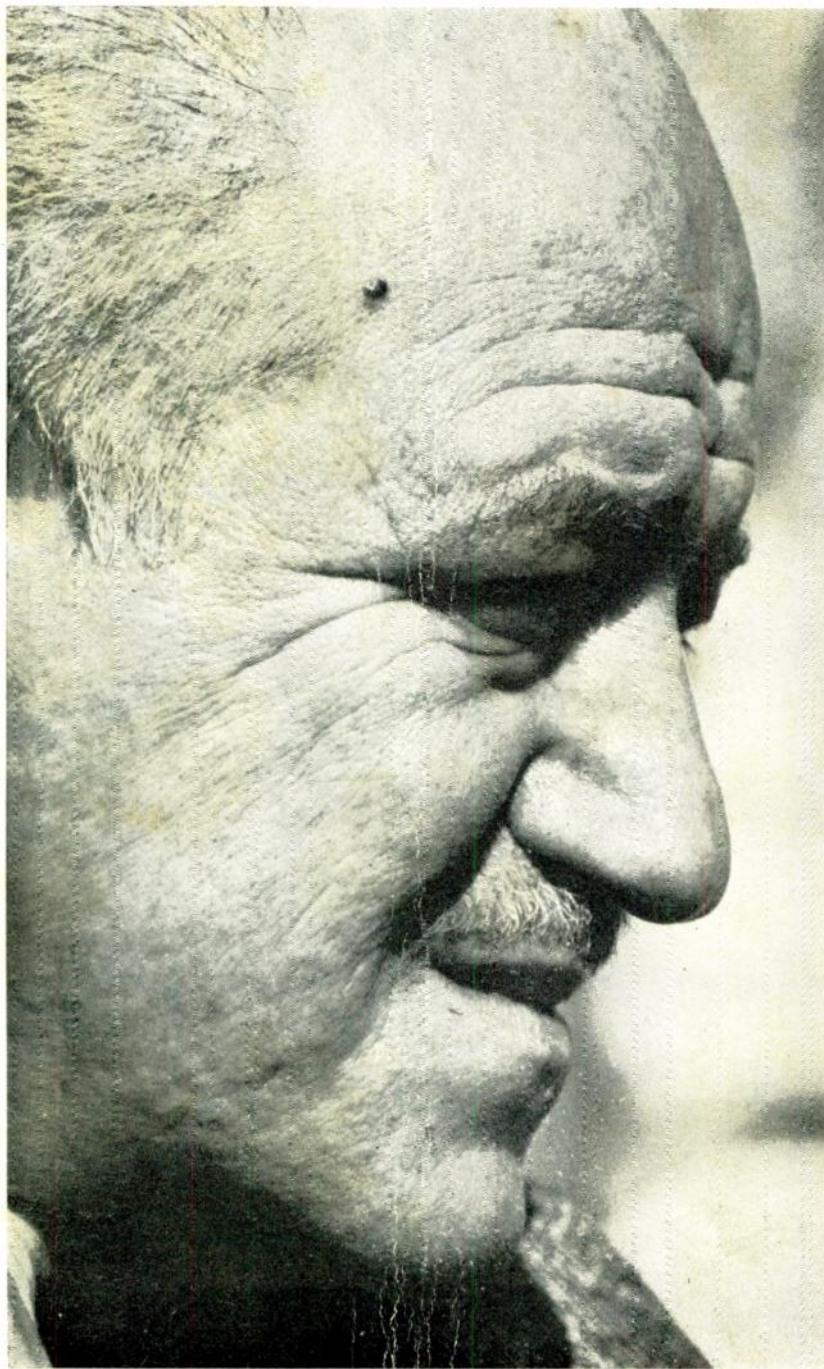


HIGH FIDELITY **trade news**

Volume 8, Number 9

September, 1964



RAYMOND V. PEPE

1912 - 1964

**Audio tells your customers
about Scott Solid State breakthrough...
Calls new Scott 312 "...one of
the finest tuners anywhere."**

***Use this great review as a potent
selling tool...refer to it often...it will
help you turn this engineering triumph
into a best-seller in your store!***

“If any doubt remains in the minds and hearts of audio fans as to the acceptability of transistors for use in high quality FM-stereo tuners, the Scott 312 should still these fears forevermore,” said Audio Magazine in their July 1964 issue (Page 32). “It is fully qualified to take its place beside such excellent tuners as the 310 and 4310. In some ways the 312 surpasses its predecessors . . . it is one of the finest tuners Scott makes. And that means it is one of the finest tuners anywhere.

“ . . . the limiters must be quite unusual judging by the extremely effective performance they provide. In the automatic stereo position . . . the 312 automatically sets itself for stereo or mono reception . . . this is done electronically and is probably the quietest automatic stereo switcher we have not heard.

“Perhaps the best testimonial to the over-all circuit, however, is the performance which we (Audio) list on the following table: Cross modulation index: 82 db; Stereo frequency response: = 0.7 db 3- to 15,000 cps; Signal-to-noise ratio: 65 db; Capture ratio 4 db; Selectivity: 34 db; IHF usable sensitivity: 2.0 μ v; AM suppression: 56 db; Impulse Noise Rejection: excellent; Distortion: 0.5%; Stereo separation: 36 db at 1000 cps.”

