

## KLIPSCH AND ASSOCIATES, INC.

### Cornwall II

Tuned duct port enclosure system; 3-way floor standing with 15" woofer, horn-loaded mid-range, and horn-type tweeter; response 38-17,000 Hz at ±5 dB (reference not stated); 600 Hz and 6000 Hz crossover frequencies; mid-range and tweeter controls; 16 ohms impedance; 70 watts (dynamic) maximum input power; 36" H x 25<sup>1</sup>/<sub>2</sub>" W x 15<sup>1</sup>/<sub>2</sub>" D; furniture finishes; weight 108 lbs; \$460.00.

### Heresy

Infinite baffle enclosure system; 3-way floor standing with 12" woofer, horn-loaded mid-



range, and horn-type tweeter; response 70-17,000 Hz at ±5 dB (reference not stated); 700 Hz and 6000 Hz crossover frequencies; 16 ohms impedance; 25 watts (dynamic) maximum input power; 21<sup>3</sup>/<sub>8</sub>" H x 15<sup>1</sup>/<sub>2</sub>" W x 13<sup>1</sup>/<sub>8</sub>" D; furniture finishes; weight 55 lbs; \$252.00.

### Klipschorn (K-347)

Folded corner horn enclosure system; 3-way floor standing with 15" woofer, horn-loaded mid-range, horn-type tweeter; response 33-17,000 Hz at ±5 dB (reference not stated); 400 Hz and 6000 Hz crossover frequencies; mid-range and tweeter controls; 16 ohms impedance; 52" H x 31<sup>1</sup>/<sub>4</sub>" W x 28<sup>1</sup>/<sub>4</sub>" D; oiled walnut (other finishes available); \$884.00.

### La Scala (K-447)

Folded horn enclosure system; 3-way floor standing with 15" woofer, horn-loaded mid-range, and horn-type tweeter; response 45-17,000 Hz at ±5 dB (reference not stated); 400 Hz and 6000 Hz crossover frequencies; 16 ohms impedance; 70 watts (dynamic) maximum input power; 34<sup>1</sup>/<sub>2</sub>" H x 23<sup>3</sup>/<sub>4</sub>" W x 24<sup>1</sup>/<sub>2</sub>" D; theatre black finish; weight 110 lbs; \$566.00.

### The Belle Klipsch

Folded horn enclosure system; 3-way floor standing with 15" woofer, horn-loaded mid-range, and horn-type tweeter; response 45-



17,000 Hz at ±5 dB (reference not stated); 400 Hz and 6000 Hz crossover frequencies; mid-range and tweeter controls; 16 ohms impedance; 70 watts (dynamic) maximum input power; 35<sup>5</sup>/<sub>8</sub>" H x 30<sup>1</sup>/<sub>8</sub>" W x 18<sup>7</sup>/<sub>8</sub>" D; oiled walnut; \$815.00.

## LAFAYETTE RADIO

### Criterion 4X

Tuned duct port enclosure system; 4-way floor standing with 12<sup>3</sup>/<sub>4</sub>" woofer, 5" mid-range, 3" tweeter, and 1<sup>1</sup>/<sub>2</sub>" super-tweeter; response 25-20,000 Hz (reference not stated); 800, 5000 and 10,000 Hz crossover frequencies; mid-range and tweeter controls; 8 ohms impedance; 50 watts (peak) maximum input power; 22" H x 14<sup>1</sup>/<sub>4</sub>" W x 11<sup>5</sup>/<sub>8</sub>" D; oiled walnut; weight 39<sup>1</sup>/<sub>4</sub> lbs; \$79.95.

### Criterion 5XB

Sealed enclosure system; 4-way floor standing with 12" woofer, 6<sup>1</sup>/<sub>2</sub>" mid-range, 3" electrostatic tweeter, and 1<sup>1</sup>/<sub>2</sub>" super-tweeter; response 18-25,000 Hz (reference not stated); 800, 4500 and 10,000 Hz crossover frequencies; mid-range and tweeter controls; 8 ohms impedance; 75 watts (peak) maximum input power; 23<sup>7</sup>/<sub>8</sub>" H x 14<sup>3</sup>/<sub>8</sub>" W x 11<sup>5</sup>/<sub>8</sub>" D; oiled walnut; weight 46 lbs; \$129.95.

### Criterion VI

Tuned duct port enclosure system; 4-way floor standing with 12" woofer, 5" mid-range, two 3" tweeters, and two 1<sup>1</sup>/<sub>2</sub>" super-tweeters; response 20-20,000 Hz (reference not stated); 800, 5000 and 12,000 Hz crossover frequencies; mid-range and tweeter controls; 8 ohms impedance; 50 watts (peak) maximum input power; 24" H x 14<sup>1</sup>/<sub>2</sub>" W x 12" D; oiled walnut; weight 41 lbs; \$99.95.

### Criterion 88

Sealed enclosure system; 3-way floor standing with 10" woofer, 3" mid-range, and 1<sup>1</sup>/<sub>2</sub>" tweeter; response 20-20,000 Hz (reference not stated); 6600 and 10,000 Hz crossover frequencies; tweeter control; 8 ohms impedance; 40 watts (peak) maximum input power; 24<sup>1</sup>/<sub>2</sub>" H x 15" W x 9<sup>1</sup>/<sub>4</sub>" D; oiled walnut; weight 32 lbs; \$89.95.

### Criterion 90

Sealed enclosure system; 4-way floor standing

with 12" woofer, 6<sup>1</sup>/<sub>2</sub>" mid-range, two 3" and two 1<sup>1</sup>/<sub>2</sub>" tweeters; response 18-25,000 Hz (reference not stated); 3500 and 5000 Hz crossover frequencies; mid-range and tweeter controls; 8 ohms impedance; 100 watts (peak) maximum input power; 30" H x 18" W x 12" D; oiled walnut; weight 67 lbs; \$159.95.

### Criterion 100B

Tuned duct port enclosure system; 3-way bookshelf with 10" woofer, 3<sup>1</sup>/<sub>2</sub>" mid-range, and direct radiator 1<sup>1</sup>/<sub>2</sub>" tweeter; response 30-19,000 Hz (reference not stated); 3500 and 10,000 Hz crossover frequencies; tweeter control; 8 ohms impedance; 40 watts (peak) maximum input power; 11" H x 19" W x 8<sup>7</sup>/<sub>8</sub>" D; oiled walnut; weight 29 lbs; \$49.95.

### Criterion 150A

Sealed enclosure system; 3-way bookshelf with 10" woofer, 3" mid-range, and direct radiator 1<sup>1</sup>/<sub>2</sub>" tweeter; response 30-20,000 Hz (reference not stated); 1600 and 10,000 Hz crossover frequencies; tweeter control; 8 ohms impedance; 40 watts (peak) maximum input power; 11" H x 19" W x 8<sup>7</sup>/<sub>8</sub>" D; oiled walnut; weight 21 lbs; \$59.95.

## JAMES B. LANSING SOUND, INC.

### Alpha III

Tuned duct port enclosure system; 3-way floor standing with 12" woofer, 5" mid-range, and 2" tweeter; mid-range and tweeter controls; 8 ohms impedance; 26<sup>1</sup>/<sub>2</sub>" H x 35" W x 17<sup>1</sup>/<sub>2</sub>" D; 12" passive bass radiator; \$336.00.

### Aquarius 1

Sealed enclosure system; 3-way bookshelf or floor standing with 10" horn-loaded woofer,



5" mid-range, and 2" tweeter; 1000 Hz and 3500 Hz crossover frequencies; 8 ohms impedance; 20" H x 20" W x 13<sup>1</sup>/<sub>2</sub>" D; walnut or satin white; diffraction slots for stereo dispersion; \$288.00.

### Aquarius 4

Sealed enclosure system; 2-way floor standing with 8" horn-loaded woofer and 2" tweeter; 8



ohms impedance; 40" H x 10" W x 10" D; walnut or satin white; upward radiating bass driver and tweeter on upper rear panel; \$186.00.

### Athena SC99

Tuned duct port enclosure system; 2-way bookshelf with 14" woofer and 2" tweeter; tweeter control; 8 ohms impedance; 14" H x 24" W x 12" D; oiled walnut; \$249.00.

### Baron S38

Bass reflex enclosure system; 2-way floor standing with 15" woofer and ring radiator (075) tweeter; 2500 Hz crossover frequency; tweeter control; 8 ohms impedance; 25" H x 24" W x 16" D; oiled walnut; \$342.00.

### Century L100

Sealed enclosure system; 3-way bookshelf with 12" woofer, 4" mid-range, and direct radiator tweeter; response 40-15,000 Hz at ±3 dB (reference not stated); 2500 Hz and 7000 Hz crossover frequencies; mid-range and tweeter controls; 8 ohms impedance; 50 watts (rms) maximum input power; 14 1/2" H x 23 1/2" W x 13 3/4" D; oiled walnut; front mounted controls under grille; weight 51 lbs; \$273.00.

### Flair L45

Tuned duct port enclosure system; 2-way floor standing with 15" woofer and compression driver with horn lens tweeter; 1200 Hz crossover frequency; 3-position tweeter control; 8 ohms impedance; 50 watts (rms) maximum input power; 21 3/4" H x 29 3/8" W x 17 3/8" D; oiled walnut; weight 84 lbs; \$495.00.

### Lancer 44

Sealed enclosure bookshelf system with single full-range 10" speaker; 8 ohms impedance; 13" H x 24" W x 12" D; oiled walnut; 8" passive bass radiator; \$135.00.

### Lancer 55

Tuned duct port enclosure system; 2-way floor standing with 14" woofer and 2" tweeter; 200 Hz crossover frequency; 3-position tweeter control; 8 ohms impedance; 35 watts (rms) maximum input power; 24 1/2" H x 17 1/2" W x 17 1/2" D; oiled walnut; weight 78 lbs; \$276.00.

### Lancer 77

Tuned duct port enclosure system; 2-way floor standing with 10" woofer and tweeter; 2500 Hz

crossover frequency; tweeter control; 8 ohms impedance; 23 1/2" H x 14" W x 12" D; oiled walnut; 10" passive bass radiator; \$198.00.

### Lancer 101

Tuned duct port enclosure system; 2-way bookshelf with 14" woofer and driver/horn/lens (LE 175 DLH) mid-range/tweeter; 1500 Hz crossover frequency; horn level control; 8 ohms impedance; 25" H x 18" W x 13" D; oiled walnut marble top panel; \$408.00.

### Olympus S7R

Tuned duct port enclosure system; 2-way floor standing with 15" woofer and mid-range/tweeter driver with lens; 500 Hz crossover frequency; horn level control; 8 ohms impedance; 27" H x 40" W x 20" D; oiled walnut; 15" passive bass radiator; \$759.00.

### Studio 2 L200

Tuned duct port enclosure system; 2-way floor standing with 15" woofer and compression driver with horn lens tweeter; 1200 Hz cross-

over frequency; 3-position tweeter control; 8 ohms impedance; 100 watts (rms) maximum input power; 32 3/4" H x 24" W x 21 1/8" D; oiled walnut; weight 90 lbs; \$597.00.

### Sovereign S7R

Tuned duct port enclosure system; 2-way floor standing with 15" woofer and mid-range/tweeter driver with lens; 500 Hz crossover frequency; horn level control; 8 ohms impedance; 27" H x 39" W x 20" D; oak; 15" passive bass radiator; \$681.00.

### Verona L71

Sealed enclosure system; 4-way floor standing with 14" woofer, 5" mid-range, and 2" tweeter;



1200 Hz and 7000 Hz crossover frequencies; mid-range and tweeter controls; 8 ohms impedance; 50 watts (rms) maximum input power; 27 1/2" H x 36 3/4" W x 17 3/4" D; pecan; 14" passive bass radiator; weight 115 lbs; \$495.00.

### Viscount S36

Tuned duct port enclosure system; 2-way floor standing with 15" woofer and driver/horn/lens (LE 175 DLH) mid-range/tweeter; 1200 Hz crossover frequency; horn level control; 8 ohms impedance; 29" H x 10" W x 16" D; oiled walnut; \$440.00.



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**NET \$39.95**

# 10

## Speaker Systems

### Paragon

Radial refraction stereo enclosure system; 3-way floor standing with two 15" woofers, two horn driver mid-ranges, and two ring radiator tweeters; 500 Hz and 7000 Hz crossover frequencies; dual mid-range and tweeter controls; 16 ohms impedance; 36" H x 104" W x 24" D; walnut; special dispersion surface to recreate stereo image; weight 500 lbs; \$2700.00.

### LEAK

### Sandwich Mk III

Sealed enclosure system; 2-way floor standing with 13" woofer and 1" tweeter; response 30-20,000 Hz (reference not stated); 900 Hz crossover frequency; tweeter control; 8 ohms impedance; 70 watts (rms) maximum input power; 26" H x 15" W x 12" D; oiled walnut removable grille; weight 49 lbs; \$215.00.

### THE MAGITRAN COMPANY

(Div. of ERA Acoustics Corp.)

### Emperor IV "Tempo"

Omni-directional enclosure system; floor standing; response 30-20,000 Hz (reference not



stated); 40 watts (peak) maximum input power; 18" H x 17" W x 17" D; walnut; \$79.95.

### Magic Mirror

Poly-Planar flat polystyrene system; wall hanging; 8 ohms impedance; 40 watts (peak) maximum input power; frame dimensions 17 1/4" H x 20 1/4" W x 1" D; Early American finish (with mirror); \$24.95.

### MARANTZ CO, INC.

### Imperial III

Sealed enclosure system; 3-way bookshelf with 12" woofer, 2" dome mid-range, and dome-type 1" tweeter; response 30-20,000 Hz (reference not stated); 1500 Hz and 6000 Hz crossover frequencies; mid-range and tweeter controls;

8 ohms impedance; requires 25 watts (rms) driving power; 250 watts (peak) maximum input power; 13 1/2" H x 23" W x 12" D; walnut; weight 40 lbs; \$59.00.

### Imperial IV-A

Sealed enclosure system; 2-way bookshelf with 8" woofer and 2" tweeter; response 60-18,000 Hz (reference not stated); 2000 Hz crossover frequency; 8 ohms impedance; 30 watts (peak) maximum input power; 10 1/4" H x 18 1/8" W x 7 1/2" D; walnut; weight 13 lbs; \$59.00.

### Imperial V

Tuned duct port enclosure system; 2-way bookshelf with 8" woofer and dome-type 3 1/2" tweeter; response 50-15,000 Hz at ±3 dB (reference not stated); 2000 Hz crossover frequency; tweeter control; 8 ohms impedance; 40 watts (dynamic) maximum input power; 12" H x 23" W x 9 1/2" D; oiled walnut; weight 25 lbs; \$89.00.

### Imperial VI

Tuned duct port enclosure system; 2-way floor standing with 10" woofer and dome-type tweeter; response 40-18,000 Hz at ±5 dB (reference not stated); 3000 Hz crossover frequency; tweeter control; 8 ohms impedance; 100 watts (dynamic) maximum input power; 25 1/2" H x 14 1/4" W x 11 1/2" D; oiled walnut; weight 43 lbs; \$129.00.

### MICRO/ACOUSTICS CORP.

### Microstatic

Open enclosure system; 1-way miniature with four tweeters; response 3500-18,000 Hz at ±2.0 dB (average living room); range selector and level control; 4 → 16 ohms impedance; 60 watts (rms) maximum input power; 3 3/4" H x 9 1/8" W x



5 1/4" D; walnut; for use with medium and low efficiency systems to augment treble; weight 2 lbs; \$57.00.

### MIDLAND

### Model 21-540

Sealed enclosure system; 3-way bookshelf with 8" woofer, 5 1/2" mid-range, and 3 1/2" tweeter; frequency response 35-16,000 Hz (reference not stated); 8 ohms nominal impedance; 40 watts (peak) maximum input power; dimensions 19 7/8" H x 10 7/8" W x 9" D; walnut finish; approximate weight 11 lbs; price \$39.95.

### Model 21-554

Sealed enclosure system; 3-way bookshelf with 12" woofer, 4 1/2" mid-range, and 3" tweeter; frequency response 35-20,000 Hz (reference not

stated); 8 ohms nominal impedance; 56 watts (peak) maximum input power; dimensions 25" H x 14 3/4" W x 11 7/8" D; walnut finish; approximate weight 26 lbs; price \$99.95.

### Model 21-556

Sealed enclosure system; 3-way bookshelf with 12" woofer, two 4 1/2" mid-range speakers, and two 3" tweeters; frequency response 30-20,000 Hz (reference not stated); two level controls; 8 ohms nominal impedance; 70 watts (peak) maximum input power; dimensions 26" H x 15 3/8" W x 11 5/8" D; walnut finish; approximate weight 37 lbs; price \$149.95.

### NIKKO ELECTRIC CORP. OF AMERICA

### Model SS83

Sealed enclosure system; 2-way bookshelf with 8" woofer and 2 3/4" tweeter; response 40-21,000 Hz (reference not stated); 4000 Hz crossover frequency; 8 ohms impedance; 25 watts (dynamic) maximum input power; 9" H x 14 1/2" x 9" D; \$89.95 pair.

### OHM ACOUSTICS CORP.

### Ohm B

Infinite baffle enclosure system; 3-way floor standing with 12" woofer, 5 1/4" mid-range, and dome-type 1" tweeter; response 34-19,000 Hz at ±4.0 dB (average living room); 250 and 5000 Hz crossover frequencies; tweeter control; 8 ohms impedance; 26" H x 15" W x 10 3/4" D; oiled walnut finish; \$240.00.

### Ohm C

Infinite baffle enclosure system; 2-way floor standing with 10" woofer and dome-type 1" tweeter; response 34-18,000 Hz at ±5.0 dB (average living room); 1700 Hz crossover frequency; tweeter control; 8 ohms impedance; 25" H x 14" W x 9 3/4" D; oiled walnut; \$145.00.

### Ohm D

Infinite baffle enclosure system; 2-way floor standing with 10" woofer and 3" tweeter; response 42-18,000 Hz at ±5.0 dB (average living room) 2200 Hz crossover frequency; tweeter control; 8 ohms impedance; 25" H x 14" W x 8" D; oiled walnut; \$80.00.

### OLSON

### Environmental S-52

Tuned duct port enclosure system; 2-way bookshelf with 8" woofer and 5" tweeter; frequency response 25-20,000 Hz (reference not stated); front mounted level control; 8 ohms nominal impedance; 50 watts (peak) maximum input power; dimensions 17 1/2" H x 10 5/8" W x 8 3/4" D;



walnut finish; features removable wood grille; approximate weight 20 lbs; \$100.00 (pair \$190).

### Environmental S-72

Similar to S-82, but with 5" mid-range and 2" super tweeter; price \$200.00 (pair \$380).