“In addition, the Scott 312 pulled in 36 stations loud and clear on our standard antenna, and was truly excellent in suppressing impulse noise . . . the 312 has excellent tuning feel and last, but not least, the sound quality of the 312 is to our ears the best Scott has ever produced. Altogether, a product to be proud of . . . ”

P.S. The tuner section of the new 3/4 Solid-State Tuner/Amplifier is identical to that of the 312!



H. H. SCOTT, INC., 111 Powdermill Road, Maynard, Mass.

EXPORT: Scott International, 111 Powdermill Road, Maynard, Massachusetts; Canada: Atlas Radio Corp., 50 Wingold Avenue, Toronto

SEPTEMBER, 1964

HIGH FIDELITY TRADE NEWS 3

New products
from

Sherwood



NEW...

S-9000, 150 watt all-silicon
solid-state stereo amplifier
... \$299.50

Sherwood's silicon solid-state circuitry makes the difference! The Sherwood S-9000 solid-state amplifier uses only silicon transistors; runs cool-as-a-cucumber with a temperature reserve great enough to boil water. Heat has been whipped as a cause of failure. This, plus advanced patent-applied-for short-circuit protection circuitry makes maintenance virtually a thing of the past. Hum and microphonics are absent ... distortion at full power is less than 1/2% ... less than 1/10% at lower levels. Phono input noise is less than -65db. Sherwood's S-9000 is a truly superb solid-state high fidelity amplifier that will outperform and outlast anything on the market.

*It pays to sell
the high fidelity line engineered for
performance and reliability ...
priced for protected-dealer-profit*

Sherwood

Sherwood Electronic Laboratories, Inc.
4300 North California Avenue,
Chicago, Illinois 60618

HIGH FIDELITY
trade news

Volume 8, No. 9

In this issue

September, 1964

A Show Is Born

No show is easy to put together. Read what San Francisco had to go through to get theirs
..... on page 25

Hooray for the S.F. Dealers

Our editorials page this month leads off with a tribute to a determined bunch. Reps, too, share in the salute on page 26

Don't Make a Move...

... without checking our story on leases. The primer for business property renters tells you what to look for before you sign on page 80

Sound Is Going to Blazes

At least it is in Los Angeles. Here's how the LA Fire Department uses the wide variety of audio (and visual) weapons in its arsenal
..... on page 114

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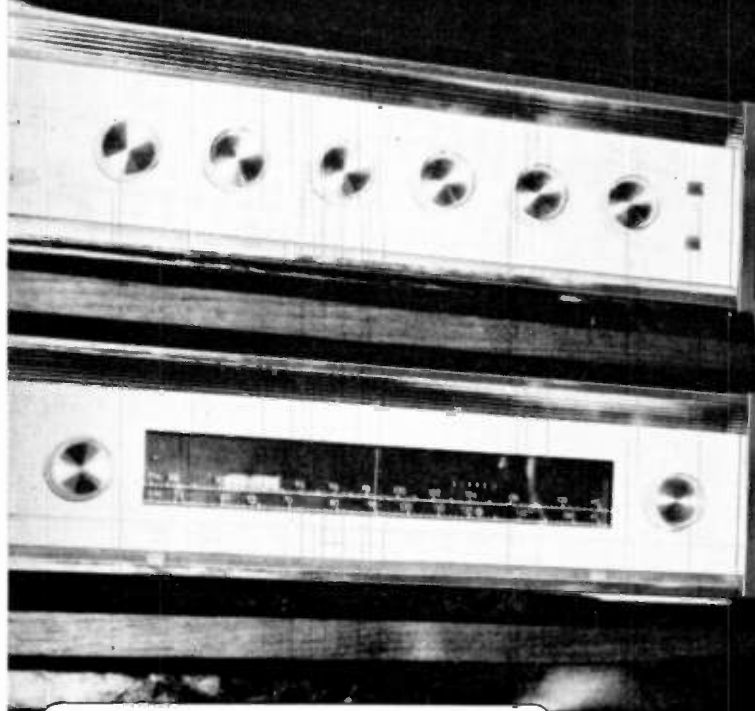
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BPA

"Solid, quality item . . . decent profit . . .
Sherwood is interested in me . . . " *



Joseph A. DeMambro
DeMambro Radio Supply,
Boston, Massachusetts



"The magic combination of quality merchandise—fast turnover—and attractive profit are terrific reasons for featuring Sherwood high fidelity equipment. Top-ratings in consumer publications create a tremendous demand."

*Complete quote, John Gill, Gill Custom House, Chicago, Illinois—
"We promote Sherwood because: 1. It's a solid, quality item throughout—the best there is for the money. 2. It permits a decent profit on each sale. 3. The Sherwood organization is interested in me and my business."



John Troy
Troy's Hi-Fi Stereo Center,
Durham, North Carolina

"Sherwood is growing . . . we want to grow with them. We can depend on their uniformly high quality and Fair Trade standards. Public approval of the style and performance is obvious."

John Gill, Bill Ree, John Troy, and Joseph A. DeMambro are typical of the dealers selling Sherwood high fidelity components. They're making a first-class Sherwood-protected profit . . . convinced that selling Sherwood-quality helps build and protect their reputation . . . appreciative that Sherwood reliability reduces time-consuming and profit-swiping service calls.

There are hundreds of John Gill's, Bill Ree's, John Troy's and Joseph A. DeMambro's among Sherwood's distributors. Each is convinced that he has a good deal. Why not join them?

Bill Ree
Ree Electronics,
Philadelphia, Pennsylvania



"We carry the Sherwood line because we can offer full customer service and still make an excellent profit."

Sherwood
HIGH FIDELITY

Sherwood Electronic Laboratories, Inc.
4300 North California Avenue
Chicago, Illinois 60618 • Phone 478-7300

STEREO RECEIVERS • TUNERS • AMPLIFIERS • SPEAKER SYSTEMS

STEP UP AND TAG YOURSELF

NEW PROFIT-MAKER No.1

FREE! A self-threading reel with each 7" roll of double or triple length tape!



A bargain for your customers, a real sales-maker for you. Lets you offer the only genuine self-threading reel free. Right now, it comes packed and sealed as shown for maximum eye-appeal and protection with each 7" roll of double or triple length SCOTCH® Brand Recording Tape. Just lay tape inside this self-threading reel, turn on recorder, reel threads up automatically. A limited time offer, so stock up now.

Advertising will soon break in more than a dozen leading national consumer and audiophile publications, including Sports Illustrated, Esquire, New Yorker, HiFi/Stereo Review, High Fidelity.

NEW PROFIT-MAKER No.2

FREE! A new heavy-duty plastic mailer with every "Living Letter" tape!



Your customers will welcome this handsome dust-free high-strength mailing and storage case, now standard with each "SCOTCH" Brand "Living Letter" tape. Conforms to new postal regulations. Address label is included. Built-in post holds reel securely. *And the reel is new, too, fits all* reel-to-reel recorders. Only 3" reel available that holds full 600' of triple length tape. "Living Letters" also offered in 150' and 300' lengths.

SOME EXTRA PROFIT!

NEW PROFIT-MAKER No.3

FREE! Handsome mailbox display with purchase of 72 "Living Letter" tapes!



This eye-catching, red and blue display sells the "Living Letter" idea—lets you cash in on high-profit turnover. Sits on counter (won't scratch) or mounts on wall. Three self-serve channels (or you can make display pilfer-proof). Removable price card included. All-metal construction—18" high, 9" deep, 11½" wide. Just order Deal LL from your supplier now. Comes stocked with 24 rolls each of 150', 300', 600' lengths—with profit of \$54.72 in the bargain for you!

NEW PROFIT-MAKER No.4

FREE! Compact self-serve accessories display unit with 48-item purchase!



Here's point-of-sale power for high-profit turnover of accessories—splicing tape, sensing tape, leader and timing tapes, end-of-reel tape clips. AD-1 display shown is yours free with purchase of any 48-item assortment of these accessories. Place it anywhere. Mounts easily on pegboard or wall. 17¼" x 2¼".

Ask your 3M representative for complete details on the new FCD-2 floorstand unit that offers you a complete "SCOTCH" Recording Tape Center.

"SCOTCH" AND THE PLAID DESIGN ARE REG. TMS OF 3M CO., ST. PAUL, MINN. 55119 ©1964, 3M CO.

Magnetic Products Division **3M** COMPANY

go to press . . . As we go to press . . . As we go
-- -- ----- -- -- -- -- -- ----- -- -- --

The death of Ray Pepe comes as a severe shock to us all. In the hours that remained before this month's press run began, we prepared a small album of characteristic photographs--a sort of memento of the man. You will find it on page 86.

It's entirely a matter of coincidence, we're sure, but the Jerrold home entertainment subsidiaries always seem to release their news just before our press deadline. The most recent is the resignation of Roland Kalb as Jerrold v-p, head of the Home Entertainment Division, and general manager of Pilot. The Pilot post is being taken over by Sidney Brandt. You'll find pictures on page 78. Brandt comes to pilot from posts as sales and operations v-p for MGM Records and regional manager for Magnavox.

The last we heard about Telcan was the announcement of receivership on the part of its parent, Nottingham Electronic Valve Co. Let's see; now, who does that leave?

Communications have been very much in the news. When the FCC announced the new rules for CB use, signs of panic started to show. What's going to happen to a booming industry if the public is discouraged or even prevented from using the medium? After having slowly geared ourselves to the idea that consumer CB was here to grow, what are we going to do now?

Well, Bernard Levine, president of Vernitron Corp., says he feels it's all a big worry about nothing. United Scientific Laboratories, Vernitron division, are expecting CB sales to be better than ever. Many small business men, according to Levine, have been reluctant to purchase communications equipment because of all the nonsense on the air. Now, they will be encouraged to buy, he says. "The FCC order is intended to discourage misuse of the CB frequencies, but it isn't designed to act as a deterrent to those who have an honest interest in radio."