### Environmental S-82

Sealed enclosure system; 3-way floor standing with 12" woofer, 10" mid-range horn, and 4" tweeter; frequency response 25-20,000 Hz

## Don't forget . . .

If you need additional information on any of the products listed in this magazine, don't hesitate to write directly to the manufacturers themselves. They're more than pleased to help. (See company address list beginning on page 6.)

**Always mention that you saw their product in the 1972 Stereo Directory & Buying Guide.**



(reference not stated); 800 Hz and 5000 Hz crossover frequencies; 8 ohms nominal impedance; 50 watts (peak) maximum input power; dimensions 23<sup>3</sup>/<sub>8</sub>" H x 14<sup>3</sup>/<sub>8</sub>" W x 11<sup>13</sup>/<sub>16</sub>" D; walnut finish; features mid-range and tweeter controls behind front grille; price \$250.00 (pair \$480).

**Mediterranean S-43**

Sealed enclosure system; 2-way bookshelf with 10" woofer and 2<sup>1</sup>/<sub>2</sub>" tweeter; frequency response 45-20,000 Hz (reference not stated); 8 ohms nominal impedance; 30 watts (peak) maximum input power; dimensions 15" H x 11<sup>3</sup>/<sub>4</sub>" W x 9<sup>3</sup>/<sub>4</sub>" D; walnut finish; approximate weight 20 lbs; price \$65.00 (pair \$120).

**S-70**

Sealed enclosure system; 2-way bookshelf with 4" woofer and wide dispersion 3" tweeter; frequency response 50-20,000 Hz (reference not stated); 2500 Hz crossover frequency; 8 ohms nominal impedance; 30 watts (peak) maximum input power; dimensions 8<sup>1</sup>/<sub>2</sub>" H x 4<sup>1</sup>/<sub>2</sub>" W x 8<sup>1</sup>/<sub>2</sub>" D; walnut and chrome finish; price \$35.00.

**S-930**

Sealed enclosure system; 2-way bookshelf with 10" woofer and 4" tweeter; frequency response 40-18,500 Hz (reference not stated); 8 ohms nominal impedance; 35 watts (peak) maximum input power; dimensions 22<sup>1</sup>/<sub>2</sub>" H x 13" W x 11<sup>5</sup>/<sub>8</sub>" D; walnut finish; approximate weight 33 lbs; price \$70.00 (pair \$120).

**PANASONIC**

(Matsushita Electric Corp. of America)

**SB-170**

Sealed enclosure system; 3-way bookshelf with 8" woofer, 5" mid-range, and 2" tweeter; response 35-20,000 Hz (reference not stated); 3000 and 7000 Hz crossover frequencies; 8 ohms impedance; 36 watts (peak) maximum input power; 13<sup>1</sup>/<sub>4</sub>" H x 21<sup>1</sup>/<sub>4</sub>" W x 7<sup>5</sup>/<sub>8</sub>" D; walnut; weight 14 lbs; \$99.95.

**SB-270**

Sealed enclosure system; 3-way bookshelf with 8" woofer, 5" mid-range, and 2" tweeter; response 35-20,000 Hz (reference not stated); 3000 and 7000 Hz crossover frequencies; 8 ohms impedance; 36 watts (peak) maximum input power; 13<sup>1</sup>/<sub>4</sub>" H x 21<sup>1</sup>/<sub>4</sub>" W x 7<sup>5</sup>/<sub>8</sub>" D; walnut; weight 14 lbs; \$139.95.

**SB-300**

Sealed enclosure system; 4-way bookshelf with 10" woofer, 5" mid-range, 3<sup>1</sup>/<sub>2</sub>" tweeter, and 1<sup>1</sup>/<sub>2</sub>" super-tweeter; response 35-20,000 Hz (reference not stated); 800, 5000 and 10,000 Hz crossover frequencies; 8 ohms impedance; 38 watts (peak) maximum input power; 13" H x 22<sup>1</sup>/<sub>2</sub>" W x 11<sup>3</sup>/<sub>4</sub>" D; teak; weight 22 lbs; \$99.95.

**SB-400**

Sealed enclosure system; 3-way bookshelf with 10" woofer, multicellular horn mid-range, and horn-type tweeter; response 35-20,000 Hz



(reference not stated); 650 and 6000 Hz crossover frequencies; mid-range and tweeter con-

trols; 8 ohms impedance; 50 watts (peak) maximum input power; 12<sup>1</sup>/<sub>2</sub>" H x 23<sup>1</sup>/<sub>4</sub>" W x 11<sup>3</sup>/<sub>4</sub>" D; teak; weight 26<sup>1</sup>/<sub>2</sub> lbs; \$129.95.

**SB-550**

Sealed enclosure system; 3-way floor standing with 12" woofer, 6" mid-range, and 4" tweeter; response 30-20,000 Hz (reference not stated); 500 and 5000 Hz crossover frequencies; mid-range and tweeter controls; 8 ohms impedance; 70 watts (peak) maximum input power; 25<sup>7</sup>/<sub>8</sub>" H x 15<sup>1</sup>/<sub>4</sub>" W x 11<sup>3</sup>/<sub>4</sub>" D; teak; \$169.95.

**SB-750**

Sealed enclosure system; 3-way floor standing with 12" woofer, two 6" mid-ranges, and two dome-type 4" tweeters; response 20-20,000 Hz (reference not stated); 600 and 5000 Hz crossover frequencies; mid-range and tweeter controls under grille; 8 ohms impedance; 85 watts (peak) maximum input power; 30" H x 19<sup>1</sup>/<sub>4</sub>" W x 11<sup>3</sup>/<sub>4</sub>" D; teak; weight 55 lbs; \$219.95.

**PILOT RADIO-TELEVISION CORP.**

**PSE-10**

Sealed enclosure system; 2-way bookshelf with 8" woofer and 3" tweeter; 8 ohms impedance; 9" H x 11<sup>1</sup>/<sub>4</sub>" W x 8" D; walnut, weight 7<sup>1</sup>/<sub>2</sub> lbs; \$100.00 pair.

**PIONEER**

(U.S. Pioneer Electronics Corp.)

**CS-05**

Omni-directional bass reflex enclosure system; 2-way floor standing with 8" woofer and three



cone-type tweeters; response 60-20,000 Hz (reference not stated); 8 ohms impedance; 40 watts (dynamic) maximum input power; 20" H x 14<sup>1</sup>/<sub>2</sub>" diameter; walnut; \$119.95.

**CS-44**

Sealed enclosure system; 2-way bookshelf with 8" woofer and cone-type 2<sup>1</sup>/<sub>2</sub>" tweeter; response 35-20,000 Hz (reference not stated); 8 ohms impedance; 25 watts (dynamic) maximum input power; 11<sup>1</sup>/<sub>8</sub>" H x 19<sup>1</sup>/<sub>8</sub>" W x 9<sup>3</sup>/<sub>4</sub>" D; oiled walnut; weight 18 lbs; \$67.50.

**CS-63DX**

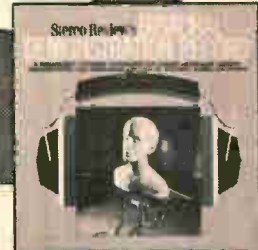
Sealed enclosure system; 4-way floor standing with 15" woofer, two 5" mid-ranges, horn-type tweeter, and two super-tweeters; response 20-22,000 Hz (reference not stated); mid-range and tweeter controls; 8 ohms impedance; 80 watts (dynamic) maximum input power; 28<sup>3</sup>/<sub>8</sub>" H x 18<sup>7</sup>/<sub>8</sub>" W x 13<sup>1</sup>/<sub>8</sub>" D; oiled walnut; \$259.00.

**CS-66**

Sealed enclosure system; 3-way bookshelf with 10" woofer, 6<sup>1</sup>/<sub>2</sub>" mid-range, and cone-type tweeter; response 35-20,000 Hz (reference not stated); tweeter control; 8 ohms impedance; 40 watts (dynamic) maximum input power; 12<sup>1</sup>/<sub>4</sub>" H x 22" W x 11<sup>1</sup>/<sub>2</sub>" D; \$109.00.

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**CS-99**

Sealed enclosure system; 5-way floor standing with 15" woofer, 5" mid-range, horn-type tweeter, cone tweeter, and dome super-tweeter; response 25-22,000 Hz (reference not stated); mid-range and tweeter controls; 8 ohms impedance; 80 watts (dynamic) maximum input power; 25" H x 16" W x 11 1/4" D; walnut; weight 46 lbs; \$215.00.

**CS-A500**

Sealed enclosure system; 3-way bookshelf with 10" woofer, 4 3/4" mid-range, and 3" tweeter; response 40-20,000 Hz (reference not stated); 800 Hz and 6000 Hz crossover frequencies; tweeter control; 8 ohms impedance; 50 watts (dynamic) maximum input power; 13" H x 22 1/2" W x 12 1/8" D; walnut; weight 32 lbs; \$149.00.

**CS-A700**

Sealed enclosure system; 3-way floor standing with 12" woofer, 4 3/4" mid-range, and horn-type



tweeter; response 35-20,000 Hz (reference not stated); 500 Hz and 4500 Hz crossover frequencies; mid-range and tweeter controls on front panel; 8 ohms impedance; 60 watts (dynamic) maximum input power; 26" H x 12 3/4" W x 15" D; walnut; individual speaker connections to manufacturer's multi-amp system; weight 37 lbs; \$189.00.

**CS-A770**

Bass reflex enclosure system; 4-way floor standing with 12" woofer, 6 1/2" lower mid-range, 4" upper mid-range, and horn-type tweeter; response 30-20,000 Hz (reference not stated); mid-range and tweeter controls; 8 ohms impedance; 80 watts (dynamic) maximum input power; 31 1/8" H x 19 1/8" W x 15 1/2" D; walnut; weight 70 lbs; \$299.00.

**CS-E400**

Sealed enclosure system; 2-way bookshelf with 8" woofer and dome-type tweeter; response



35-20,000 Hz (reference not stated); 2800 Hz crossover frequency; tweeter control on front panel; 8 ohms impedance, 30 watts (dynamic) maximum input power, 11 3/8" H x 20 1/4" W x 7 1/4" D; walnut; weight 23 lbs; \$79.00.

**CS-E500**

Infinite baffle enclosure system; 3-way bookshelf with 10" woofer, 5" mid-range, and 3" tweeter; response 37-20,000 Hz (reference not

stated); 650 Hz and 5000 Hz crossover frequencies, tweeter control on front panel; 8 ohms impedance; 50 watts (dynamic) maximum input power; 13" H x 21 1/2" W x 11 1/4" D; walnut; individual speaker connections to manufacturer's multi-amp system; weight 27 lbs; \$149.00.

**CS-E700**

Infinite baffle enclosure system; 3-way floor standing with 12" woofer, 5" mid-range, and



horn-type tweeter; response 35-20,000 Hz (reference not stated); 500 Hz and 4500 Hz crossover frequencies; mid-range and tweeter controls on front panel; 8 ohms impedance; 60 watts (dynamic) maximum input power; 26" H x 15" W x 11 3/4" D; oiled walnut; individual speaker connections to manufacturer's multi-amp system; weight 35 lbs; \$189.00.

**RADFORD AUDIO LTD.****Studio 270**

Transmission line enclosure system; 3-way floor standing with two 12" woofers, three mid-range units, and three dome-type tweeters; response 30-25,000 Hz (reference not stated); 100 watts (rms) maximum input power; 45" H x 18 3/4" W x 15" D; weight 110 lbs; \$500.00.

**Trident 50**

Sealed enclosure system; 3-way bookshelf; response 55-20,000 Hz at  $\pm 3 1/2$  dB (average living room); 8 ohms impedance; 12" H x 22" W x 10" D; weight 35 lbs; \$159.95.

**RECTILINEAR RESEARCH CORP.****Model III**

Sealed acoustic suspension enclosure system; 4-way floor standing with 12" woofer, 5" mid-range, two 2 1/2" cone tweeters, and two 2" super tweeters; frequency response 20-18,500 Hz at  $\pm 4$  dB (reference not stated); 500, 3000 and 11,000 Hz crossover frequencies; less than 2.5% HD at 50 Hz at 1W; mid-range and tweeter level controls; 8 ohms nominal impedance; requires 20 watts (rms) driving power; 100 watts (rms) maximum input power; dimensions 35" H x 18" W x 12" D; oiled walnut finish; approximate weight 70 lbs; price \$279.00. (A lowboy model is available with fretwork grille for \$299.00.)

**Model XI**

Bass reflex enclosure system; 2-way bookshelf with 10" woofer and 3" tweeter; frequency response 45-17,000 Hz at  $\pm 3$  dB (reference not stated); 1800 Hz crossover frequency; tweeter level control; 8 ohms nominal impedance; requires 10 watts (rms) driving power; 71 watts (IHF) maximum input power; dimensions 12" H x 23" W x 10 1/2" D; oiled walnut finish; price \$79.50.

**Model XII**

Sealed acoustic suspension enclosure system; 3-way floor standing with 10" woofer, 5" mid-range, and 2 1/2" tweeter; frequency response 45-17,000 Hz at  $\pm 3$  dB (reference not stated); 350 Hz and 4000 Hz crossover frequencies; mid-range and tweeter level controls; 8 ohms nominal impedance; requires 10 watts (rms) driving power; 70 watts (IHF) maximum input power; dimensions 25" H x 14" W x 10 3/4" D; oiled walnut finish; price \$139.00.

**Model "Mini III"**

Sealed acoustic suspension enclosure system; 3-way bookshelf with 8" woofer, 5" mid-range, and 2" tweeter; frequency response 50-18,500 Hz at  $\pm 4$  dB (reference not stated); 400 Hz and 8000 Hz crossover frequencies; mid-range and tweeter level controls; 4 ohms nominal impedance; 100 watts (IHF) maximum input power; dimensions 12" H x 19" W x 9 1/2" D; oiled walnut finish; approximate weight 25 lbs; price \$99.50.

**Model Xa**

Sealed enclosure system; 3-way floor standing with 10" woofer, 5" mid-range, and 2 1/2" tweeter; frequency response 30-18,500 Hz at  $\pm 4$  dB (reference not stated); 100 Hz and 8000 Hz crossover frequencies; mid-range and tweeter level controls; 4 ohms nominal impedance; requires 35 watts (rms) driving power; dimensions 25" H x 14" W x 10 3/4" D; oiled walnut finish; approximate weight 65 lbs; price \$199.00.

**RGF ENGINEERING & DESIGN CO.****RGF-3**

Sealed enclosure system; 3-way bookshelf with 10" woofer, 3 1/2" mid-range, and 3 1/2" tweeter; response 35-20,000 Hz (reference not stated); 4000 and 10,000 Hz crossover frequencies; 8 ohms impedance; 30 watts (rms) maximum input power; 12 3/4" H x 22" W x 9 1/2" D; oiled walnut; \$99.50.

**RGF-4**

Sealed enclosure system; 2-way bookshelf with 8" woofer and 3" mid-range/tweeter; response 40-18,000 Hz (reference not stated); 4000 Hz crossover frequency; 8 ohms impedance; 11" H x 18" W x 9" D; walnut \$69.50.

**RGF-100**

Sealed enclosure system; 3-way floor standing with 12" woofer, 6 1/2" mid-range, and two 3 1/2" tweeters; response 24-22,000 Hz (reference not stated); 650 and 5000 Hz crossover frequencies; 8 ohms impedance; 23 3/4" H x 15 3/4" W x 11 3/4" D; walnut; \$229.50.

**RGF-1015**

Infinite baffle enclosure system; 3-way floor standing with 12" woofer, 7" mid-range, and two tweeters; response 18-22,000 Hz (reference not stated); 650 and 5000 Hz crossover frequencies; 8 ohms impedance; 26 3/4" H x 22 3/4" W x 19 1/2" D; walnut; \$239.00.

**H. H. SCOTT, INC.****Model S-11C**

Sealed enclosure system; 3-way floor standing with 10" woofer, 3 1/2" mid-range, and 3" tweeter; response 35-20,000 Hz (reference not stated); 900 and 3500 Hz crossover frequencies; mid-range and tweeter controls; 8 ohms impedance; requires 10 watts (IHF) driving power; 50 watts (IHF) maximum input power; 24" H x 14 1/2" W x 11 1/4" D; walnut; weight 38 lbs; \$100.00.

**Model S-41**

Sealed enclosure system; 2-way bookshelf with 8" woofer and 3" tweeter; response 35-20,000 Hz (reference not stated); 1700 Hz crossover frequency; tweeter control; 8 ohms impedance; requires 10 watts (IHF) driving power; 35 watts (IHF) maximum input power; 10 1/2" H x 19" W x 9 3/4" D; walnut; weight 24 lbs; \$70.00.

**Model S-51**

Sealed enclosure system; 2-way floor standing with 10" woofer and 3 1/2" tweeter; response 30-20,000 Hz (reference not stated); 1200 Hz crossover frequency; tweeter control; 8 ohms impedance; requires 18 watts (IHF) driving power; 60 watts (IHF) maximum input power; 24" H x 14 1/2" W x 11 3/4" D; walnut; weight 43 lbs; \$90.00.

**SHERWOOD ELECTRONIC  
LABS., INC.**

**Berkshire III**

Sealed enclosure system; 3-way floor standing with 12" woofer, 5" mid-range, and wide disper-



sion 3 1/2" tweeter; response 28-22,000 Hz (reference not stated); 600 Hz and 5000 Hz crossover frequencies; mid-range and tweeter controls; 8 ohms impedance; requires 10 watts (dynamic) driving power; 60 watts (dynamic) maximum input power; 24" H x 14" W x 9" D; oiled walnut; weight 36 lbs.; \$129.95.

**Ravina III**

Sealed enclosure system; 3-way floor standing with 15" woofer, 5" mid-range, and wide dispersion 3 1/2" tweeter; response 24-22,000 Hz (reference not stated); 600 Hz and 5000 Hz crossover frequencies; mid-range and tweeter controls; requires 10 watts (dynamic) driving power; 70 watts (dynamic) maximum input power; 25" H x 17" W x 11 1/2" D; oiled walnut; weight 50 lbs.; \$169.95.

**Woodstock**

Sealed enclosure system; 2-way bookshelf with 8" woofer and 3 1/2" tweeter; response 40-18,000 Hz (reference not stated); 4000 Hz crossover frequency; tweeter control; 8 ohms impedance; 25 watts (EIA) maximum input power; 11" H x 18" W x 9" D; oiled walnut; \$59.95.

**SONY CORPORATION OF  
AMERICA**

**SS-4200**

Sealed enclosure system; 3-way floor standing with 8" woofer, 8" mid-range, and two cone-type 3" tweeters; response 50-20,000 Hz at ±5 dB (reference not stated); 600 Hz and 10,000 Hz crossover frequencies; tweeter control on front panel; 8 ohms impedance; 50 watts (IHF) maximum input power; 23 1/4" H x 13 3/4" W x 11 7/8" D; oiled walnut; removable grille; 30 lbs.; \$95.00.