Some people have confused CB with ham gear and have wondered out loud whether Barry Goldwater's use of radio has prompted the FCC to get into politics. Although that connection is obviously based on misinformation, one rumor that has been floating around is more to the point. The rumor, no doubt started in the Democratic camp, runs something like this: Ham operators are being encouraged to spread the word that the senator is one of the fraternity. A ham being a ham, he will naturally want to use his gear to spread the word. This is, of course, in direct opposition to FCC regulations. Then, the rumor concludes, if the FCC clamps down, Senator Goldwater will be in the politically enviable position of being able to appear as the persecuted victim of big government and the undue use of political influence in government agencies.

Hot price news from Fisher concerns reductions on two receivers. Model 400 is now down to \$299.50 (from \$329.50) and Model 600-T is \$499.50 (from \$595.00). Fisher credits large demand and resultant economies for the price cuts. A large-scale ad campaign is being planned to exploit the reductions.

Some day someone will try to imitate the DUAL 1009 auto/professional turntable

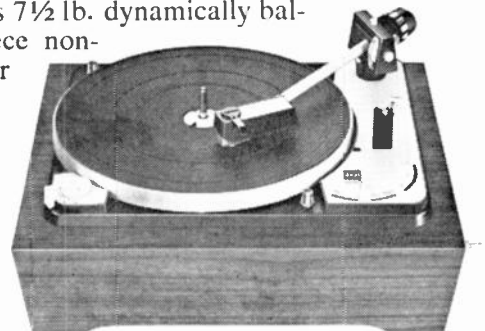
(if they do, here's how to tell and sell the difference)

The Dual 1009 is the *one* that . . .

1. Tracks and trips flawlessly at ½ gram (because it was designed to)
2. Gives you simple and precise direct-dial stylus force adjust from 0 grams up
3. Applies stylus force directly at tonearm pivot, preserving perfect tonearm balance
4. Plays all four speeds—16, 33, 45, 78
5. Provides variable speed control over 6% range, assuring perfect pitch

. . . and, of course, the Dual 1009 already enjoys a solid year of proven performance, verified and acclaimed by the entire industry.
That alone will take some catching up.

6. Lets you start automatically in single play as well as in changer operation
7. Avoids record hole wear by lifting weight of the stack off each record before it drops
8. Maintains constant speed even when line voltage varies beyond 10%
9. Has anti-skating compensation for 1 gram tracking built into tonearm system
10. Features 7½ lb. dynamically balanced one-piece non-ferrous platter



UNITED AUDIO  DUAL
12 WEST 18TH ST., N.Y. N.Y. 10011

Where to find them at the San Francisco Stereo High Fidelity Music Show

Acoustech, Inc.	6-A	Kenwood Electronics, Inc.	M
Acoustic Research, Inc.	G	Koss/Rek-O-Kut Co., Inc.	Booth #5
Ampex Corp.	Booth #6	KLH Research & Development	D
Audio Magazine	Booth #1		
		Jas. B. Lansing Sound	9
Barzilay Furniture	4-A		
Benjamin Electronic Sound	H	Marantz Co., Inc.	Booth #4
Bogen Communications Div.	F	Martel Electronics	C
The R. T. Bozak Mfg. Co.	L	McIntosh Laboratory, Inc.	5-B
British Industries Corp.	8		
		Norelco	7
Concertone	B	Pickering & Co., Inc.	401, 400, 468
		Pilot Radio Corp.	K
Dynaco Inc.	3		
		Roberts Electronics, Inc.	z 4-A
Electro-Voice, Inc.	A		
Elpa Marketing Industries	L	H. H. Scott, Inc.	1
EMI Scope Electronics	B	Sherwood Electronic Labs.	A
		Shure Bros., Inc.	N
Empire Scientific Corp.	6-A	Superscope, Inc.	2
Fisher Radio Corp.	4-B		
		Tannoy (America) Ltd.	J
Goodmans of England	434, 435, 436		
		United Audio Products	5-A
Harman-Kardon, Inc.	E	University Loudspeakers	6-B
High Fidelity Magazine	Booth #2	Ziff-Davis Publications	Booth #3

Also participating are the following radio stations:
KPEN, KMPX, KBRG, KFOG



Ham 'n eggs, Love 'n marriage, Laurel 'n Hardy
Fine equipment 'n Turner Twin Stereo microphones
SOME THINGS JUST NATURALLY GO TOGETHER

When a customer spends several hundred dollars on stereo or hi-fi sound equipment, he expects quality sound reproduction. You can do him a big favor by recommending Turner Model 500 Cardioid microphones. Remember, fine recording depends first of all on a fine microphone, and the Turner 500 is guaranteed to produce excellent recordings with all makes of home or professional recording equipment. So, make yourself look good . . . make your customers feel good by getting the most from their equipment. When they ask about microphones . . .