**SS-9500**

Omni-directional sealed enclosure system; uses six 4" full-range speakers in "barrel"



motifs; response 50-18,000 Hz (reference not stated); 8 ohms impedance; 50 watts (IHF) maximum input power; 24" H x 16" diameter; oiled walnut; foam-filled top cushion; weight 30 lbs.; \$149.50.

1972 EDITION

**SOUNDCRAFTSMEN**

**Lancer SC-3X**

Tuned duct port enclosure system; 3-way bookshelf floor standing with 12" woofer, mid-range diffuser, and flared horn tweeter; frequency response 26-22,000 Hz (reference not stated); 1000 Hz and 3000 Hz crossover frequencies; tweeter level control; 8 ohms nominal impedance; requires 10 watts (dynamic) driving power; 60 watts (dynamic) maximum input power; dimensions 15 3/4" H x 23 1/2" W x 12 1/2" D; oiled walnut finish; features removable front panel grille; price \$199.50.

**Lancer SC-5**

Bass reflex with 2 tuned ports enclosure system; 3-way floor standing with 12" woofer in triaxial single speaker with compression tweeter; frequency response 28-20,000 Hz (reference not stated); 1000 Hz and 3500 Hz crossover frequencies; tweeter level control; 8 ohms nominal impedance; requires 5 watts (dynamic) driving power; 40 watts (dynamic) maximum input power; dimensions 23 1/2" H x 15 3/4" W x 12 1/2" D; oil walnut finish; price \$149.50.

**Lancer SC-6**

Sealed enclosure system; 4-way bookshelf with 12" woofer in triaxial single speaker with flared horn tweeter; frequency response 18-22,000 Hz (reference not stated); 1000 Hz and 3000 Hz crossover frequencies; tweeter level control; 8 ohms nominal impedance; 60 watts (dynamic) maximum input power; dimensions 16" H x 27" W x 14 1/8" D; features "aerodynamic bass energized" system using separate 12" loaded cone woofer; approximate weight 55 lbs; price \$249.50.

**Lancer 9534-X**

Tuned duct port enclosure system; 2-way bookshelf; frequency response 40-18,000 Hz (reference not stated); 3000 Hz crossover frequency; 8 ohms nominal impedance; requires 5 watts (dynamic) driving power; 30 watts (dynamic) maximum input power; dimensions 11 1/4" H x 23 1/2" W x 11 1/4" D; oiled walnut finish; price \$69.50.

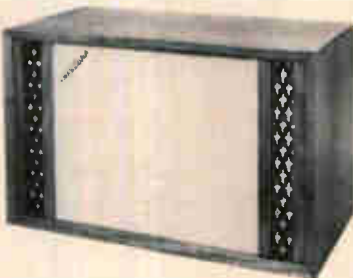
**Lancer 9535-2**

Tuned duct port enclosure system; 2-way bookshelf with 12" woofer and separate tweeter; frequency response 30-20,000 Hz (reference not stated); 3000 Hz crossover frequency; 8 ohms nominal impedance; requires 5 watts (dynamic) driving power; 35 watts (dynamic) maximum input power; dimensions 14 1/4" H x 25" W x 11 3/4" D; oiled walnut finish; price \$99.50.

**TANNOY (AMERICA) LTD.**

**Granada**

Tuned duct port enclosure system; bookshelf with manufacturer's 10" Concentric loudspeak-



er; 1200 Hz crossover frequency; balance and tweeter controls; 8 ohms impedance; 23 1/2" H x 14 7/8" W x 11 1/2" D; oiled walnut; \$185.00.

**Lancaster**

Bass reflex with duct port enclosure system; floor standing with manufacturer's 15" dual

Concentric speaker; response 35-20,000 Hz (reference not stated); 1000 Hz crossover frequency; balance and tweeter controls; 8 ohms impedance; 50 watts (dynamic) maximum input power; 29" H x 26" W x 19 5/8" D; oiled walnut; \$328.00.

**Mallorcan**

Tuned duct port enclosure system; bookshelf with manufacturer's 10" dual Concentric speaker; response 35-20,000 Hz (reference not stated); 1000 Hz crossover frequency; balance and tweeter controls; 8 ohms impedance; 14 5/8" H x 23 1/2" W x 11 1/2" D; oiled walnut; \$229.00.

**Belvedere**

Bass reflex with duct port enclosure system; floor standing with manufacturer's 15" dual Concentric speaker; response 35-20,000 Hz (reference not stated); 1000 Hz crossover frequency; balance and tweeter controls; 8 ohms impedance; 50 watts (dynamic) maximum input power; 33 1/2" H x 23 3/4" W x 16" D; oiled walnut; \$268.00.

**Orbitus-1**

Omni-directional tuned enclosure system; floor standing with manufacturer's 12" dual



Concentric loudspeaker; response 35-20,000 Hz (reference not stated); 1000 Hz crossover frequency; balance and tweeter controls; 8 ohms impedance; 30 watts (rms) maximum input power; 29" H x 17" W x 17" D; oiled walnut; \$255.00.

**Stuart**

Bass reflex with duct port enclosure system; floor standing with manufacturer's 12" dual



Concentric speaker; response 35-20,000 Hz (reference not stated); 1000 Hz crossover frequency; balance and tweeter controls; 8 ohms impedance; 30 watts (dynamic) maximum input power; 25 1/2" H x 24 3/8" W x 16 7/8" D; oiled walnut; \$304.00.

**Studio Professional Monitor**

Bass reflex enclosure system; floor standing

with manufacturer's 15" dual Concentric loud-speaker; response 35-20,000 Hz (reference not stated); 1000 Hz crossover frequency; balance and tweeter controls; 16 ohms impedance; 50 watts (dynamic) maximum input power; 43" H x 30 1/2" W x 24" D; walnut vinyl; \$425.00.

### TEAC CORP. OF AMERICA

#### LS-80M

Sealed enclosure system; 3-way floor standing with 12" woofer, 5" mid-range, and horn-type tweeter; response 30-20,000 Hz (reference not stated); 450 and 5000 Hz crossover frequencies; mid-range and tweeter controls; 8 ohms impedance; 60 watts (rms) maximum input power; 26 3/8" H x 16" W x 11 3/4" D; weight 42 lbs; \$199.50.

### TOSHIBA AMERICA, INC.

#### SS-26

Sealed enclosure system; 3-way bookshelf with 10" woofer, 5" mid-range, and horn-type tweeter; response 35-20,000 Hz (reference not stated); 1000 and 5000 Hz crossover frequencies; tweeter control; 8 ohms impedance; 50 watts (peak) maximum input power; 13 3/8" H x 22 1/2" W x 10 1/4" D; walnut; weight 26 lbs; \$114.95.

#### SS-36

Sealed enclosure system; 4-way floor standing with 12" woofer, 6 1/2" mid-range, horn tweeter, and 3" super-tweeter; response 30-20,000 Hz (reference not stated); 1000, 5000 and 9000 Hz crossover frequencies; mid-range and tweeter controls; 8 ohms impedance; 60 watts (peak) maximum input power; 25 1/8" H x 15 3/8" W x 11 3/16" D; walnut; weight 33 lbs; \$174.95.

#### SS-840

Tuned duct port enclosure system; 3-way floor standing with 8" woofer, 5" mid-range, and



cone-type 2 1/2" tweeter; response 40-20,000 Hz (reference not stated); 2000 and 9000 Hz crossover frequencies; 8 ohms impedance; 20 watts (peak) maximum input power; overall size 28 1/2" H x 19 3/4" W x 15 1/8" D; weight 31 lbs; \$199.50 (pair).

### TRUSONIC

#### Model T-25

Tuned duct port enclosure system; 2-way bookshelf with 5" woofer and 5" mid-range/tweeter; response 65-15,000 Hz (reference not stated); 5000 Hz crossover frequency; 8 ohms impedance; 35 watts (peak) maximum input power; 9 1/2" H x 15 1/2" W x 7" D; walnut; weight 17 lbs; \$39.95.

#### Model T-28

Tuned duct port enclosure system; 2-way bookshelf with 8" woofer and compression-type tweeter; response 40-19,500 Hz (reference not

stated); 4000 Hz crossover frequency; tweeter control; 8 ohms impedance; 35 watts (peak) maximum input power; walnut; weight 22 lbs; \$59.95.

#### Model T-210

Tuned duct port enclosure system; 2-way bookshelf with 10" woofer and toroid 3" tweeter; re-



sponse 30-25,000 Hz (reference not stated); 4000 Hz crossover frequency; tweeter control; 8 ohms impedance; 45 watts (peak) maximum input power; 13 1/2" H x 22" W x 10 1/2" D; walnut; weight 38 lbs; \$89.95.

#### Model T-312

Tuned duct port enclosure system; 3-way floor standing with 12" woofer, 5" mid-range, and toroid 3" tweeter; response 20-25,000 Hz (reference not stated); 2000 and 5000 Hz crossover frequencies; mid-range and tweeter controls; 8 ohms impedance; 60 watts (peak) maximum input power; 24" H x 15 1/4" W x 12" D; walnut; weight 49 lbs; \$129.95.

### ULTRA-TONE LIMITED

#### Ultra I

Sealed enclosure system; 9 full-range bookshelf speakers with 8 facing to rear and 1 forward for wide stereo dispersion; response 20-20,000 Hz (reference not stated); 8 ohms impedance; 13" H x 23 1/2" W x 11" D; walnut; weight 35 lbs; \$399.95. (pair).

### UNIVERSITY SOUND

#### El Paso

Sealed enclosure system; 2-way bookshelf with 8" woofer and 3" tweeter; 8 ohms impedance; 10 1/2" H x 19" W x 9 3/8" D; oiled walnut; \$62.95.

#### Estoril

Sealed enclosure system; floor standing with single 12" 3-way speaker and passive bass 12" energizer; response 25-40,000 Hz (reference not stated); 1000 Hz and 3000 Hz crossover frequencies; tweeter control; 8 ohms impedance; 40 watts (dynamic) maximum input power; 27" H x 16" W x 14" D; oiled walnut; \$192.44.

#### Laredo

Sealed enclosure system; 3-way floor standing with 12" woofer, 8" mid-range, and Sphericon tweeter; 350 Hz and 3000 Hz crossover frequencies; tweeter control; 8 ohms impedance; 40 watts (dynamic) maximum input power; 24" H x 15 1/4" W x 12 3/8" D; oiled walnut; \$129.95.

#### Project M

Sealed enclosure system; 2-way bookshelf with 11" woofer and 2 1/2" tweeter; response 30-20,000 Hz (reference not stated); 1000 Hz crossover frequency; 8 ohms impedance; requires 30 watts (dynamic) driving power; 60 watts (dynamic) maximum input power; 12 3/4" H x 23 1/2" W x 11 7/8" D; oiled walnut; \$109.95.

#### Presidio

Sealed enclosure system; floor standing with single 12" 3-way speaker and passive bass 12" energizer; response 25-40,000 Hz (reference not stated); 1000 Hz and 3000 Hz crossover frequencies; tweeter control; 8 ohms impedance; 40 watts (dynamic) maximum input power;



er; 23" H x 24" W x 15" D; oiled walnut; \$199.95.

#### Ultra-D

Sealed enclosure system; 3-way bookshelf outdoor with 10" woofer, 4" mid-range, and 3 1/2"



tweeter; 1000 Hz and 5000 Hz crossover frequencies; mid-range and tweeter controls; 8 ohms impedance; 32 watts (dynamic) maximum input power; 11 7/8" H x 23 3/4" W x 9 3/4" D; oiled walnut; \$89.95.

#### Vegas

Sealed enclosure system; floor standing with



single 15" 3-way speaker; tweeter control; 8 ohms impedance; 35 watts (dynamic) maximum input power; 23" H x 24" W x 15" D; oiled walnut; \$169.95.

### UTAH ELECTRONICS

(Div. of Utah-American Corp.)

#### AS-1

Sealed enclosure system; 2-way bookshelf with 10" woofer and 3 1/2" tweeter; response 32-18,500 Hz (reference not stated); tweeter control; 8 ohms impedance; 20 watts (rms) maximum input power; 12" H x 24" W x 12" D; oiled walnut; \$79.95.

#### AS-6

Sealed enclosure system; 3-way floor standing with 12" woofer, 10" x 4" mid-range, and compression-type tweeter; response 35-20,000 Hz (reference not stated); mid-range and tweeter controls; 8 ohms impedance; 30 watts (rms) maximum input power; 24" H x 14" W x 13 1/2" D; oiled walnut; \$120.00.

#### AS-12

Sealed enclosure system; 2-way bookshelf with 8" woofer and 3 1/2" tweeter; response 40-18,000

Hz (reference not stated); 8 ohms impedance; 12½ watts (rms) maximum input power; 11" H x 18" W x 9" D; walnut; \$49.95.

#### HS-4

Tuned duct port enclosure system; 3-way floor standing with 12" woofer, horn-type mid-range, and 3½" tweeter; response 30-18,000 Hz (reference not stated); tweeter control; 8 ohms impedance; 20 watts (rms) maximum input power; 25¾" H x 15" W x 14" D; walnut; \$94.50.

#### OM-1

Sealed omni-directional enclosure system; 2-way floor standing with 8" woofer and 3" tweeter;



response 35-18,500 Hz (reference not stated) 4500 Hz crossover frequency; 8 ohms impedance; 30 watts (peak) maximum input power; 14½" H x 9¾" W x 9¾" D; walnut; weight 14 lbs; \$69.95.

#### V-M CORP.

#### Model 85

Spiral bass reflex enclosure system; 2-way floor standing with 8" woofer and cone type 3½"



tweeter; response 35-20,000 Hz (reference not stated); 2000 Hz crossover frequency; 8 ohms impedance; 40 watts (rms) maximum input power; 20¾" H x 26" W x 26" D; pecan finish; Model 84 is similar but in contemporary cube 20" H x 19½" W x 19½" D—\$170.00; weight 65 lbs; \$185.95.

#### Model 91

Infinite baffle enclosure system; 2-way bookshelf with 8" woofer and 3" tweeter; response 40-18,500 Hz at ±5.0 dB (average living room); tweeter control; 1850 Hz crossover frequency; 8 ohms impedance; 55 watts (peak) maximum input power; 11¾" H x 20" W x 10" D; weight 28 lbs.; \$66.00.

#### Model 93

Infinite baffle enclosure system; 3-way bookshelf with 10" woofer, 4½" mid-range, and dome-type 1" tweeter; response 37-22,000 Hz at ±5.0 dB (average living room); 1000 and 5000 Hz crossover frequencies; mid-range and tweeter controls; 8 ohms impedance; 40 watts (rms) maximum input power; 13½" H x 23" W x 11¾" D; weight 41 lbs; \$134.00.

#### WEBCOR

#### SP-5

Sealed enclosure system; 3-way bookshelf with 8" woofer, mid-range, and tweeter; response 40-20,000 Hz (reference not stated); mid-range and tweeter controls; 10" H x 18" W x 8" D; walnut; \$79.95.

#### WHARFEDALE

(British Industries Co.)

#### Model W25

Sealed enclosure system; 2-way bookshelf with 8" woofer, mid-range, and wide dispersion tweeter; response 35-18,500 Hz (reference not stated); tweeter control; 8 ohms impedance; requires 10 watts (IHF) driving power; 35 watts (IHF) maximum input power; 10" H x 15½" W x 8" D; oiled walnut; \$58.75.

#### Model W35

Sealed enclosure system; 3-way floor standing (corner) with 8" woofer, 3¼" mid-range, and



2½" tweeter; response 35-18,500 Hz (reference not stated); mid-range and tweeter controls; 8 ohms impedance; requires 10 watts (IHF) driving power; 40 watts (IHF) maximum input power; 15" H x 15" W x 8" D; oiled walnut; \$82.00.

#### Model W45

Sealed enclosure system; 3-way bookshelf with 10" woofer, 3¼" mid-range, and wide dispersion tweeter; response 30-18,500 Hz (reference not stated); mid-range and tweeter controls; 8 ohms impedance; requires 10 watts (IHF) driving power; 40 watts (IHF) maximum input power; 12" H x 22" W x 10" D; oiled walnut; \$117.00.

#### Model W60E

Sealed enclosure system; 3-way floor standing with 12½" woofer, 5" mid-range, and dome-



type 1" tweeter; response 30-20,000 Hz (reference not stated); 8 ohms impedance; requires 15 watts (IHF) driving power; 60 watts (IHF) maximum input power; 24" H x 15" W x 12" D; \$153.00.

#### Model W70E

Sealed enclosure system; 3-way floor standing with 15" woofer, 5" mid-range, and dome-type 1" tweeter; response 25-20,000 Hz (reference not stated); mid-range and tweeter controls;



8 ohms impedance; requires 15 watts (IHF) driving power; 75 watts (IHF) maximum input power; 24" H x 22¾" W x 13¾" D; \$223.00.

#### Model W80A (Variflex)

Sealed enclosure system; 4-way floor standing with 12½" woofer, 5" mid-range, sub-treble tweeter, and super-tweeter; response 20-25,000 Hz (reference not stated); mid-range and tweeter controls; 8 ohms impedance; requires 25 watts (IHF) driving power; 100 watts (IHF) maximum input power; 29" H x 17¼" W x 17" D; walnut; rear and upward facing speakers with disc reflectors to vary sound distribution pattern; \$317.60.

#### WOLLENSAK

(3M Co., Mincom Div.)

#### Model A-1050

Sealed enclosure system; response 80-12,000



Hz (reference not stated); 8 ohms impedance; requires 6 watts (rms) driving power; 7¾" cube on pedestal; \$79.95.

#### YAMAHA INTERNATIONAL CORP.

#### NS20B

Open back enclosure system; 3-way floor standing with 20" x 27" woofer, 8" mid-range, and horn-type 2" tweeter; tweeter control; 20 watts (rms) maximum input power; 26" H x 33" W x 14" D; oiled walnut; foam polystyrene woofer; \$199.50.

#### NS30B

Open back enclosure system; 3-way floor standing with 25" x 35" woofer, 12" mid-range, and horn-type 2" tweeter; tweeter control; 30 watts (rms) maximum input power; 29" H x 39" W x 14" D; oiled walnut; foam polystyrene woofer; \$299.50.

#### NS230

Open back enclosure system; 2-way floor standing with 12½" x 18" woofer and 2" tweeter; 20" H x 14" W x 7" D; oiled walnut; foam polystyrene woofer; \$59.50.

#### NS250

Open back enclosure system; 2-way floor standing with 15" x 20" woofer and horn-type tweeter; tweeter control; 23½" H x 16½" W x 7½" D; oiled walnut; foam polystyrene woofer; \$99.50.