TELL 'EM TURNER!
free literature available



MICROPHONE COMPANY
955 17th Street N.E., Cedar Rapids, Iowa

In Canada: Tri-Tel Associates, Ltd., 81 Sheppard Ave., West, Willowdale, Ontario

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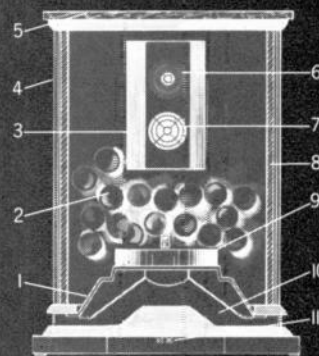
MODEL 500
LIST PRICE \$84.00

Meet the new Royal Grenadier world's most perfect speaker system. Pretty soon every stereo system 'round will be featuring this revolutionary divergent lens speaker system. The first loudspeaker ever designed and engineered for stereophonic reproduction. Lets you sit anywhere—hear everything.



 **EMPIRE**

Circle No. 108 on Reader Service Card.



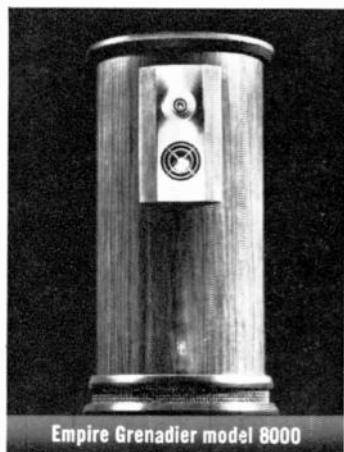
As Featured At The World's Fair Pavilion of American Interiors

The New Empire Royal Grenadier Divergent Lens Speaker System—Model 9000M

Years ahead in design and engineering the Grenadier projects a majestic sound unlike any you've heard before. Its cylindrical shape creates a system relatively free from room standing waves and approaches acoustically flat frequency response. Sound level and tone remain constant virtually anywhere in the room. Its three divergent acoustic lenses achieve unparalleled stereo separation. With the Empire Grenadier . . . speaker placement becomes non-critical.

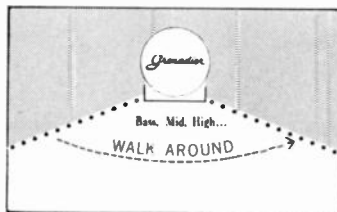
Model 9000M
outstanding features:

1. 15" mass loaded woofer with floating suspension and 4" voice coil.
2. Sound absorbent rear loading.
3. Die-cast mid frequency-high frequency full dispersion acoustic lens.
4. Hand rubbed satin walnut finish.
5. Imported Italian Perlata marble.
6. Ultra-sonic domed tweeter.
7. Full presence mid range direct radiator.
8. Exclusive non-resonant rigidized heptagonal sonic column.
9. World's largest (18 lbs.) speaker ceramic magnet structure.
10. Front loaded Horn—360° aperture throat.
11. Complete symmetry of design with terminals concealed underneath.
12. Dimensions: height 29" — diameter 22".



Empire Grenadier model 8000

Started a new era in speaker systems. Measures 29" high with a 15 1/4" diameter. Its features are virtually the same as the 9000 plus the exclusive Empire Dynamic Bass Reflex . . . high Q reflex tuned columns for in-phase low frequency reinforcement. The scientifically accurate gradients and vented ports provide unbelievably enriched base response.



Try this simple test.

You will notice no change in sound level of bass, mid range, and highs. Full frequency and separation is assured by Empire's exclusive divergent acoustic lens system.

Try this same test with any other brand of speaker. Some speakers will only have a narrow angle of high frequency sound propagation. Some may have 2 or even 3 bands of high frequency sound. With these or other speakers, slight shifts of position, turning one's head, or even leaning to one side may cause sharp changes in the listening tone and level. Not so with the Empire Grenadier.



Acoustically engineered to let you sit anywhere — hear everything. The Empire Grenadier is decorator-designed to fit any decor . . . from warm elegance to stark modern . . . fit in corners or against walls.

Its satin walnut finish is designed to blend with all furnishings. An imported Italian Perlata marble top is optional for added elegance on the model 9000. The Empire Grenadier is a truly beautiful and functional achievement in sight and sound.



For a sound demonstration of the Empire family of "most perfect" products, go 'round to your dealer or write for complete literature.

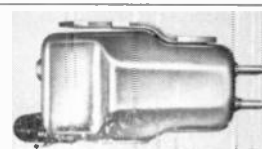
EMPIRE

"World's Most Perfect High Fidelity Components"



The Incomparable Troubadors —

The model 498 — tailor-made for console or equipment cabinets . . . the famous Empire 398 — outstanding — too handsomely finished to hide behind cabinet doors. High Fidelity reports on the Troubador: ". . . precision engineered product of the highest quality . . . one of the finest, handsomest record players available."



Empire 880P and 980PE Elliptical Cartridge

Audio Magazine stated "...truly excellent... the finest cartridge tested." Frequency response 8 to 30,000 cps. Compliance 20X 1C—6cm/dyne. Empire 880PE comes with a biradial elliptical hand polished .2 X .9 mil diamond.

Empire Scientific Corp. — 845 Stewart Ave., Garden City, L. I., N. Y. Export: EMEC, Plainview, L. I., N. Y. — Canada, Empire Scientific Corp., Ltd., 1476 Eglinton West, Toronto

Circle No. 108 on Reader Service Card.