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CIRCLE NO. 33 ON READER SERVICE CARD

# Live and let live



10-20,000 Hz

400-2,500 Hz

# 11

## Accessories

Headphones—Raw Tape—Microphones—Miscellaneous

**T**HE most obvious reason for using stereo headphones is the ability to listen at high volume levels without disturbing other members of the family or the neighbors. While many high-fidelity enthusiasts would not consider their music systems to be part of the "noise pollution" scene, other people sometimes take a different view. Most stereo headphones provide this benefit in reverse, isolating the wearer from outside noises which might interfere with his listening enjoyment.

Another unique characteristic of headphone listening is the removal of the wearer—acoustically speaking—from his environment. Room characteristics, which have so much to do with loudspeaker performance, have no effect on headphone sound. The listener hears only what the microphones in the concert hall or recording studio picked up. The effect, especially to one experiencing it for the first time, can be very impressive.

Most stereo headphones are miniature dynamic loudspeakers, with cones from 2½" to 3½" in diameter, designed to couple to the ear cavity instead of to a large room volume. Their bass response, if the air

seal around the ears is tight, can match that of the finest speaker systems. Headphones share most of the sonic aberrations of speakers, and differ as widely in their sound as do speakers. For this reason, listening is the best way to make a selection. Fortunately, listening can be done in a dealer's showroom with as much validity as in the home.

A few low-priced headphones use magnetic transducers similar in principle to telephone headsets. These are audibly inferior to most dynamic headsets. Some headphones have miniature two-way speakers in each earpiece, with a separate high-frequency speaker or "tweeter". Often these have individual tweeter-level controls and individual volume controls on each earpiece.

The best—and most expensive—headphones use electrostatic generating elements. They may not be adaptable to low-powered, inexpensive amplifiers and are quite heavy and bulky as compared to most dynamic headphones. However, it is helpful to listen to a good electrostatic headphone before making a choice, if only to provide a frame of reference.

JULIAN D. HIRSCH

### AKAI AMERICA, LTD.

#### ASE-22

Moving coil (dynamic); response 20-20,000 Hz (reference not stated); sensitivity 1.0 mW; distortion 1% at 1.0 mW; 8 ohms impedance; ½ W maximum input (per phone); 6' cord (coiled); 20 oz; individual earpiece volume control; price n.a.

### AKG

(North American Philips Corp.)

#### Model K-60

Moving coil (dynamic); response 20-20,000 Hz (reference not stated); sensitivity 1.0 mW at



1000 Hz produces 112 dB SPL; distortion <1% at 125 dB SPL; 600 ohms impedance; weight 11 oz; \$39.50.

#### Model K-120

Moving coil (dynamic); response 30-20,000 Hz (reference not stated); sensitivity 1.0 mW at 1000 Hz produces 112 dB SPL; distortion <1% at 125 dB SPL; 600 ohms impedance; weight 12 oz; \$22.50.

#### Model K-180

Moving coil (dynamic); response 16-20,000 Hz (reference not stated); sensitivity 1.0 mW at 1000 Hz produces 112 dB SPL; distortion <1% at 125 dB SPL; 600 ohms impedance; 85" cord length (coiled); weight 21 oz; control to move headphone driver back and forth with headphone cup; \$69.00.

1972 EDITION

### ALLIED RADIO SHACK

#### Custom Pro

Moving coil (dynamic); response 20-20,000 Hz



(reference not stated); 4 → 16 ohms impedance; bass port; \$23.95.

#### Pro-1

Moving coil (dynamic); response 10-24,000 Hz (reference not stated); 8 ohms impedance; 10' cord length (coiled); fluid-filled ear cushions; individual earphone volume control; \$49.95.

### AUDIOTEX

(GC Electronics)

#### Model 30-5204

Moving coil (dynamic); response 20-20,000 Hz (reference not stated); 4 → 16 ohms impedance; 0.8 W maximum input (per phone); 6' cord (coiled); individual earpiece slider volume control; \$29.95.

#### Model 30-5206

Moving coil (dynamic); response 10-20,000 Hz (reference not stated); 4 → 16 ohms impedance; 6' cord (coiled); \$59.95.

### BEYER

#### DT 96 A

Moving coil (dynamic); frequency response 30-17,000 Hz (reference not stated); sensitivity 1.0 mW at 400 Hz produces 110 dB (reference  $2 \times 10^{-4}$  μbar); 800 ohms impedance; 100 mW maximum input (per phone); 5' cord length (uncoiled); weight 8 oz; price \$37.50.

#### DT 100

Moving coil (dynamic); frequency response 30-18,000 Hz (reference not stated); sensitivity 1.0 mW at 400 Hz produces 110 dB (reference  $2 \times 10^{-4}$  μbar); 10 ohms impedance; 1.0 W maximum input (per phone); price \$57.50.

#### DT 480

Moving coil (dynamic); frequency response 20-18,000 Hz (reference not stated); sensitivity 1.0 mW at 400 Hz produces 115 dB (reference  $2 \times 10^{-4}$  μbar); 200 ohms impedance; 1.0 W maximum input (per phone); 5' cord length (uncoiled); price \$75.00.

#### DT 900

Moving coil (dynamic); frequency response 30-18,000 Hz (reference not stated); 2000 ohms impedance; 200 mW maximum input (per phone); 6' cord length (uncoiled); price \$29.95.

### DAVID CLARK COMPANY

#### Clark/100A

Moving coil (dynamic); frequency response 20-18,000 Hz at ± 3 dB (subjective); sensitivity 1.0 mW at 1000 Hz produces 100 dB (reference 0.0002 μbar); distortion <0.2% at 100 phn; 17 ohms impedance; 1.0 W maximum input (per phone); 8' cord length (uncoiled); weight 16 oz; also available in 300, 600 and 1200 ohm impedances; price \$50.00.

#### Clark/200

Permanent magnet; frequency response 20-17,000 Hz (reference not stated); sensitivity 1.0 mW at 1000 Hz produces 105 dB (reference 0.0002 μbar); 8 ohms impedance; 1.0 W input; weight 17 oz; price \$29.00.

**Clark/250**

Similar to Clark/200, but with individual ear-phone volume control; price \$34.00.

**Clark/300**

Permanent magnet; frequency response 20-17,000 Hz (reference not stated); sensitivity



1.0 mW at 1000 Hz produces 105 dB (reference 0.0002  $\mu$ bar); 8 ohms impedance; 1.0 W maximum input (per phone); 10' cord length (uncoiled); price \$21.00.

**FISHER RADIO****HP-70**

Moving coil (dynamic); response 18-22,000 Hz (reference not stated); sensitivity 2.5 mW pro-



duces 100 dB SPL; 16 ohms impedance; 0.7 W maximum input (per phone); 8' cord; \$29.95.

**HP-100**

Moving coil (dynamic); response 18-22,000 Hz (reference not stated); sensitivity 2.0 mW at 1000 Hz produces 100 dB; 50 ohms impedance; 0.7 W maximum input (per phone); 8' cord (uncoiled); 10 oz; \$49.95.

**HITACHI SALES CORP.****HD-66**

Moving coil (dynamic); response 20-18,000 Hz (reference not stated); distortion <1.0% at 1 mW; 8 ohms impedance; 0.5 W maximum input (per phone); 12 oz; \$24.95.

**KENWOOD ELECTRONICS, INC.****KH-71**

Moving coil (dynamic); response 20-20,000 Hz

(reference not stated); 8 ohms impedance; 0.5 W maximum input (per phone); 10' cord length (uncoiled); weight 16 oz; \$49.95.

**KLH RESEARCH & DEVELOPMENT CORP.****Model Eighty**

Dynamic; response 20-20,000 Hz at  $\pm 4$  dB; sensitivity 1 mW at 1000 Hz produces 112 dB (80  $\mu$ bar); distortion 0.5% at 112 dB SPL; 600 ohms impedance; 1.66 mW maximum input (per phone); 10' cord (uncoiled); weight 11 1/4 oz; black and grey; coiled cord; special head-band webbing conforms to shape of head exactly, may be driven from 0-600 ohms source; \$49.95.

**KOSS ELECTRONICS INC.****ESP-6**

Electrostatic; frequency response 30-19,000 Hz at  $\pm 5$  dB; sensitivity 80 dB SPL (reference 0.0002 dyne/cm<sup>2</sup>); distortion < 0.2% at 110 dB SPL; 4  $\rightarrow$  16 ohms impedance; 10' cord length (uncoiled); weight 27 oz; black; fluid-filled earcups for ambient noise isolation, self-contained polarizer; price \$95.00.

**ESP-9**

Electrostatic; frequency response 15-15,000 Hz at  $\pm 2$  dB; sensitivity 80 dB SPL (reference



0.0002 dyne/cm<sup>2</sup>; distortion <0.2% at 110 dB SPL; 4  $\rightarrow$  16 ohms impedance; 10' cord length (uncoiled); weight 27 oz; black; fluid-filled earcups for ambient noise isolation; designed for very critical studio monitoring; price \$150.00.

**K-6LC**

Moving coil (dynamic); frequency response 10-16,000 Hz (reference not stated); distortion unmeasurable at 95 dB SPL; 4  $\rightarrow$  16 ohms impedance; 10' cord length (uncoiled); brown/beige; individual earphone volume control (Model K-6 available without volume controls for \$26.50); price \$29.95.

**KO-727B**

Moving coil (dynamic); frequency response 10-18,000 Hz (reference not stated); distortion unmeasurable at 95 dB SPL; 4  $\rightarrow$  16 ohms impedance; 10' cord length (uncoiled); weight 19 oz; dark green; price \$34.95.

**KRD-711 "Red Devil"**

Moving coil (dynamic); frequency response 10-17,000 Hz (reference not stated); total harmonic distortion < 1/2% at 110 dB SPL; 3.2  $\rightarrow$  600 ohms impedance; 5 V maximum input (per phone); 10' cord length (coiled); weight 12 oz; red; solid plastic; price \$29.95.

**PRO-4AA**

Moving coil (dynamic); frequency response 10-20,000 Hz (reference not stated); distortion negligible at 95 dB SPL; 4  $\rightarrow$  16 ohms impedance; 10' cord length (uncoiled); weight 19 oz; fluid-filled earcups for ambient noise isolation; price \$60.00.

**SP-3XC**

Frequency response 10-14,000 Hz (reference not stated); 4  $\rightarrow$  16 ohms impedance; 10' cord length (uncoiled); brown; \$19.95.

**SP-5SM**

Similar to SP-3XC, but with lavalier switch to change from stereo to monaural; price \$24.95.

**MIDLAND****Model 21-328B**

Moving coil (dynamic); frequency response 20-20,000 Hz (reference not stated); 8 ohms impedance; coiled cord; weight 16 oz; gray; separate earphone level controls; price \$25.00.

**PIONEER**

(U.S. Pioneer Electronics Corp.)

**SE-20A**

Moving coil (dynamic); response 20-18,000 Hz (reference not stated); 4  $\rightarrow$  16 ohms impedance; 0.5 W maximum input (per phone); 8' cord (uncoiled); weight 13 oz; \$24.95.

**SE-30**

Moving coil (dynamic); response 20-20,000 Hz (reference not stated); 4  $\rightarrow$  16 ohms impedance; 0.5 W maximum input (per phone); \$29.95.

**SE-50**

Moving coil (dynamic); response 20-20,000 Hz (reference not stated); 4  $\rightarrow$  16 ohms impedance; 0.5 W maximum input (per phone); 16' cord (coiled); weight 24 oz; tweeter control on each earpiece; volume control on each earpiece; \$49.95.

**SE-L20**

Moving coil (dynamic); response 20-20,000 Hz (reference not stated); 4  $\rightarrow$  16 ohms impedance; 0.3 W maximum input (per phone); \$29.95.

**Model SE-L40**

Moving coil (dynamic); response 20-20,000 Hz (reference not stated); 4  $\rightarrow$  16 ohms impedance; 0.3 W maximum input (per phone); \$39.95.

**SANSUI ELECTRONICS CORP.****SS-2**

Moving coil (dynamic); response 20-18,000 Hz (reference not stated); distortion <1% at 1 mW; 8 ohms impedance; 500 mW maximum input (per phone); 6' cord length (uncoiled); weight 12 1/2 oz; black and white; \$14.95.

**SS-10**

Moving coil (dynamic); response 20-20,000 Hz (reference not stated); 8 ohms impedance; 500 mW maximum input (per phone); 10' cord length (coiled); weight 22 oz; cream; individual headphone volume control; \$29.95.

**SHARPE AUDIO DIV.**

(Scintrex, Inc.)

**Model 7**

Moving coil (dynamic); response 15-20,000 Hz (reference not stated); sensitivity 0.34 V at 100 dB SPL; distortion 0.9% at 1000 Hz; 4  $\rightarrow$  16 ohms impedance; 1.0 W maximum input (per phone); 10' cord (coiled); 9 oz; bronze; \$19.95.

**Model 9B**

Moving coil (dynamic); response 15-20,000 Hz (reference not stated); sensitivity 0.1 V at 100 dB SPL; distortion 0.25% at 1000 Hz; 4  $\rightarrow$  16 ohms impedance; 1.0 W maximum input (per phone); 10' cord (coiled); 16 oz; grey; \$29.95.

**Model 10B**

Moving coil (dynamic); response 30-15,000 Hz at  $\pm 3.0$  dB; sensitivity 0.23 V at 100 dB SPL; distortion 0.3% at 1000 Hz; 4  $\rightarrow$  16 ohms impedance; 2.0 W maximum input (per phone); 10' cord (coiled); 18 oz; green; \$39.95.

**Model 660/PRO**

Moving coil (dynamic); response 20-20,000 Hz



at  $\pm 3.0$  dB; sensitivity 0.82 V at 100 dB SPL; distortion 0.6% at 1000 Hz; 4  $\rightarrow$  16 ohms impedance; 1.0 W maximum input (per phone); 10' cord (coiled); 18 oz; bronze; \$60.00.

**Model 770**

Moving coil (dynamic); response 20-20,000 Hz at  $\pm 3.0$  dB; sensitivity 0.82 V at 100 dB SPL; dis-



tortion 0.6% at 1000 Hz; 4  $\rightarrow$  16 ohms impedance; 1.0 W maximum input (per phone); 10' cord (coiled); 19 oz; walnut; \$100.00.

**STANFORD INTERNATIONAL**

**MB K61**

Moving coil (dynamic); response 20-16,000 Hz (reference not stated); sensitivity 0.2 mW produces 100 phn; 16 ohms impedance; 7 1/2' cord (uncoiled); weight 12 oz; \$14.95.

**MB K600**

Moving coil (dynamic); response 16-20,000 Hz (reference not stated); sensitivity 0.2 mW produces 100 dB phn; distortion <0.3% at 120 phn; 400 ohms impedance; 0.4 W maximum input (per phone); 7 1/2' cord (uncoiled); weight 14 oz; \$69.95.

**STANTON MAGNETICS INC.**

**Dynaphase I**

Moving coil (dynamic) with separate woofer and tweeter; frequency response 30-18,000 Hz at  $\pm 6$  dB; sensitivity 0.11 V at 1000 Hz produces 100 dB SPL; distortion <1.0% at 115 dB SPL; 12 ohms impedance; 0.5 W rms maximum input (per phone); 10' cord length (uncoiled); weight 28 oz; beige; price \$59.95.

**Isophase**

Electrostatic; frequency response 30-15,000 Hz at  $\pm 3$  dB; sensitivity 2 V at 1000 Hz produces 100 dB SPL; distortion <1.0% at 115 SPL; 4  $\rightarrow$  16 ohms impedance; 11' cord length;



weight 15 oz; beige; protective cut-out circuit; connects through "polarizer" to speaker terminals; price \$159.95.

1972 EDITION



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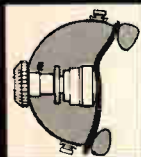
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**11**

**Headphones**

**SUPEREX ELECTRONICS CORP.**

**PEP-77C**

Electrostatic; frequency response 10-22,000 Hz at  $\pm 5$  dB; 4  $\rightarrow$  16 ohms impedance; 5 W minimum input (to energizer); 15' cord length (coiled); weight 12 oz; uses "console" energizer—included; two phone accommodation; separate channel grounds; price \$99.00.

**PROB-V**

Moving coil woofer (dynamic) and ceramic tweeter; frequency response 16-25,000 Hz (reference not stated); 4  $\rightarrow$  16 ohms impedance; 2 W maximum input (per phone); 10' cord length (coiled); price \$59.95.

**SST**

Moving coil woofer (dynamic) and ceramic tweeter; frequency response 20-20,000 Hz (reference not stated); sensitivity 15 mW; 4  $\rightarrow$  16 ohms impedance; 2 W maximum input (per phone); 15' cord length (coiled); green; individual volume and tweeter level controls on earphone; price \$39.95.

**ST-M Stereo Master**

Moving coil woofer (dynamic) and ceramic tweeter; frequency response 20-20,000 Hz (reference not stated); 8  $\rightarrow$  16 ohms impedance; 2 W maximum input (per phone); 7' cord length (uncoiled); tweeter level control on each earphone; price \$29.95.

**ST-PRO-B**

Moving coil woofer (dynamic) and ceramic tweeter; frequency response 18-22,000 Hz (reference not stated); 4  $\rightarrow$  16 ohms impedance; 2 W maximum input (per phone); 7' cord length (coiled); price \$50.00.

**ST-S-U**

Moving coil (dynamic); frequency response 30-15,000 Hz (reference not stated); switch selected 4  $\rightarrow$  16 or 2000 ohms impedance; 2 W maximum input (per phone); 7' cord length (uncoiled); price \$31.95.

**ST-VC**

Moving coil (dynamic); frequency response 30-15,000 Hz (reference not stated); 4  $\rightarrow$  16 ohms impedance; 2 W maximum input (per phone); 7' cord length (uncoiled); for the hard-of-hearing with individual earphone volume controls; price \$27.95.

**SW-2 Swinger**

Moving coil (dynamic); frequency response 30-16,000 Hz (reference not stated); 4  $\rightarrow$  16 ohms impedance; 2 W maximum input (per phone); 10' cord length (coiled); white; price \$24.95.

**TELEX COMMUNICATIONS DIV.**

**Serenta**

Moving coil (dynamic); response 20-20,000 Hz (reference not stated); 4  $\rightarrow$  16 ohms impedance; 8' cord length; tone control and comfort control to adjust earphone pressure; \$59.95; Also available is Serenta II without tone control; 600 ohms; \$44.95; a similar version, Model ST-20 has 16-15,000 Hz response; 4  $\rightarrow$  16 ohms; remote control; \$34.95.

**Studio 1**

Moving coil (dynamic); response 20-22,000 Hz (reference not stated); sensitivity 105 dB SPL/mW; distortion <1.0% at 122 dB SPL; 3  $\rightarrow$  16 ohms impedance; 1.0 W maximum input (per phone); 25' cord length (uncoiled); weight 24 oz; tone & volume controls on each earphone; \$99.95; also available is Studio 2 without controls; \$84.95.

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**11**

**Raw Tape**

**AMPEX CORP.**

**311 1.5-mil Acetate Base Tape**

3" reel, 150 feet .....\$0.90  
 5" reel, 600 feet .....\$2.25  
 7" reel, 1200 feet .....\$3.50

**321 1.0-mil Acetate Base Tape**

7" reel, 1800 feet .....\$5.50

**331 1.5-mil Polyester Base Tape**

5" reel, 300 feet .....\$2.65  
 7" reel, 1200 feet .....\$4.25

**341 1.0-mil Polyester Base Tape**

3" reel, 275 feet .....\$1.25  
 5" reel, 900 feet .....\$3.60  
 7" reel, 1800 feet .....\$6.20

**351 0.5-mil Tensitized Polyester Tape**

3" reel, 300 feet .....\$1.85  
 3" reel, 600 feet .....\$2.95  
 5" reel, 1200 feet .....\$5.45  
 5" reel, 1800 feet .....\$6.95  
 7" reel, 2400 feet .....\$9.50  
 7" reel, 3600 feet .....\$11.95

**361 Cassette Tape**

30 minutes .....\$1.98  
 60 minutes .....\$2.25  
 90 minutes .....\$3.49  
 120 minutes .....\$3.98

**314 Low-noise 1.5-mil Acetate**

5" reel, 600 feet .....\$2.80  
 7" reel, 1200 feet .....\$4.40

**344 Low-noise 1.0-mil Polyester Tape**

5" reel, 900 feet .....\$4.25  
 7" reel, 1800 feet .....\$7.35  
 3" reels supplied with plastic mailer.

**AUDIOTAPE**

(Audio Devices, Inc.)

**Cartridge Tapes**

AC-30. 30-minute cassette .....\$2.25  
 AC-60. 60-minute cassette .....\$2.65  
 AC-90. 90-minute cassette .....\$3.95  
 A-4A. 4-track, 300' cartridge .....\$2.65



A-8. 8-track, 80-minute cartridge .....\$2.56  
 A-8A. 8-track, 40-minute cartridge .....\$2.23

**Double Recording (.5-mil tempered Mylar)**

Made on tempered Mylar; allows twice as much recording per reel; stronger than double length tape.

Type 331T, 300 ft., 3" reel .....\$1.72  
 Type 1231T, 1200 ft., 5" reel .....\$5.85  
 Type 2431T, 2400 ft., 7" reel .....\$10.05

**Triple Recording (tempered Mylar)**

Three times as much recording time per reel as standard plastic-base tape, plus same extra strength as other tempered Mylar tapes.

Type 633T, 600 ft., 3 1/4" reel .....\$2.95  
 Type 1833T, 1800 ft., 5" reel .....\$7.05  
 Type 3633T, 3600 ft., 7" reel .....\$11.99

**STEREO DIRECTORY**

### Master 1.5-mil Mylar Tape

Made on 1.5 mil Mylar base; durable in wide temperature range.

Type 671M, 600 ft., 5" reel	\$3.80
Type 1271M, 1200 ft., 7" reel	\$5.10

### Long Recording (1-mil plastic base)

Provides 50% more recording time per reel; 1-mil cellulose acetate base; maximum economy for applications where high strength is not required.

Type 941, 900 ft., 5" reel	\$3.45
Type 1841, 1800 ft., 7" reel	\$6.00

### Longer Recording (1-mil Mylar)

Made on 1-mil Mylar polyester film; provides 50% more recording time per reel; exceptional strength and durability plus longer storage life.

Type 261, 225 ft., 3" mailer	\$1.15
Type 961, 900 ft., 5" reel	\$3.60
Type 1861, 1800 ft., 7" reel	\$6.20

### Standard Recording (1.5-mil Mylar)

High-strength super-durable magnetic tape that meets the highest professional standards of performance; withstands extreme temperatures; virtually immune to humidity; gives maximum tape life under any conditions of use or storage.

Type 671, 600 ft., 5" reel	\$2.80
Type 1271, 1200 ft., 7" reel	\$4.40

### Double Recording (.5-mil Mylar)

Made on .5-mil Mylar; twice as much recording time per reel as standard plastic-base tape; suitable for extended-play applications where tape tension is not excessive.

Type 1231, 1200 ft., 5" reel	\$3.74
Type 2431, 2400 ft., 7" reel	\$6.95

### Standard Recording (plastic base)

Professional-quality recording tape; maximum fidelity, uniformity, frequency response and freedom from noise and distortion; 1.5 mil acetate.

Type 351, 300 ft., 4" reel	\$2.05
Type 651, 600 ft., 5" reel	\$2.55
Type 1251, 1200 ft., 7" reel	\$3.90

### Low-Noise Tape

Provides high signal-to-noise ratio and reduced hiss level; on 1.5-mil plastic base.

Type 1257, 1200 ft., 7" reel	\$4.00
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## AUDIOTEX

(GC Electronics)

### Raw Tape Cassettes

30-703 30 minutes	\$1.79
30-706 60 minutes	\$2.39
30-709 90 minutes	\$3.85
30-712 120 minutes	\$4.79

### 8-Track Tape Cartridges

Polyester lubricated tape.

30-750 32 minutes	\$4.49
30-752 64 minutes	\$4.99

## BASF

### SP-52 Recording Tape

Polyvinyl chloride, tensilized: 1.5-mil. Recommended for standard play.

600 ft., 5" reel	\$2.48
1200 ft., 7" reel	\$3.75
1200 ft., 7" reel, three pack	\$11.25

### LP-35 Recording Tape

Polyester base; tensilized 1-mil. Recommended for long play applications.

900 ft., 5" reel	\$3.33
900 ft., 5" reel, library box	\$9.99
1800 ft., 7" reel	\$5.42
1800 ft., 7" reel, three pack	\$16.26

### DP-26 Recording Tape

Polyester base; tensilized 3/4-mil. Recommended where double play is desirable.

1972 EDITION

300 ft., 3" reel	\$1.47
300 ft., 3" reel, plastic mailer	\$1.85
450 ft., 3 1/2" reel	\$2.44
1200 ft., 5" reel	\$4.90
1200 ft., 5" reel, three pack	\$14.70
2400 ft., 7" reel	\$7.80
2400 ft., 7" reel, three pack	\$23.40

### TP-18 Recording Tape

Polyester base; tensilized, 1/2-mil Triple Play.	
450 ft., 3" reel	\$2.50
450 ft., 3" reel, plastic mailer	\$2.90
600 ft., 3 1/2" reel	\$2.94
1800 ft., 5" reel	\$7.65
3600 ft., 7" reel	\$11.76

### LP-35LH Long-Play Tape

1-mil polyester base.	
900 ft., 5" reel	\$3.93
1800 ft., 7" reel	\$6.85

### DP-26LH Double-Play Tape

3/4-mil polyester base.	
1200 ft., 5" reel	\$5.60
2400 ft., 7" reel	\$9.15

### TP-18LH Triple-Play Tape

1/2-mil polyester base.	
1800 ft., 5" reel	\$8.73
3600 ft., 7" reel	\$13.10

### Cassette Cartridge Tape

Plastic swivel box (suitable for mailing).	
C-30	\$2.23
C-60	\$2.65
C-90	\$3.98
C-120	\$5.22
BASF SK Standard plastic box	
C-30	\$1.48
C-60	\$1.75
C-90	\$2.65
C-120	\$3.48

### "Sound Loop 8" Cartridges

32 minutes	\$2.39
64 minutes	\$3.05
84 minutes	\$3.72

## CAPITOL

(Audio Devices, Inc.)

### Mod Line Cassettes

C-30 15 min/side	\$0.99
C-60 30 min/side	\$1.19
C-90 45 min/side	\$1.79
C-120 60 min/side	\$2.49

### Mod Line 8-Track Cartridges

27-432-102 32 min/150'	\$1.79
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27-440-102 40 min/190'	\$1.99
27-464-102 64 min/300'	\$2.29
27-480-102 80 min/380'	\$2.39

### Mod Line Open-Reel Tape

1.5-mil polyester	
21-706-102 600' 5" reel	\$1.89
21-712-102 1200' 7" reel	\$2.49
1.0-mil polyester	
21-609-102 900' 5" reel	\$2.39
21-618-102 1800' 7" reel	\$3.19
.5-mil polyester	
21-312-102 1200' 5" reel	\$2.69
21-318-102 1800' 5" reel	\$3.69
21-324-102 2400' 7" reel	\$3.99
21-336-102 3600' 7" reel	\$5.99



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**SCINTREX INC.**

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N. Y. 11040

# 11

## Headphones

HITACHI SALES CORP.

### "Ultra-Dynamic" Cassette Tapes

UDC-60 60 minutes	\$3.75
UDC-90 90 minutes	\$4.50

### IRISH MAGNETIC TAPE

(Div. of Morhan)

#### 190 Series Home-Professional Tape

Standard 1 1/2-mil, acetate base, 1/4".	
195-111 150' 3" reel	\$0.65
195-121 300' 4" reel	\$1.75
195-131 600' 5" reel	\$1.95
195-151 1200' 7" reel	\$3.15
Extra-length, 1-mil, acetate base, 1/4".	
196-111 225' 3" reel	\$0.80
196-121 450' 4" reel	\$2.10
196-131 900' 5" reel	\$2.50
196-151 1800' 7" reel	\$4.25
Extra-length, 1-mil, polyester base, 1/4".	
197-111 225' 3" reel	\$0.95
197-121 450' 4" reel	\$2.55
197-131 900' 5" reel	\$2.85
197-151 1800' 7" reel	\$4.95
Double-length, 1/2-mil, polyester tensilized base, 1/4".	
198-111 300' 3" reel	\$1.40
198-121 600' 4" reel	\$3.75
198-131 1200' 5" reel	\$4.50
198-151 2400' 7" reel	\$7.95

#### 200 Series Professional Tape

Standard 1 1/2-mil, acetate base, 1/4".	
211-111 150' 3" reel	\$0.80
211-131 600' 5" reel	\$2.55
211-151 1200' 7" reel	\$3.90
Extra-length, 1-mil, acetate base, 1/4".	
221-111 225' 3" reel	\$0.90
221-131 900' 5" reel	\$3.35
221-151 1800' 7" reel	\$5.95
Standard, 1 1/2-mil, polyester base, 1/4".	
231-131 600' 5" reel	\$2.75
231-151 1200' 7" reel	\$4.25
Extra-length, 1-mil, polyester base, 1/4".	
241-111 225' 3" reel	\$1.10
241-131 900' 5" reel	\$3.40
241-151 1800' 7" reel	\$5.90
Double-length, 1/2-mil, polyester tensilized base, 1/4".	
251-111 300' 3" reel	\$1.75
251-131 1200' 5" reel	\$5.45
251-151 2400' 7" reel	\$9.50
0.5-mil, polyester tensilized base, 1/4".	
261-131 1800' 5" reel	\$6.95
261-151 3600' 7" reel	\$11.95

#### 270 Series Low-Noise, Wide-Range Tape

1 1/2-mil, acetate base, 1/4".	
271-131 600' 5" reel	\$2.65
271-151 1200' 7" reel	\$4.00
1 1/2-mil, polyester base, 1/4".	
273-131 600' 5" reel	\$2.70
273-151 1200' 7" reel	\$4.60
1-mil, polyester base, 1/4".	
274-131 900' 5" reel	\$3.85
274-151 1800' 7" reel	\$6.65
Cassettes in Mailer	
261-C30 15 min/side	\$1.75
261-C60 30 min/side	\$1.85
261-C90 45 min/side	\$2.90
261-C120 60 min/side	\$3.45

#### Hi-Fi Series Cassettes

Soft plastic boxes	
199-C30 15 min/side	\$1.20
199-C60 30 min/side	\$1.30

#### Low Noise Extended Range Cassette

Flip-top plastic box	
262-C60 30 min/side	\$2.55

## MAXELL CORP. OF AMERICA

### "Ultra Dynamic" High-Energy, Double-Range Tape

1-mil polyester	
UD35-7 1800' 7" reel	\$6.90
UD35-10R 3600' 10 1/2" reel	\$17.00
Cassettes	
UDC-60 30 min/side	\$3.75
UDC-90 45 min/side	\$4.50
UDC-120 60 min/side	\$5.60

### Low Noise Open-Reel Tape

1 1/2-mil acetate	
LNA-50-7 1200' 7" reel	\$4.35
LNA-50-10R 2500' 10 1/2" reel	\$11.35
1 1/2-mil polyester	
LNE-50-7 1200' 7" reel	\$4.50
LNE-50-10R 2500' 10 1/2" reel	\$11.50
1-mil polyester	
LNE-35-7 1800' 7" reel	\$6.20
LNE-35-10R 3600' 10 1/2" reel	\$14.20
3/4-mil polyester	
LNE-25-7 2400' 7" reel	\$7.50
1/2-mil polyester	
LNE-18-7 3600' 7" reel	\$11.50

### Low Noise Cassette Tape

LN C-30 15 min/side	\$1.65
LN C-60 30 min/side	\$2.25
LN C-90 45 min/side	\$2.95
LN C-120 60 min/side	\$3.95

### Standard Open-Reel Tape

1 1/2-mil acetate	
A-50-7 1200' 7" reel	\$3.50
A-50-10R 2500' 10 1/2" reel	\$10.50
1-mil polyester	
E-35-7 1800' 7" reel	\$4.75
E-35-10R 3600' 10 1/2" reel	\$12.50

### 8-Track Tape Cartridges

8T-200 40 minutes	\$2.35
8T-300 64 minutes	\$2.65
8T-400 80 minutes	\$2.90

## MEMOREX CORPORATION

### Low-Noise, High-Output Tape

Standard 1 1/2-mil, polyester, 1/4".	
600' 5" reel	\$2.85
1200' 7" reel	\$5.25



1-Mil Polyester	
900' 5" reel	\$4.05
1800' 7" reel	\$6.85
Double-play 0.5-mil tensilized polyester	
1200' 5" reel	\$5.25
2400' 7" reel	\$9.85

## Chromium-Dioxide Cassettes

C60 30 min/side	\$3.95
C90 45 min/side	\$5.85

## Low-Noise, High-Output Cassettes

C30 15 min/side	\$2.30
C60 30 min/side	\$2.75
C90 45 min/side	\$4.05
C120 60 min/side	\$5.50

## RCA

(Magnetic Products Div.)

### RCA Red Seal

Acetate Base.	
15A1 3" x 150' x 1.5 mil, all-purpose in cardboard mailer	\$0.70
15A6 5" x 600' x 1.5 mil, all-purpose, standard play	\$2.25
15A12 7" x 1200' x 1.5 mil, all-purpose, standard play	\$3.50
Polyester Base.	
15M6 5" x 600' x 1.5 mil, all-purpose, standard play	\$2.65
15M12 7" x 1200' x 1.5 mil, all-purpose, standard play	\$4.25
10M2 3" x 225' x 1.0 mil, long play, in cardboard mailer	\$1.00
10M9 5" x 900' x 1.0 mil, all-purpose, long-play	\$3.60
10M18 7" x 1800' x 1.0 mil, all-purpose, long-play	\$6.20
5TM3 3" x 300' x 0.5 mil, all-purpose, double-play	\$1.60
5TM12 5" x 1200' x 0.5 mil, all-purpose, double-play	\$4.75
5TM24 7" x 2400' x 0.5 mil, all-purpose, double-play	\$8.75
Tapes in Plastic Mailers.	
15A1PM 3" x 150' x 1.5 mil acetate	\$0.90
10M2PM 3" x 225' x 1.0 mil polyester	\$1.35
5TM3PM 3" x 300' x 0.5 mil polyester, tensilized	\$1.85

### Red Seal

5TM18TP 5" x 1800' x 0.5 mil, all-purpose, triple play	\$7.40
5TM36TP 7" x 3600' x 0.5 mil, all-purpose, triple play	\$11.99
Low Noise, Low Print.	
15MLN12LT. 7" x 1200' x 1.5 mil polyester	\$5.10
10MLN18LT. 7" x 1200' x 1.0 mil extra-strength	\$7.35

### Red Seal Cassettes

In plastic album box.	
C30 15 min/side	\$2.30
C60 30 min/side	\$2.75
C90 45 min/side	\$4.05
C120 60 min/side	\$5.50

### Vibrant Cassettes

CV30 15 min/side	\$1.39
CV60 30 min/side	\$1.69
CV90 45 min/side	\$2.49

### 8-Track Cartridges

8TR32 150' lubricated tape in cartridge (32 min)	\$2.45
8TR64 300' lubricated tape in cartridge (64 min)	\$2.95
8TR94 440' lubricated tape in cartridge (94 min)	\$3.70

ALWAYS.....

take along your copy of this Directory when shopping for hi-fi components. It is a comprehensive reference to complete technical details and prices.

**Cassette Head Cleaner Tape**

10R121 Non-abrasive cassette head cleaner in plastic box .....\$2.00

**SCOTCH**

(3M Co. Magnetic Products Div.)

**Cassettes**

Features Scotch "High Energy" cassettes, fully compatible, with nearly twice the signal output of leading high density cassettes and Scotch "Extended Range" cassettes, and upgraded replacement of the "Dynamrange" series. Both feature "Posi-Trak" back treatment.

**"High Energy" Cassettes**

- 30 minute (album package) .....\$3.20
- 60 minute (album package) .....\$3.70
- 90 minute (album package) .....\$5.35

**"Extended Range" Cassettes**

- 30 minute (album and mailer package) .....\$2.25
- 60 minute (album and mailer package) .....\$2.65
- 90 minute (album and mailer package) .....\$4.00
- 120 minute (album package) .....\$5.35

**No. 102 "All-Purpose" Tape**

For all general recording; suitable for long-term storage; on super-tough, weather-balanced 1 1/2-mil polyester backing.

- 102-1/4-600' 5" .....\$2.80
- 102-1/4-1200 1200' 7" .....\$4.40

**No. 111 "All-Purpose" Tape**

For all general recording; 1 1/2-mil plastic backing.

- 111-1/4-150 150' 3" .....\$0.85
- 111-1/4-600 600' 5" .....\$2.70
- 11-1/4-1200 1200' 7" .....\$4.00

**No. 131 "Low Print" Tape**

Reduces print-through to a point below noise level of most professional machines; allows long-time storage. 1 1/2-mil plastic backing.

- 131-1/4-600 600' 5" .....\$2.95
- 131-1/4-1200 1200' 7" .....\$4.55

**No. 138 "Low-Print, Extra Strength" Tape**

Same as No. 131 except on strong 1 1/2-mil polyester backing.