It's easy to sell what everybody's buying.

**You are looking at
the greatest success story
in hi-fi history.**



The Fisher 500-C stereo receiver, world's best-selling high fidelity component. No wonder — with 1.8 microvolts FM sensitivity (IHF) and 75 watts music power (IHF), still priced at \$389.50. Fisher Radio Corporation, 21-21 44th Drive, L.I.C., N.Y. 11101.

The Fisher

Are You Selling Trouble?

BY FRED LUCAS,
Sales Manager—Tarzian Tape

Selling "bargain" tapes to customers who don't know of their inferior quality is risky business. You may lose repeat tape business, and good potential profit, faster than you can say "sounds are great on Tarzian Tape." Almost without exception such white box tape is either purposely inferior in quality, to cut costs, or is rejected tape from brand name production. It can be a very costly "saving" if it ruins your customers' expensive recorders and recordings.



Tarzian makes it easy for you and your sales personnel to help your customers tell good tape from bad. Five of the best "do-it-yourself" tests are described in our illustrated booklet "Lower the Cost of Fun with Tape Recording"—now in its fourth printing. It's an important part of the consistent, nation-wide promotion that has already pushed Tarzian Tape to new sales records in 1964...and you get free copies for customer distribution each time you order Tarzian Tape.

You can be sure that your customers are making a trouble-free purchase when you sell professional quality, competitively-priced Tarzian Tape. As to your profit margin, improve it right now with the Tarzian Tape Profit Builder Kit. For only \$30 you'll receive a colorful counter display case, other potent merchandising aids, and 36 reels of professional quality Tarzian Tape in 3", 5", and 7" sizes. Order today or write for more information and a free copy of "Lower the Cost of Fun with Tape Recording."



SARKES TARZIAN Inc.

World's Leading Manufacturers of TV and FM Tuners • Closed Circuit TV Systems • Broadcast Equipment • Air Trimmers • FM Radios • Magnetic Recording Tape • Semiconductor Devices

MAGNETIC TAPE DIVISION • BLOOMINGTON, INDIANA

Export: Ad Auriema, Inc., N.Y. • Canada: E. J. Piggott Enterprises Ltd., Toronto, Ont.

high fidelity soundings

ALL BUT TWO ROOMS have been sold out for the Northwest High Fidelity Stereo Component Show Oct. 30-Nov. 1 in Minneapolis, the sponsoring Paul Bunyan ERA Chapter reports. Extensive newspaper advertising is planned for the four weeks preceding the show.

... **Henry Berlin**, previously with Matthew Stuart, Lafayette and other consumer Electronics firms, joins EICO as marketing services administrator. ... Meanwhile, **EICO Canada, Ltd.**, subsidiary of the U.S. firm, has opened a new manufacturing and warehousing facility at 14 Grey St., Brantford, Ont. ... **Bernie Cohen**, associated with Marty Bettan Sales for the past six years, has purchased a full interest in the metro N.Y. rep firm and becomes secretary/treasurer. **Tom Brown** joins the firm's sales staff as distributor inventory control man.

... Seventy more prerecorded tape cartridges have been added by **Revere-Wollensak**, bring the number over 200. ... **Pure Sonics**, makers of the "Pure Quadramatic" amplifiers, has moved to larger quarters at 5707 W. Division St., Chicago. ... Oops, we forgot to look under the diaper. We said last month that a son was born to Bert Brooks of United Audio (Dual) and his wife, Dorothy. Actually, **Leslie Brooks** is a beautiful female, feminine, girl-type baby. ...

United Stereo Tapes has been renamed **Ampex Stereo Tapes** to identify the prerecorded tape manufacturing department more clearly with the parent co. ... **Milton D. Thalberg** has resigned from Sony Corp of America, where he was v.p. merchandising, to become president of **Febs Industries**, bicycle manufacturer. ... **R. R. Sherwood** resigns as operations manager at **LTV University**. ... **Ansel Kleiman** becomes general manager of **Telex Corp.'s Acoustic Division**, with total responsibility for headsets, microphones and other products in the firm's Communications Accessories and Hearing Aid Operations. He was previously general manager of **Viking** of Minneapolis. ... **Quietrol** radio & TV lubricant and cleaner has added two reps: **Moore Sales Co.**, Detroit, for Michigan, and **Sobel & Assoc.**, St. Louis, for Kansas, Nebraska, Iowa and Missouri. ...



**Someday this 7" reel of tape will be worth
as much as an old Caruso record.***

Talk about collectors' items! This is the world's first broadcast-quality stereo long-play tape album. *Long-play stereo tape!* Do you realize what this means? No fumbling around with tape cartridges. No more changing reels every hour or so. This first sample reel carries more than five hours of pure stereo music. If we'd wanted to, we could have made it twelve hours!