- 138-1/4-1200 1200' 7" .....\$5.25

**No. 150 "Extra Length, Extra Strength" Tape**

Designed to withstand temperature and humidity extremes; high potency oxide on 1-mil polyester backing.

- 150-1/4-900 900' 5" .....\$3.60
- 150-1/4-1800 1800' 7" .....\$6.20

**No. 200 "Double Length, Double Strength" Tape**

As much playing time as two reels of standard tape; for recording opera, concerts, or conferences; high potency oxide on tensilized polyester backing.

- 200-1/4-1200 1200' 5" .....\$5.85
- 200-1/4-2400 2400' 7" .....\$10.05

**"Dynamrange Tapes"**

Although originally engineered for professional use, these tapes are now available for home recording. Provides high-fidelity recording even at 3 3/4 ips.

- 201 1 1/2-mil plastic
- 201-1/4-600 600' 5" .....\$2.80
- 201-1/4-1200 1200' 7" .....\$4.10
- 202 1 1/2-mil polyester
- 202-1/4-600 600' 5" .....\$2.85
- 202-1/4-1200 1200' 7" .....\$4.75
- 203 1-mil polyester
- 203-1/4-900 900' 5" .....\$4.05
- 203-1/4-1800 1800' 7" .....\$6.85

**"High Output-Low Noise" Tapes**

Provides a 50 per cent increase in signal output and an additional 3 dB in dynamic range over conventional low noise tape. Gives the

*the tape that turned the cassette into a high-fidelity medium*

**TDK**

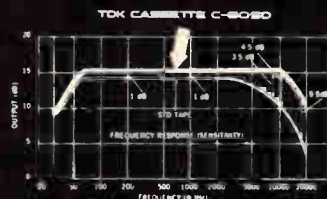
Until TDK developed gamma ferric oxide, cassette recorders were fine for taping lectures, conferences, verbal memos and family fun—but not for serious high fidelity.



**TDK SUPER DYNAMIC (SD) TAPE**



Today you can choose among high-quality stereo cassette decks.



The new magnetic oxide used in TDK Super Dynamic tape distinctively differs from standard formulations in such important properties as coercive force, hysteresis-loop squareness, average particle length (only 0.4 micron!) and particle width/length ratio. These add up to meaningful performance differences: response capability from 30 to 20,000 Hz, drastically reduced background hiss, higher output level, decreased distortion and expanded dynamic range. In response alone, there's about 4 to 10 db more output in the region above 10,000 Hz—and this is immediately evident on any cassette recorder, including older types not designed for high performance. There's a difference in clarity and crispness you can hear.

Available in C60SD and C90SD lengths.

**TDK ELECTRONICS CORP.**  
LONG ISLAND CITY, NEW YORK 11103

CIRCLE NO. 52 ON READER SERVICE CARD

**DISCOUNTS HI-FI SYSTEMS COMPONENTS**

KITS • COMPACTS  
TUNERS • AMPLIFIERS  
RECEIVERS • TURNTABLES  
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CIRCLE NO. 16 ON READER SERVICE CARD

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WITH **FINCO**  
Award Winning FM Components

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FM BAND PASS FILTER Model 3007 \$7.30 list

FM INDOOR AMPLIFIER Model 65-7 \$24.95 list

Write Dept. S-1 — for Catalog 20-213  
**THE FINNEY COMPANY**  
34 W. Interstate St., Bedford, Ohio 44146

CIRCLE NO. 25 ON READER SERVICE CARD

# 11

## Raw Tape

audiophile and critical music lover the same magnetic and physical properties of the studio music mastering tape introduced to professional users in 1970. Features "Posi-Trak" backing.

- 206-1/4-1.5-mil-7" "Posi-Trak" backing (60 min. recording time both directions at 7 1/2 ips) .....\$6.75
- 207-1/4-1-mil-7" "Posi-Trak" backing (90 min. cording time both directions at 7 1/2 ips) .....\$8.55

### No. 290 "Triple Length" Tape

- 1/2-mil tensilized polyester backing.
- 290-1/4-1800 1800' 5" .....\$7.40
- 290-1/4-3600 3600' 7" .....\$11.99

### "Living Letters" Tape

- 111-1/4-150-LL 150' 3" .....\$1.05
- 200-1/4-300-LL 300' 3" .....\$2.05
- 290-1/4-600-LL 600' 3" .....\$2.95

### 8-Track Cartridges

- S-8TR-40 40-min. ....\$2.95



S-8TR-80 80-min. ....\$3.40

## SONY/SUPERSCOPE

(Superscope, Inc.)

### Professional Recording Tape

Extra-heavy formula Oxi-coat homogenized oxide coating. Polyester back, "lubri-cushion" impregnated lubricant.

- PR-200-24; 2400' 7" reel .....\$7.75
- PR-150-18; 1800' 7" reel .....\$4.69
- PR-200-12; 1250' 5" reel .....\$4.69
- PR-150-9; 900' 5" reel .....\$2.99
- PR-150-3; 300' 3 1/4" reel .....\$1.35
- PR-300-6; 600' 3 1/4" reel .....\$2.45
- SLH-180-18; 1800' 7" reel .....\$6.50

### Tape Cassettes

For use with Models 50, 100, 124, 124CS, 125 and 130.

- C-60 60 minutes of recording .....\$1.89
- C-90 90 minutes of recording .....\$2.19
- C-120 120 minutes of recording .....\$3.29

### 8-Track Cartridge

- 8T-60 60 minutes of recording .....\$4.29

### Empty Tape Reels

Computer-styled tape reels, with box.

- 7" .....\$1.00
- 5" .....\$0.60
- 3 1/2" .....\$0.40

## SOUNDCRAFT

### "Standard" Tape

1.5-mil acetate base; professional quality; economy priced.

- S-6 600 ft., 5" reel .....\$2.55
- S-12 1200 ft., 7" reel .....\$3.90

### "Standard-50" Tape

Long-play version of "Standard" tape on 1-mil acetate base.

- S5-9 900 ft., 5" reel .....\$3.45
- S5-18 1800 ft., 7" reel .....\$6.00

### "Lifetime" Tape

For use where utmost strength and quality are necessary; 1.5-mil polyester base.

- L-6 600 ft., 5" reel .....\$2.40
- L-12 1200 ft., 7" reel .....\$3.75

### "Plus-50" Tape

Made on 1-mil polyester for 50% more playing time than standard 1.5-mil tapes; combines long play-type tape with great tape strength.

- PL-9 900 ft., 5" reel .....\$3.45
- PL-18 1800 ft., 7" reel .....\$6.00

### "Triple-Play" Tape

.5-mil polyester base

- TP-18 1800 ft., 5" reel .....\$7.05
- TP-36 3600 ft., 7" reel .....\$11.99

### "Golden Tone" Tape

High quality special tape; 25% more high-frequency output & 7 dB better signal-to-noise ratio; 7" reel.

- GTA-12 1.5-mil acetate base, 1200' .....\$4.00
- GTM-18 1-mil polyester base, 1800' .....\$6.65

### Cassette Tape Cartridges

- C-30 .....\$2.25
- C-60 .....\$2.65
- C-90 .....\$3.95

## TDK ELECTRONICS CORP.

### "Super Dynamic" Cassettes

Employs new type of ferric oxide for wide dynamic range, low noise, distortion-free output. 30-20,000 Hz response; polyester-base tape packaged in plastic box.

- C-30SD 30 minutes .....\$1.69
- C-60SD 60 minutes .....\$1.99
- C-90SD 90 minutes .....\$2.99
- C-120SD 120 minutes .....\$3.99

### Deluxe Cassettes

For all general recording, packaged in plastic box.

- C-30P 30 minutes .....\$1.09
- C-60P 60 minutes .....\$1.29
- C-90P 90 minutes .....\$1.99

### Maverick Cassettes

For all general recording, packaged in mailer cartons.

- C-30F 30 minutes .....\$0.85



- C-60F 60 minutes .....\$0.99
- C-90F 90 minutes .....\$1.49

### "Super Dynamic" Tape

Employs new type of ferric oxide for wide dynamic range, low noise & distortion-free output.

- 1800 SD 1800 ft., 7" reel .....\$4.99
- 1200 SD 1200 ft., 7" reel .....\$3.59

### Deluxe Low-Noise Tape

- 100-7 1200 ft., 2 mil, 7" reel .....\$2.50
- 150H-7 1200 ft., 1.5 mil, 7" reel .....\$2.75
- 150-7 1800 ft., 1.5 mil, 7" reel .....\$3.50
- 200-7 2400 ft., 1 mil, 7" reel .....\$5.00

# 11

## Microphones

### AKG

(North American Philips Corp.)

#### AKG D-109

Dynamic; sensitivity -56 dB ASA; response 50-15,000 Hz at ± 3.5 dB; lo impedance (200 ohms); omnidirectional; lavalier; use for speech; dust filter or windscreen; chrome finish; 30' cable; not supplied with connector; price \$49.00.

#### AKG D-160E

Dynamic; sensitivity -55 dB ASA; response 50-15,000 Hz at ± 3 dB; lo impedance (200 ohms); omnidirectional; with "slip-in" stand attachment; use for tape recording; dust filter or windscreen; with detachable windscreen; without windscreen linear response, with windscreen presence rise; chrome finish; 15' cable; supplied with XLR connector; price \$60.00.

#### AKG D-190E

Dynamic; sensitivity -53 dB ASA; response 40-15,000 Hz at ± 3 dB; lo impedance (200 ohms); cardioid; with "slip-in" stand attachment; use for music; dust filter or windscreen; chrome finish, 15' cable; supplied with XLR connector; Model D-190TS is same as D-190E but for hi impedance operation with on-off switch, 24' cable and phone plug; price \$50.00.

#### AKG D-200E

Dynamic; sensitivity -55 dB ASA; response 30-15,000 Hz at ± 3 dB; lo impedance (200 ohms); cardioid; with "slip-in" stand attachment use for music and tape recording dust filter or windscreen; matte grey finish; 15' cable;



supplied with XLR connector; Model D-200TS is same as D-200E but for hi impedance with on-off switch operation, 24' cable and phone plug; price \$69.00.

#### AKG D-707E

Dynamic; sensitivity -52 dB ASA; response 50-15,000 Hz at ± 3.5 dB; lo impedance (200 ohms); cardioid; with "slip-in" stand attachment; use for tape recording; "pop" or "blast" filter, chrome finish; 15' cable; supplied with XLR connector; Model D-707TS is same as D-707E but for hi impedance operation with on-off switch, 24' cable with phone jack; price \$39.50.

#### AKG D-1000E

Dynamic; sensitivity -53 dB ASA; response 40-16,000 Hz at ± 3 dB; lo impedance (200



ohms); cardioid; with "slip-in" stand attachment; use for rock vocals; "pop" or "blast" filter; chrome finish; 15' cable; supplied with XLR connector; Model D-1000TS is same as D-1000E but for hi impedance operation with on-off switch, 24' cable with phone plug; price \$60.00.

## AUDIOTEX

(GC Electronics)

### Model 30-2310

Dynamic; response 80-13,000 Hz at  $\pm 3$  dB; hi impedance; cardioid; hinge mount to desk stand; use for speech and tape recording; on-off switch; chrome; 10' cable; \$29.95.

### Model 30-2312

Dynamic; response 55-13,000 Hz; user selects hi or lo impedance; omnidirectional; hand-



held; with "slip-in" stand attachment; use for speech and rock vocals; dust filter or wind screen; on-off switch; chrome; 15' cable; \$34.95.

### Model 30-2314

Dynamic; response 50-17,000 Hz at  $\pm 3$  dB; user selects hi or lo impedance; cardioid; hand-



held; hinge mount to stand; use for speech, rock vocals and tape recording; on-off switch; chrome; 20' cable; volume control on mike barrel; \$39.95.

## BANG & OLUFSEN OF AMERICA

### Beomic BM-5

Two ribbon stacked microphones (top one detachable); sensitivity  $-85$  dB (1V/uBar); response 30-13,000 Hz at  $\pm 2$  dB; figure 8 pattern; desk stand; use for speech and music; 20' cable; not supplied with connector; \$99.95.

### Beomic 1000

Dynamic; sensitivity  $-80$  dB (1V/uBar); response 50-17,000 Hz at  $\pm 5.0$  dB; omnidirectional; lavalier or desk stand; use for speech and music; 10' cable; not supplied with connector; \$40.00.

### Beomic 2000

Dynamic; sensitivity  $-80$  dB (1V/uBar); response 50-15,000 Hz (reference not stated); lo impedance; cardioid; desk stand; use for speech and music; not supplied with connector; \$80.00.

## BEYER

### Model M 69

Dynamic; sensitivity  $-50$  dB ASA; response 50-16,000 Hz (reference not stated); lo impedance; cardioid; use for speech and music; supplied with XLR connector; price \$75.00.

### Model M 111 A

Dynamic; sensitivity  $-56$  dB ASA; response 60-15,000 Hz (reference not stated); lo impedance; cardioid; lavalier; use for speech; price \$95.00.

### Model M 320

Dynamic ribbon; sensitivity  $-57$  dB ASA; response 30-18,000 Hz (reference not stated); lo impedance; cardioid; hinge mount to stand; use for speech, rock vocals and music; on-off switch; three-position music-voice-off switch to eliminate bass response at close range; price \$100.00.

### Model M 500 N

Dynamic ribbon; sensitivity  $-55$  dB EIA; response 40-18,000 Hz (reference not stated); lo impedance; cardioid; use for speech and rock vocals; "pop" or "blast" filter; supplied with XLR connector; price \$100.00.

## CALECTRO

(GC Electronics)

### Model Q4-145

Dynamic; response 50-12,000 Hz at  $\pm 4$  dB; hi impedance; cardioid; hand-held or desk stand; use for speech and tape recording; black; 6' cable; supplied with mini-plug connector; \$12.00.

### Model Q4-152

Dynamic; response 50-17,000 Hz at  $\pm 3$  dB; hi impedance; cardioid; hand-held; with "slip-in" stand attachment; use for speech and rock vocals; on-off switch; chrome; 10' cable; \$23.95.

### Model Q4-157

Dynamic; response 100-12,000 Hz at  $\pm 3$  dB; user selects hi or lo impedance; omnidirec-



ional; hand-held; with "slip-in" stand attachment; use for speech and rock vocals; on-off switch; chrome; 15' cable; \$19.95.

## ELECTRO-VOICE, INC.

### Model 621

Dynamic; response 150-12,000 Hz at  $\pm 2.0$  dB; hi or lo impedance (specify when ordering);



cardioid; desk stand and mic stand adapter supplied with "slip-in" stand attachment; use for music and tape recording; matte satin finish; price \$19.95.

### Model 635A

Dynamic; sensitivity  $-149$  dB EIA; response 80-13,000 Hz at  $\pm 3.0$  dB; lo impedance (150 ohms); omnidirectional; hand-held with "slip-in" stand attachment and lavalier neck cord assembly furnished; use for tape recording and broadcasting; four-stage "pop" or "blast"

filter; fawn beige micomatte finish; 18' cable; supplied with Switchcraft A3F connector; price \$56.70.

### Model 670

Dynamic; sensitivity  $-152$  dB EIA; response 60-14,000 Hz (reference not stated); user selects hi or lo impedance; cardioid; hand-held with "slip-in" stand attachment; use for speech, rock vocals, music, and tape recording; built-in Acoustifoam® "pop" or "blast" filter; on-off switch; "Top Brass" anodized finish; 15' cable; supplied with Switchcraft A3F connector; lo frequency response varies with distance from the sound to the microphone—maximum bass response is  $\frac{1}{2}$ " from source; price \$45.90.

### Model 670V

Dynamic; sensitivity  $-152$  dB EIA; response 60-14,000 Hz (reference not stated); user se-



lects hi or lo impedance; cardioid; hand-held with "slip-in" stand attachment; use for speech, rock vocals, music, and tape recording; built-in Acoustifoam® "pop" or "blast" filter; on-off switch; "Top Brass" anodized finish; 15' cable; supplied with Switchcraft A3F connector; a special thumb-actuated volume control is provided for user convenience; bass response varies with distance from the sound to the microphone (see Model 670); price \$50.10.

### Model 674

Dynamic; sensitivity  $-152$  dB EIA; response 60-15,000 Hz at  $\pm 6$  dB; user selects hi or lo impedance; cardioid;  $\frac{3}{8}$ "-27 thread provided for stand mounting; use for speech, music and tape recording; on-off switch; satin chrome finish (also available as 674G—gold finish); 15' cable; supplied with E-V QC-4M Quick-Change connector; built-in three-position bass tilt-off control; price \$61.35 (gold—\$64.20).

### Model 676

Dynamic; sensitivity  $-151$  dB EIA; response 60-15,000 Hz at  $\pm 5$  dB; user selects hi or lo impedance; cardioid; with "slip-in" stand attachment; use for speech, music and tape recording; windscreen optional accessory; satin chrome finish (also available as 676G—gold finish or 676A—non reflecting gray); 15' cable; supplied with E-V QC-4M Quick-Change connector; has built-in three-position bass tilt-off control; price \$61.35 (gold—\$64.20).

### Model 1710

Electret condenser; sensitivity  $-142$  dB EIA; response 80-13,000 Hz (reference not stated); 150 ohms unbalanced; omnidirectional; hand-held with "slip-in" stand attachment; use for speech, rock vocals, music, and tape recording; built-in Acoustifoam® "pop" or "blast" filter; on-off switch; beige anodized with gray enamel trim finish; 18' cable; not supplied with connector; cable is permanently strain-relief molded to microphone; price \$39.75.

### Model 1711

Electret condenser; sensitivity  $-142$  dB EIA; response 60-15,000 Hz (reference not stated); 150 ohms balanced; omnidirectional; hand-held with "slip-in" stand attachment; use for speech, rock vocals, music and tape recording; built-in "pop" or "blast" filter; on-off switch; beige anodized with gray enamel trim finish; 18' cable; supplied with Switchcraft A3F connector; electret is impervious to extremes of humidity or temperatures; price \$59.70.

**Model 1750**

Electret condenser; sensitivity -137 dB EIA; response 80-13,000 Hz (reference not stated); 150 ohms unbalanced; cardioid; hand-held with "slip-in" stand attachment; use for speech, rock vocals, music, and tape recording; built-in "pop" or "blast" filter; on-off switch; beige anodized with gray enamel trim finish; 18' cable; not supplied with connector; cable is strain-relief molded to microphone; price \$45.00.

**Model 1751**

Electret condenser, single-D; sensitivity -137 dB EIA; response 60-15,000 Hz (reference not stated); 150 ohms balanced; cardioid; hand-



held with "slip-in" stand attachment; use for tape recording, public address and sound reinforcement; built-in "pop" or "blast" filter; on-off switch; beige anodized with gray enamel trim finish; 18' cable; supplied with Switchcraft A3F connector; price \$75.00.

**ERCONA CORPORATION****Model DC-21**

Condenser; sensitivity -30 dB 10 dyne/cm<sup>2</sup>; response 30-20,000 Hz at ± 3 dB; 200 ohms balanced; cardioid; lavalier or hinge mount to stand; use for speech and music; silver gray finish; Model DC-20 (\$139.50) available with omnidirectional pattern—both powered and use FET's for hi signal-to-noise ratio; price \$149.50.

**Model F-67BS**

Dynamic; sensitivity -54 dB ASA; response 40-16,000 Hz (reference not stated); 200 ohms balanced; cardioid; with "slip-in" stand attachment; use for speech and music; chrome finish; 20' cable; wind pop screen available as optional extra for \$19.95; price \$59.50.

**Model RD-34WS**

Dynamic; sensitivity -54 dB ASA; response 30-20,000 Hz at ± 3 dB; 200 ohms balanced; cardioid; hand-held or lavalier with "slip-in" stand attachment; use for speech and music; windscreens; silver gray finish; 18' cable; price \$75.00.

**FARGO COMPANY****Fargram Parabolic**

Dynamic; lo impedance; directional; mounted on tripod; use for sound hunting or long-range pickup; green finish; 6' cable; supplied with mini-plug connector; spun aluminum 24" parabolic reflector with gunsight; about 15 dB gain 500-5000 Hz; price \$98.50.

**HITACHI SALES CORP.****NDM-32**

Dynamic; sensitivity -73 dB; response 70-12,000 Hz at ±4.0 dB; balanced 600 ohms; omni-

directional; desk stand; use for speech and tape recording; wind screen; black; 16 1/2' cable; supplied with plug connector, \$34.95.

**RCA****HK-96**

Dynamic; sensitivity -57 dB (EIA); response 50-15,000 Hz (reference not stated); user selects hi or lo impedance; cardioid; hand held; with "slip-in" stand attachment; hinge mount to stand; use for speech, music, and tape recording; chrome; 20' cable; not supplied with connector; three position bass-roll-off switch to reduce rumble and unwanted background noise; attache carrying case included; \$50.00.

**HK-97**

Dynamic; sensitivity -60 dB (EIA); response 50-15,000 Hz (reference not stated); user selects hi or lo impedance; cardioid; hand-held; with "slip-in" stand attachment; hinge mount to stand; use for music and tape recording; dust filter or wind screen; on-off switch; chrome; 20' cable; not supplied with connector; attache carrying case included; \$40.00.

**HK-98**

Dynamic; sensitivity -57dB (EIA); response 40-17,000 Hz (reference not stated); user selects hi or lo impedance; omnidirectional; hand-held; with "slip-in" stand attachment; hinge mount to stand; use for speech, music and tape recording; dust filter or wind screen; on-off switch; chrome; 20' cable; not supplied with connector; attache type carrying case included; \$40.00.

**HK-102 Twin Stereo**

Dynamic; sensitivity -65 dB (EIA) response 200-5000 Hz (reference not stated); balanced 10,000



ohms; cardioid; hand-held; with "slip-in" stand attachment; lavalier; use for music and tape recording; chrome; 10' cable; not supplied with connector; two microphones in swivel stand; attache carrying case included; \$62.00.

**HK-104 Dual Channel**

Dynamic; sensitivity -60 dB (EIA); response 150-10,000 Hz (reference not stated); balanced 10,000 ohms; cardioid; stand included; use for speech and tape recording; chrome; 10' cable;



not supplied with connector; attache type carrying case included; \$45.00.

**HK 106 "Super Cardioid"**

Dynamic; sensitivity -62 dB (EIA); response 150-10,000 Hz (reference not stated); user se-



lects hi or lo impedance; cardioid; hand-held; with "slip-in" stand attachment; hinge mount to stand; use for speech, music and tape recording; dust filter or wind screen; chrome; good off-axis rejection, incorporates two cartridges and two transformers; attache type carrying case included; \$44.00.

**HK-110**

Dynamic; sensitivity -62 dB (EIA); response 100-12,000 Hz (reference not stated); user selects hi or lo impedance; balanced 200/15,000 ohms; cardioid; hand-held; with "slip-in" stand attachment; hinge mount to stand; use for speech, rock vocals and tape recording; dust filter or wind screen; on-off switch; gold; 20' cable; not supplied with connector; designed for close work, "rock" bands and combos, recording; attache type carrying case included; \$54.00.

**HK-111**

Dynamic; sensitivity -57 dB (EIA); response 50-20,000 Hz (reference not stated); user selects hi or lo impedance; omnidirectional; hand-held; with "slip-in" stand attachment; hinge mount to stand; use for music, tape recording and broadcasting; dust filter or wind screen; chrome; 20' cable; not supplied with connector; extremely flat frequency response; attache carrying case included; \$54.00.

**HK-103**

Dynamic; sensitivity -62 dB (EIA); response 100-15,000 Hz (reference not stated); user selects hi or lo impedance; directional hand-held; with "slip-in" stand attachment; hinge mount to stand; use for speech, rock vocals and tape recording; "pop" or "blast" filter; gold; 20' cable; not supplied with connector; high off-axis rejection for anti-feedback; attache type carrying case included; \$64.00.

**SHURE BROTHERS, INC.****Model 300**

Ribbon; sensitivity -154 dB (EIA); response 40-15,000 Hz; user selects hi or lo impedance; hinge mount to stand; bi-directional; use for speech and music; gray; 20' cable; not supplied with connector; \$171.00.

**Model 515SA (Unidyne B)**

Dynamic; sensitivity -154 dB (EIA); response 80-13,000 Hz; hi impedance; cardioid; hand-held; with "slip-in" stand attachment; use for speech, rock vocals and music; on-off switch; chrome finish; 15' cable; Model 515SB is similar, but lo impedance—\$45.00; \$45.00.

**Model 545 (Unidyne III)**

Dynamic; sensitivity -149 dB (EIA); response 50-15,000 Hz; user selects hi or lo impedance; cardioid; with "slip-in" stand attachment; hinge mount to stand; use for speech, music and tape



recording; chrome finish; 15' cable; supplied with Amphenol MC4M connector; \$96.00; Model 545S is similar, but has cable connection through hinge and off/on switch in upright (\$102.00); Model 545SD is similar, but has off/on switch on microphone barrel (\$102.00); Model 545L is similar, but has lavalier cord and clip (\$80.00).

#### Model 546 (Unidyne III)

Dynamic; sensitivity -154 dB (EIA); response 50-15,000 Hz; user selects hi or lo impedance; cardioid; hinge mount to stand; use for speech, rock vocals and music; chrome finish; 20' cable; not supplied with connector; \$155.00.

#### Model 548 SD (Unidyne IV)

Dynamic; sensitivity -149 dB (EIA); response 40-15,000 Hz; user selects hi or lo impedance; cardioid; hand-held; with "slip-in" stand attachment; use for speech and music; on-off switch; chrome finish; 15' cable; not supplied with connector; \$110.00.

#### Model 555

Dynamic; sensitivity -148 dB (EIA); response 50-15,000 Hz; user selects hi or lo impedance; cardioid; hinge mount to stand; use for speech and music; chrome finish; 15' cable; supplied with Amphenol MC3M connector; Model 555W has built-in on/off switch (\$98.00); \$95.00.

#### Model 565 (Unisphere 1)

Dynamic; sensitivity -150 dB (EIA); response 50-15,000 Hz; user selects hi or lo impedance; cardioid; hinge mount to stand; use for speech, rock vocals and music; "pop" or "blast" filter; chrome finish; 15' cable; not supplied with connector; Model 565S is similar with on/off switch (\$113.00); Model 566 is similar, but with shock mount (\$165.00); \$108.00.

#### Model 578

Dynamic; sensitivity -154 dB (EIA); response 50-17,000 Hz; user selects hi or lo impedance; omnidirectional; hand-held; use for speech and

music; "pop" or "blast" filter; on-off switch; chrome finish; 15' cable; not supplied with connector; Model 578S is similar, but with swivel assembly (\$100.00); \$90.00.

#### Model 580SA(B)

Dynamic; sensitivity -151 dB (EIA); response 50-13,000 Hz; user buys hi or lo impedance; cardioid; hand-held; with "slip-in" stand attachment; use for speech and music; on/off switch; chrome finish; 15' cable; not supplied with connector; \$70.00.

#### Model 585SA(B)

Dynamic; sensitivity -151 dB (EIA); response 50-13,000 Hz; user buys hi or lo impedance; cardioid; hand-held; with "slip-in" stand attachment; use for speech, rock vocals and music; "pop" or "blast" filter; on-off switch; chrome finish; 15' cable; not supplied with connector; Model 585SAV is similar, but has volume control on microphone barrel (\$183.00); \$75.00.

#### Model 5885SA(B)

Dynamic; sensitivity -155 dB (EIA); response 80-13,000 Hz; user buys hi or lo impedance;



cardioid; hand-held; with "slip-in" stand attachment; use for speech, rock vocals and music; "pop" or "blast" filter; on-off switch; chrome finish; 15' cable; not supplied with connector; \$60.00.

#### Model 579SB

Dynamic; sensitivity -151 dB (EIA); response 50-15,000 Hz; lo impedance; omnidirectional; with "slip-in" stand attachment; use for speech, rock vocals and music; "pop" or "blast" filter; on/off switch; chrome finish; 20' cable; not supplied with connector; \$75.00.

### SONY/SUPERSCOPE

(Superscope, Inc.)

#### ECM-16

"Condenser"; sensitivity -57.8 dB (0 dB=1 V/10  $\mu$ bar); response 50-13,000 Hz (reference not stated); lo impedance; omnidirectional; lavalier; use for speech and tape recording; silver; 6' cable; supplied with mini connector; over-all size  $\frac{9}{16}$ " D x  $1\frac{1}{16}$ " L; internal battery operation; \$34.95.

#### ECM-18

"Condenser"; sensitivity -56.8 dB (0 dB=1V/10  $\mu$ bar); response 50-12,000 Hz (reference not stated); lo impedance; cardioid; hand-held; use for speech, music and tape recording; dust filter or windscreen; silver gray and black; 6.5' cable; supplied with mini connector; internal battery operation; \$19.95.

#### ECM-19B

"Condenser"; sensitivity -54 dB (0 dB=1V/10  $\mu$ bar); response 50-12,000 Hz (reference not stated); cardioid; hand-held; with "slip-in" stand attachment; use for speech, music and tape recording; dust filter or windscreen; silver and black; 9' cable; supplied with mini connector; internal battery operation; \$34.95.

#### ECM-21

"Condenser"; sensitivity -54 dB (0 dB=1V/10  $\mu$ bar); response 50-12,000 Hz (reference not stated); lo impedance; balanced 50, 250, 600 ohms; cardioid; hand-held; with "slip-in" stand attachment; use for music and tape recording; dust filter or windscreen; chrome; 19' cable;

## MICROPHONES—Cost vs Performance

THE role of the microphone is analogous to that of the loudspeaker, but at the opposite end of the hi-fi reproduction chain. It is a transducer, converting minute pressure variations in the air (sound) to electrical voltage waveforms. Since the microphone diaphragm moves only microscopically, compared to the large excursions of a speaker cone, it has fewer inherent deficiencies and, in its most refined form, can be a nearly perfect device.

In a home music system, microphones are used almost exclusively for recording "live" programs on a tape recorder. Low-to-medium priced recorders sometimes come with a pair of inexpensive microphones, but better quality machines leave the selection of the microphone to the user. If the recorder is to be used for preserving baby's first words, any inexpensive microphone will be satisfactory. The quality of a musical recording, on the other hand, will usually depend on the response of the microphone, rather than the recorder.

Microphones may be classified in several ways, according to: 1. operating principle, 2. sensitivity, 3. frequency response, 4. impedance, 5. directional pattern, and 6. styling. The most widely used type of microphone is the dynamic—actually a miniature loudspeaker in reverse. Low-priced dynamic microphones supplied with some tape recorders vary in quality from poor to quite good, but few have the frequency response and smoothness to take full advantage of the capabilities of the recorder. Dynamic microphones in the \$30-\$60 price class are intended for public-address and non-critical recording applications, and are generally adequate for home recording. Above \$100, dynamic microphones approach professional quality standards. Many dynamic microphones can be wired for low-impedance (50 to 250 ohms) or high-impedance (about 10k ohms) operation, to match the requirements of the recorder.

Capacitor microphones (sometimes referred to as condenser microphones) use a tiny two-plate capacitor, whose spacing is varied as one plate (the diaphragm) flexes under the sound pressure. It has a very high impedance and requires an impedance transforming circuit, usually built into the microphone case. The capacitor microphone requires a power supply, both to power the amplifier and to supply a polarizing

voltage to the capacitor element. Its high price (from about \$100 to well over \$300) often removes it from consideration in home recording, but the very smooth, wide-range frequency response of the capacitor microphone makes professional-quality tape recordings possible on any reasonably good home machine.

A variation on the capacitor microphone is the so-called "electret" which requires no polarizing voltage or separate power supply, and is considerably cheaper.

Most home-recording microphones are omnidirectional, a satisfactory characteristic for the majority of applications. Sometimes it is necessary to exclude sounds from certain directions and then a directional microphone is required. Most directional microphones have a cardioid (heart-shaped) pattern, rejecting sounds from the rear, but some have bidirectional "figure-8" patterns, with side rejection.

The frequency response rating of an expensive microphone is usually accurate, but in the under-\$100 class do not take these figures too literally. Home tape recorders usually have a low-to-medium impedance input, capable of working with any microphone designed to work into an impedance of less than a few thousand ohms. This includes all dynamic microphones and capacitor microphones, whose FET amplifiers provide an output impedance of a few hundred ohms.

Sensitivity refers to the output voltage from a microphone with a given sound input level. Since the sensitivity is expressed in "-dB," smaller numbers indicate higher output. Microphones carrying an EIA sensitivity rating can be compared in this range, but it is often difficult to determine from a tape-recorder specification how much input level it requires from the microphone (in terms of the EIA rating).

In styling, microphones vary widely, from simple hand-held types to tiny lavalier microphones. Capacitor microphones are among the smallest types, while dynamic microphones range from lavalier size to bulky directional units.

Obviously, individual microphone needs vary considerably. In all cases, one should consider the intended application and what investment can be justified. Good "live" recordings must start with good microphones and there are no short-cuts. JULIAN D. HIRSCH

not supplied with connector; internal battery operation; \$54.95.

**ECM-22P**

"Condenser"; sensitivity -54.8 dB (0 dB = 1V/10  $\mu$ bar); response 40-15,000 Hz (reference not stated); lo impedance; balanced 250/600 ohms; cardioid; hand-held; with "slip-in" stand attachment; use for speech, rock, vocals, music, and tape recording; dust filter or windscreen; silver; 20' cable; not supplied with connector; internal battery/phantom powering; \$99.95.

**ECM-95S**

"Condenser"; sensitivity -50 dB (0 dB = 1V/10  $\mu$ bar); response 70-10,000 Hz (reference not stated); lo impedance; cardioid; hand-held; use for speech and tape recording; silver; 4.5' cable; supplied with 2-prong mini connector; internal battery operation; stop/go switch; \$19.95.

**ECM-99**

"Condenser"; sensitivity -53 dB (0 dB = 1V/10  $\mu$ bar); response 50-12,000 Hz (reference not stated); lo impedance; cardioid (dual); hand-held; with "slip-in" stand attachment; use for music and tape recording; dust filter or windscreen; nickel satin finish; 10' cable; supplied with mini (2) connector; one point stereo pickup; internal battery operation; \$44.95.

**F-98**

Dynamic; sensitivity -58 dB (0 dB = 1V/10  $\mu$ bar); lo impedance; cardioid; hand-held; use for speech and tape recording; 6.5' cable; supplied with mini connector; \$12.95.

**SPEEDEX**

(GC Electronics)

**Model 31-850**

Dynamic; response 100-15,000 Hz at  $\pm 4$  dB; hi



impedance; cardioid; hand-held; lavalier; use for speech; chrome; 3' cable; supplied with mini-plug connector; \$4.77.

**STANFORD INTERNATIONAL****MB 207**

Dynamic; response 80-16,000 Hz at  $\pm 2.5$  dB; balanced 200 ohms; cardioid; hand-held; use for speech, music and tape recording; "pop" or "blast" filter; \$35.00.

**MB 270**

Dynamic; response 70-15,000 Hz at  $\pm 2.5$  dB; balanced 200 ohms; cardioid; hand-held; use for speech, music and tape recording; "pop" or "blast" filter; Model MB 270S has slide shorting switch - \$65.00; \$60.00.

**TEAC CORP. OF AMERICA****MC-201**

Electret; response 50-15,000 Hz (reference not stated); balanced 600 ohms; with "slip-in" stand attachment; use for speech and music; windscreen; 10' cable; battery life 9000 hours; \$50.00.

**THE TURNER COMPANY, INC.****Model 35**

Dynamic; sensitivity -154 dB EIA; response 50-12,000 Hz (reference not stated); user selects hi or lo impedance; omnidirectional; lavalier; use for speech; non-reflecting desert gold finish; 25' cable; Price \$70.00.

**Model 500**

Dynamic; sensitivity -151 dB EIA; response 40-15,000 Hz (reference not stated); user selects hi or lo impedance; cardioid; hand-held with "slip-in" stand attachment; use for speech, rock vocals and music; "pop" or "blast" filter; satin chrome finish; detachable 20' cable; supplied with XLR connector; also available with rotary on-off switch as Model S-500; price \$100.00

**Model 600**

Dynamic; sensitivity -151 dB EIA; response 50-15,000 Hz (reference not stated); hi imped-



ance; user selects hi or lo impedance; cardioid; hand-held with "slip-in" stand attachment; use for speech, rock vocals and music; "pop" or "blast" filter; on-off switch; satin chrome finish; detachable 12' cable; also available in lo impedance as Model 602; price \$70.00.

**Model 700**

Dynamic; sensitivity -151 dB EIA; response 40-15,000 Hz (reference not stated); user se-



lects hi or lo impedance; cardioid; hand-held; with "slip-in" stand attachment; use for speech; rock vocals and music; "pop" or "blast" filter; on-off switch; satin chrome finish; detachable 20' cable; supplied with Switchcraft A4F connector; price \$95.00.

**Model 2266**

Dynamic; sensitivity -155 dB EIA; response 40-15,000 Hz (reference not stated); hi impedance; cardioid; hand-held with "slip-in" stand attachment; use for speech, rock vocals and music; on-off switch; satin chrome finish; detachable 15' cable; supplied with phone plug; price \$90.00.