Your franchised Roberts dealer will give you a copy of this Collectors' Album (12 hi-fi stereo LP albums of famous artists' recordings on one reel). It's free. But there's a catch: You have to buy the only tape recorder capable of recording and reproducing pure stereo at 1 7/8 IPS... the revolutionary Roberts Cross Field 770! It's the Cross
SEPTEMBER, 1964

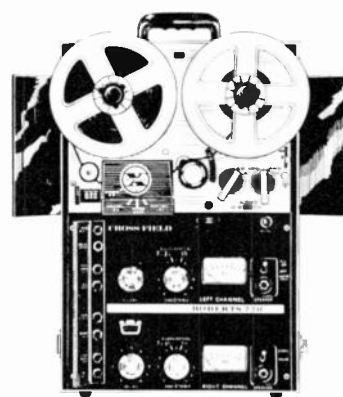
Field concept that makes LP stereo tape today's brilliant reality.

When you consider the cost of 12 LP record albums, our Collectors' Album makes a pretty valuable* gift. And until you have time to make your own LP stereo tapes, it's a great way to show off your new Cross Field 770.

ROBERTS DEALERS: Your customers will be hounding you for the 770 and the free Collectors' Albums. Sure you have enough in stock? Order now!

WANT TO BE A PROFIT-MAKING ROBERTS DEALER? Write Dept. **HFTN9** Al Barsimanto, Ntnl. Sales Mgr., Roberts Electronics, Division of Rheem Mfg. Co., 5922 Bowercroft Street, Los Angeles, Calif. 90016.

In Canada: J. M. Nelson Electronics, Ltd., 2149 Commercial Drive, Vancouver 12, British Columbia.



Robert Cross Field 770 4-Track Stereo Tape Recorder — \$499.95.

ROBERTS

SOLID STATE **PRICE** BREAKTHROUGH



ERIC'S NEW **COMPACT**

ALL TRANSISTOR FM MULTIPLEX TUNER List: \$115.00

ALL TRANSISTOR STEREO AMPLIFIER List: \$79.00

High quality solid state components at prices unheard of till now! In the compact size expected of transistorized units. Weighing approximately 5 lbs., each component measures only 2 $\frac{5}{8}$ " high, 10" wide, 7 $\frac{1}{2}$ " deep.

And in addition there is a good profit break for you. Sales hint: add a pair of speakers and a record player—and your customer has a complete stereo hi-fi system at an unbelievably low price!

SPECIFICATIONS

ST-100 Tuner Sensitivity: 2.5 microvolts for 20 db quieting
Frequency Response: 20 cps to 53 kc ± 1 db.
Band Width: 250 kc, 3 db point.
IF Rejection: 60 db.
Stereo Separation: 30 db from 20 cps to 15 kc.
Distortion: less than 1% at 100% modulation.
Automatic Stereo Indicator Light.
Automatic switching between FM and mx operation.

SA-40 Amplifier Power Output: 40 watts (peak total) at 16 ohm impedances.
Frequency Response: 30-20,000 cps ± 1 db.
Harmonic Distortion: below 2% at 5 watts output.
Hum and Noise: -70 db below full output.
Inputs: tuner sensitivity 250 millivolts RMS for full output. Phono, for low and high ceramic cartridge.

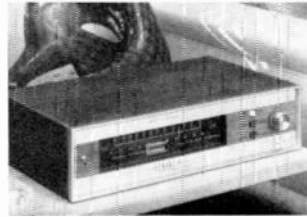
Call or write for information on the complete Eric line.



The Palomar. FM Multiplex All-transistorized stereo receiver.



The Sierra. All-transistorized stereo dual amplifier and pre-amp.



The Madera. FM Multiplex All-transistorized stereo tuner

ERIC

Electronics Corporation
2115 Colorado Avenue
Santa Monica, California
213-EX 3-9610



PHOTOGRAPHED IN NEW YORK SHOWROOM OF DUX INCORPORATED

**WHO WANTS TO
SEE A TAPE RECORDER
IN A LIVING ROOM**

**?
YOUR CUSTOMERS DO
(if it's Miranda®!)**



Two magnificent new stereo tape recorders featuring major electronic advances...plus the beauty of genuine teakwood cabinetry!

MIRANDA Sorrento Sophisticated solid-state circuitry, comprising an impressive array of 21 transistors and 19 diodes. Electronic matrix-type push-button switching positively and instantaneously controls every mode of tape transport. Tape-handling mechanism includes automatic tape lifters and tension bars. Other features include: built-in 4" x 6" full range dual speakers, automatic shut-off for motors and amplifiers, three motors plus servo motor for remote control, illuminated VU meters, pause switch, electronic switching delay, 3¾ and 7½ ips., records and plays 4-track stereo. *Priced at \$400.00*

MIRANDA Nocturne Hysteresis synchronous motor assures unfailing constancy in tape movement. Smoothly operating push-button controls make it a pleasure to operate. Each channel is provided with individual volume and tone controls, VU meter, two input jacks, output jacks for external speakers. Single switch allows the Nocturne to be used for either stereo or mono playback. Ten clean actual watts of audio power (5 per channel) plus matched 4" x 6" speakers give rich, full-bodied reproduction. The Nocturne records and plays 4-track stereo and mono in 1⅞, 3¾ and 7½ ips. *Priced at \$250.00*

REMOTE CONTROL: All tape transport controls plus separate channel volume controls, and 16 ft. cable. *Priced at \$35.00*

At last... the first truly practical design, conceived to open that vast market of audio fans who have been hungering for a tape recorder that doesn't have to be "hidden away" in a closet. CALL, WRITE, WIRE today for full information and a demonstration of this new profit-making line... MIRANDA.