**Model 2300**

Dynamic; sensitivity -151 dB EIA; response 50-15,000 Hz (reference not stated); hi impedance; omnidirectional; hand-held with "slip-in" stand attachment; use for speech, rock vocals, music, and tape recording; on-off switch; satin chrome finish; 20' cable; supplied with phone plug; also available in lo impedance as Model 2302; price \$80.00.

**Model 2850**

Dynamic; sensitivity -161 dB EIA; response 70-10,000 Hz (reference not stated); user se-



lects hi or lo impedance; cardioid; hand-held with "slip-in" stand attachment; lavalier clip; use for speech and tape recording; on-off switch; black finish; 12' cable; not supplied with connector; price \$50.00.

**UNIVERSITY SOUND****Model 2040**

Dynamic; sensitivity -143 dB EIA; response 50-14,000 Hz (reference not stated); user selects hi or lo impedance; omnidirectional; with "slip-in" stand attachment; use for speech; on-off switch; acrylic silver gray finish; 18' cable; not supplied with connector; price \$68.95.

**Model 5100**

Dynamic; sensitivity -147 dB EIA; response 25-18,000 Hz (reference not stated); user selects hi or lo impedance; cardioid; hand-held with "slip-in" stand attachment; shock mounted; use for speech; on-off switch; satin chrome finish; 18' cable; not supplied with connector; price \$109.45.

**Model 8100**

Dynamic; sensitivity -154 dB EIA; response 70-15,000 Hz (reference not stated); user selects hi or lo impedance; cardioid; with "slip-in" stand attachment; shock mounted; use for speech, music and tape recording; on-off switch; platinum silver acrylic finish; 18' cable; not supplied with connector; price \$68.20.

**Model 6000**

Dynamic; sensitivity -151 dB EIA; response 50-15,000 Hz (reference not stated); lo imped-



ance; cardioid; lavalier; use for speech, rock vocals, music, and tape recording; wind screen and sibilance filter; satin chrome finish and flat black finish; 18' cable; not supplied with connector; price \$69.58.

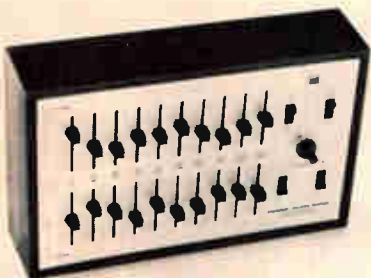
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## Miscellaneous

### ADVENT CORPORATION

#### Frequency Balance Control

An active graphic tone-control equalizer with response of 10-20,000 Hz and 10 octave-level



controls with  $\pm 12$  dB variation; two-channel design with switchable input sensitivity 350 mV to 1.4 V rms; HD less than 0.5%; IM distortion less than 0.2%; S/N better than 60 dB; maximum output 4.5 V;  $7\frac{3}{4}'' \times 12'' \times 12'' \times 3\frac{3}{8}''$  D; \$225.00.

#### Model 100 Dolby System

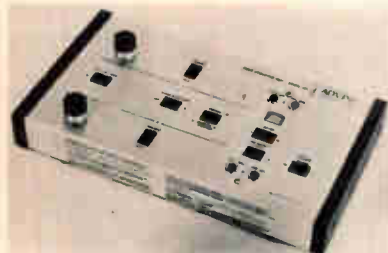
Tape-recording noise reduction unit with Dolby "B-type" for home tape recording/playback of



Dolbyized" prerecorded commercial tapes; operates on both recording & playback of stereo material; separates input level controls for line & microphones; separate output level controls each channel; multiplex filtering for suppression of pilot frequencies; headphone monitoring output; sold pre-calibrated; S/N improvement 3 dB at 600 Hz, 6 dB at 1200 Hz & over 10 dB above 4000 Hz;  $5'' \times 12\frac{7}{8}'' \times 8\frac{3}{4}''$  D; cabinet extra; \$250.00.

#### Model 101 Dolby System

Similar in principle to Model 100, but can only



be used in record or playback mode (uses same circuitry); but not simultaneously for two operational modes; \$120.00.

### ALTEC LANSING

#### 729A "Acousta-Voicette"



1972 EDITION

Used to modify combined response of room and speaker as required for optimum flatness of frequency response in specific listening area; narrow-band adjustable filters, each covering  $\frac{1}{2}$  octave; stereo design with 24 filters for each channel covering center frequencies between 63 and 12,500 Hz; loss/octave adjustable from 0-12 dB; 17 dB gain each channel to compensate for equalization losses; \$850.00.

### CONCORD

#### Model DBA-10 Dolby System

Tape record/playback noise reduction system using Dolby "B-type" system; individual input/



output channel-level controls with calibration adjustments available from front panel; includes calibration tone signal built-in; twin DIN/Dolby/NAB meters; \$129.95.

### EDITALL

(Elpa Marketing Industries, Inc.)

#### KP-2 Editing Kit

Complete kit includes splicing block, 30 splicing tapes, demagnetized razor blade, grease pencil; \$3.50.

#### KS-2 Editing Kit

For  $\frac{1}{4}''$  tape, includes  $4'' \times \frac{3}{4}'' \times 1\frac{1}{4}''$  block, mark-



ing pencil; roll of splicing tape, cutting blade; \$8.50.

#### KS-3 Editing Kit

Same as KS-2 except includes larger block ( $5\frac{3}{4}'' \times 1'' \times \frac{3}{8}''$ ); \$10.00.

#### P-2 Splicing Block

Plastic splicing block for  $\frac{1}{4}''$  tapes; \$1.50.

#### Metal Splicing Blocks

S-1 for 150" cassette-type tape—\$9.00; S-2 for  $\frac{1}{4}''$  tape compact machines—\$7.50; S-3 for  $\frac{1}{4}''$  tape console machines—\$9.00; S-3.5 for  $\frac{1}{4}''$  tape—\$25.00; S-3.75 for  $\frac{3}{8}''$  tape—\$30.00.

### ELECTROHOME, LTD.

#### "Environment I" Reverb Unit

Dual torsion-type reverberation system with 30 W dual-channel amplifier; warped response 50-4000 Hz; initial time delay 25 milliseconds; decay time 1.8 sec.; \$89.95.

### KENWOOD ELECTRONICS, INC.

#### Model KC-6060A Audio-Lab Scope



Oscilloscope designed for audiophile; may be used to display audio sine-waves from either stereo channel; includes its own test signal; variable sweep rate 10-100,000 Hz in 4 steps; internal synchronization; will also display complex musical waveforms; can be connected to Stereo FM tuner or receiver to display multipath effects; 3" scope display tube;  $5\frac{3}{8}'' \times 16\frac{1}{8}'' \times 11''$  D; \$219.95.

### MICOTRON

#### 17-014 8-Track Head Cleaner

An abrasive tape that cleans as it passes over heads; \$1.49.

#### 17-013 Cassette Head Cleaner

An abrasive tape that cleans as it passes over heads; \$1.09.

### MIDLAND

#### 14-580 8-Track Head Demagnetizer



117-V a.c. operation; will also remove dust & oxide deposits; \$5.95.

#### 14-579 8-Track Head Demagnetizer

Same as 18-580 except 12-V d.c. operation; \$7.95.

### NUCLEAR PRODUCTS CO.

#### Model 2U500w/BFI Positioner

Flexible arm with heavy base holds model 2U500 ionizing unit over playing record; for use with professional turntables; neutralizes static while record is playing; supplied with ionizing unit; \$19.75.

#### Model 3C500 "Staticmaster"

Soft hair retractable brush with extra-strength



polonium element; designed to neutralize static and remove dust from records; (replacement cartridge \$7.95); \$12.95.

### PIONEER

(U.S. Pioneer Electronics Corp.)

#### SR-202W Reverberation Amp

Solid-state; double-scatter system blends direct



signals from source with reverb effect; reverb time 0 to 2.5 sec. at 1 kHz; HD less than 0.2% at 1 kHz reverb time; min. output level 330 mV;

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## Miscellaneous

response 20-35,000 Hz  $\pm 2$  dB (min. reverb time); 20-50,000 Hz  $\pm 10$  dB (max. reverb time); S/N ratio 65 dB at 330 mV output; 110, 120, 130, 220, 240 V switchable power supply; 13 $\frac{1}{4}$ " x 5 $\frac{1}{2}$ " x 10 $\frac{1}{2}$ " D; \$99.95.

### SD-1000 Stereo Display

Five separate circuits for testing operation of every part of sound system; oscilloscope; two



level meters capable of measuring 10 mV to 20 mV signals; audio oscillator; input circuit; microphone amplifier (for checking room acoustics & speaker balance); checks amplifier specifications except distortion; tuner signals; multipath distortion; displays amplified phono signals; checks frequency response, trackability, and channel separation of phono cartridges; response & separation of tape decks; stereo speaker balance; room acoustics; \$549.95.

### RGF ENGINEERING & DESIGN

#### RGF-E Dynamic Equalizer

Active equalizer to correct for poor room acoustics; extends and smoothens frequency response



of any quality speaker system from 5-30,000 Hz; 4 $\frac{1}{2}$ " x 16 $\frac{1}{4}$ " x 10 $\frac{1}{4}$ " D; walnut enclosure; \$219.50.

#### RGF-2E Equalizer/Speakers

Two RGF-2 speaker systems with RGF-2 active dynamic equalizer; \$499.50.

### ROTRON, INC.

#### "Whisper Venturi Fan"

Specially designed cooling fan for preventing overheating of component hi-fi equipment; can be placed or mounted within cabinet, will move 60 cubic feet of air/min; draws 7 watts; 5 $\frac{3}{8}$ " x 5 $\frac{3}{8}$ " x 1 $\frac{1}{8}$ " D; \$15.95.

### SANSUI ELECTRONICS CORP.

#### Model CD5 Electronic Crossover

Solid-state; choice eight crossover frequencies (200,340,560 & 900 Hz between low & mid ranges; 2500,3600,5000 & 7000 Hz between mid & high ranges); frequencies rotary switch-selected; can be used as bi-amp or tri-amp crossover; cut-off characteristic switches with safety button; direct output terminal to bypass crossover; separate level controls for stereo balancing; maximum input voltage 3 V; rated output 2 V; THD less than 0.3% at rated output; hum and noise better than -70 dB at rated output; load impedance over 100k ohms; 110/117 V a.c.; 50/60 Hz 4 $\frac{3}{8}$ " x 6" x 10 $\frac{1}{2}$ " D; \$99.95.

### SHERWOOD ELECTRONIC LABS, INC.

#### Model SL-1 "Stereo-Lite"

Provides instant identification of FM station

broadcasting stereo multiplex programs; can be mounted inside cabinet;  $\frac{5}{8}$ " dia. hole required; adjustable sensitivity; will operate with any FM tuner; \$29.50.

### SHURE BROTHERS, INC.

#### SA-1 "Solo-Phone"

Stereo amplifier for headphones; permits 2 sets of phones to be used simultaneously; balance control; dual input for tape/tuner or phono; phono input 47k ohms equalized for mag. cartridge; tuner input 250k ohms; output 8 ohms, 100 mV; (SA-1F panel-mounting version—\$57.00); 10 $\frac{1}{4}$ " x 3 $\frac{1}{2}$ " x 3 $\frac{1}{8}$ " D; \$48.00.

#### SA-10 "Solo-Phone" Portable

Combines 4-speed record changer & stereo amp for headphone listening; plays up to 8 records intermixed 7", 10", 12" or may be operated manually; two sets headphone jacks; 120-V operation; \$120.00.

#### SA-10M "Solo-Phone" Portable

Same as Model SA-10 except has Garrard 4-speed manual turntable; handles 7", 10", 12" records at all four speeds; \$120.00.

#### M68 Microphone Mixer

Five-channels; transistorized; portable mixer for p.a. and tape recorders; four mike inputs for high-impedance mikes; one high-level aux. input for tape, tuner & accessories; individual volume control to balance ea. of five inputs; master volume control to simultaneously control level of all inputs; high-imp. mike and aux. outputs; 105-130 V, 50/60 Hz; \$140.00.

#### M67 Microphone Mixer

Four low-impedance balanced mike inputs & one line input; built-in tone oscillator for calibration; response 20-20,000 Hz  $\pm 2$  dB; automatic switchover to battery if power fails; gain 90 dB max. (150-ohm mike into 600-ohm line); 11 $\frac{3}{8}$ " x 7 $\frac{1}{2}$ " x 2 $\frac{1}{2}$ "; \$270.00; battery \$25 extra.

#### M688 Stereo Microphone Mixer

For use with stereo tape recorders without built-in mixing; accepts four high- or low-impedance mikes through four inputs plus stereo aux. high-level input, each with own volume control; three mike inputs have front-panel switches for left- or right-channel output; fourth microphone input has pan control; stereo master volume control adjusts level of all inputs; (list) \$190.00.

#### M63 Audio Control

For use with mike mixers; provides volume, bass, treble & high- and low-freq. roll-off; VU meter; two high-level inputs for mike mixer, tape recorder; tuner; five different outputs: 600-ohm balanced line, high-imp high-level, high-imp. mike level, low-imp. mike level (balanced), headphone; \$160.00.

#### M62V Audio Level Control

Automatic mike volume control; prevents blasting; output adjustable to predetermined level; response 20-20,000 Hz  $\pm 2$  dB; compression 40dB input change, 6 dB output; for single mike; on/off bypass switch; can be battery operated or from M68 mixer; 11 $\frac{3}{8}$ " x 5 $\frac{1}{4}$ " x 2 $\frac{1}{2}$ " D; \$100.00.

#### M-64 Stereo Preamp

Provides gain & equalization to operate mag. phono cartridges & tape playback heads with amplifiers without equalization; response flat 20-20,000 Hz  $\pm 2$  dB; phono RIAA curve 40-15,000 Hz  $\pm 2$  dB; tape for 7 $\frac{1}{2}$  ips NAB curve 50-15,000 Hz  $\pm 2$  dB; max. input phono & tape 100 mV; flat 250 mV; \$34.00.

#### SFG-2 Stylus Force Gauge

For all modern tonearms & manual or automatic turntables; accurate within  $\frac{1}{10}$ th gram in primary operating range of  $\frac{1}{2}$  to 1 $\frac{1}{2}$  grams; extended measurement range to 3 grams, stainless steel pivots; \$4.95.

### SONY/SUPERSCOPE (Superscope, Inc.)

#### HE-2 Head Demagnetizer



Designed with high flux density to provide max. reduction of residual magnetism; \$12.95.

#### BE-7 Cassette Bulk Eraser

Erases all cassettes without a.c. power or batteries; \$24.95.

#### MX-6S Stereo/Mono Mixer

Connects to all Sony solid-state recorders; provides mixing facilities for up to three mikes &



three high-level sources; used for both stereo & mono; required for sound-on-sound recording with Models 252-D, 666-D, 560D, 225; less than \$29.95.

#### MX-12 Stereo Mono Mixer

Six-channel, battery-operated solid-state design; straight-line graphic level controls; level reset indicators; dual outputs for driving both p.a. & tape recorder; mono/stereo selector; battery condition/VU meters; 117-V a.c. operation optional; mike & high-level inputs; response 30-25,000 Hz  $\pm 1.5$  dB; 15 $\frac{3}{8}$ " x 7 $\frac{1}{2}$ " x 7" D; \$99.50.

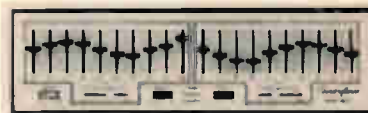
#### RK-66 Magnetic Phono Adapter

Provides proper RIAA phono equalization for direct connection of magnetic phono cartridge to any Sony tape recorder; not required for Models 230, 560, or 630; two required for stereo; each \$2.95.

### SOUNDCRAFTSMEN

#### 20-12 Audio Frequency Equalizer

Incorporates both active & passive circuitry for simplified adjustment of 10 individual octaves



each channel for precise frequency balancing; zero setting for flat response; equalization test record (supplied) provides pink-noise tone alternating each frequency band with 1000-Hz reference tone for rapid equalization of room conditions; total available boost up to +18 dB; total cut down to -24 dB; rack mount or walnut cabinet; \$299.50.

#### 10-12 Single-Channel Equalizer

Provides precise monitoring of input/output levels; calibration, full-frequency & individ-



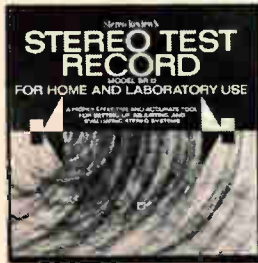
ual octave frequency controls coordinated with metering bypass, selection, tape bypass, and equalizer bypass switches; 12 dB boost/cut per octave plus 12 dB cut or 6 dB gain of full frequency spectrum; test record included; walnut grain case; brushed gold/black panel; \$299.50.

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tuner input, both channels driven); THD speakers less than 2%, phones less than 0.5%; max. sine-wave output speakers & phones 500 mW into 8 ohms both channels driven; hum level 75 dB below full output on mag. phono inputs; front-panel input (tuner-phonon) selector; left & right vol; two parallel stereo headphone jacks; illuminated power switch; rear-panel mag. phono input; tuner input; speaker output; speaker-phones switch; over-all size 3" x 10 1/2" x 8 1/2" D; \$79.95.

### TEAC CORP. OF AMERICA

#### AF-201 Electronic Crossover

Three-way stereo electronic frequency divider; 2 or 3 channel operation; 9 crossover frequen-



cies; provides signal needed to match characteristics of any speaker systems & compensation for installation acoustics; \$199.50.

#### AZ-201 Performance Indicator



Cathode-ray tube FM tuning & multipath detector; detects Stereo-FM operation; can be used as peak VU meter; \$199.50.

#### AN-180 Outboard Dolby System

Record-playback control center with Dolby noise reduction system; recording section contains microphone & line preamps plus Dolby recording circuitry; playback section has playback line preamps & Dolby playback circuitry; can be used with any good tape deck; separate input



level controls for mike and line inputs for each stereo channel; two VU meters; internal test-tone oscillator; Dolby level standard tapes; source/tape monitor switch; multiplex filter prevents recording interference from pilot tone frequencies or unsuppressed multiplex carrier by tuner; \$289.50.

#### AN-80 Outboard Dolby System

Less elaborate version of AN-180; input mixing feature omitted & only one Dolby circuit per



channel; circuit operates for recording, then playback but not together; provides 10 dB noise reduction; \$129.50

#### AN-50 Outboard Dolby System

Compact, less elaborate version of AN-80; designed for use with cassette equipment such as Teac A-23, A-24, and A-25 or other conventional stereo cassette equipment; \$49.50.

### TELEX COMMUNICATIONS DIV.

#### Stereo 70 Speaker/Amplifier System

Sold in pairs; 6 W/channel dynamic (EIA) power amplifier with stereo preamps; 6" full-range speakers; can be used with phono or radio inputs; preamp outputs; 11 1/4" x 11 1/4" x 5" D; walnut cabinets; pair \$69.95.

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