ALLIED IMPEX CORPORATION, 300 PARK AVENUE SOUTH, NEW YORK 10, NEW YORK • CHICAGO 45, ILL. NOIS • DALLAS 7, TEXAS • LOS ANGELES 16, CALIFORNIA

SEPTEMBER, 1964

HIGH FIDELITY TRADE NEWS 17

Letters to the Editors

Cover to cover

Akron, Ohio

Last night I took home my copy of *Hi-Fi Trade News* to read at my leisure. This is one trade journal that I read cover to cover every issue.

After reading it, the observation occurred to me that perhaps you would

like to know that somebody appreciates getting a magazine such as this that deals with so many vital issues in the industry. I once heard a personnel director make a speech, and in it he reminded employers that "everyone wants to be loved." A propos with that, I thought you would like to know somebody appreciates reading not only the editorials and the articles,

but also the advertisements in the magazine.

Sidney L. Olson, president
Olson Electronics, Inc.

[Most readers seem to feel that, since we're in the business of writing, why should they try. That makes a letter like Sid Olson's doubly welcome because of the scarcity—both of pro's and con's.
—Ed.]

Success with mikes

New York, N.Y.

I feel that I must express my delight with the results of our entering the market with our new line of microphones. As of this date, the majority of the models are on an assembly line-to-dealer basis. The new 8000 and 8100 are in a backorder situation with our production working overtime to try to meet demands.

I want you to know that I feel your magazine, *HIGH FIDELITY TRADE NEWS* has had a large part in our success to date. I have had many orders for our microphones mailed to us with a note mentioning that they had seen our advertising in *HIGH FIDELITY TRADE NEWS*.

I also want to point out the cooperation and assistance given to me by your Mr. Ken Nelson. He is a good marketing man.

John J. Pacconi, Jr.,
Mgr., Special Products Div.
LTV University Loudspeakers

[Much obliged, John. By the way, how long have you been doing this PR work for Ken Nelson?
—Ed.]

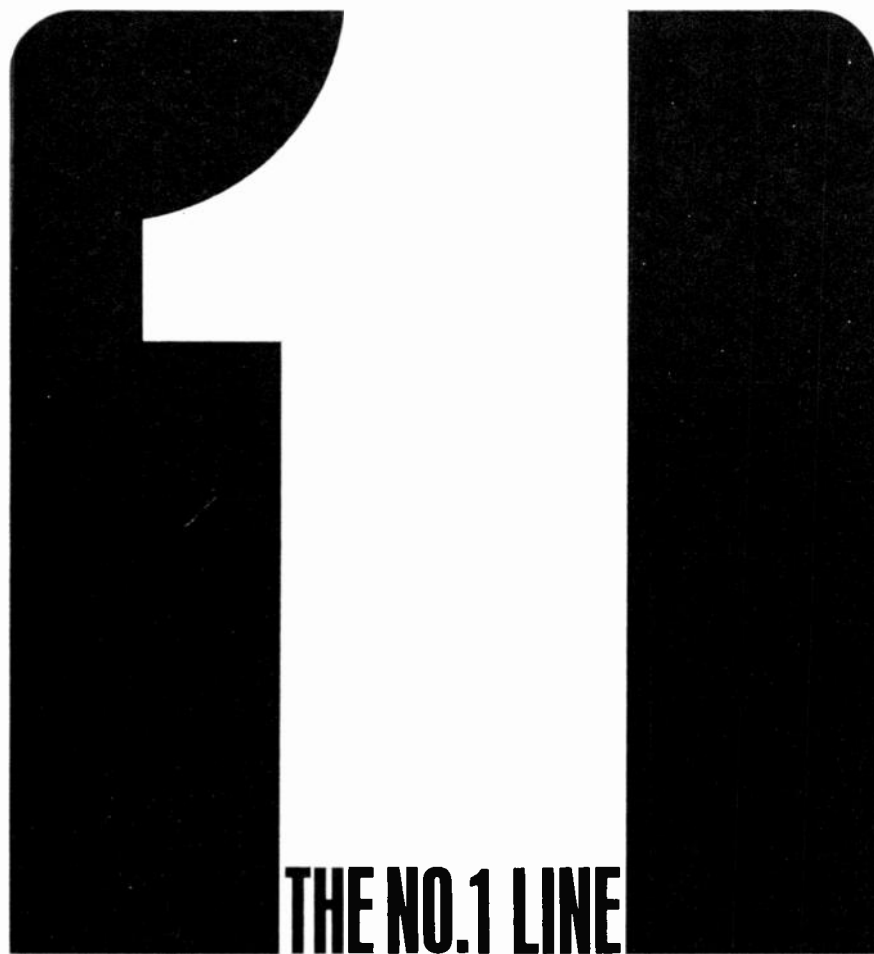
Open house

Benton, Ill.

I am very happy to announce that Lampley Electronics, Inc., is having an open house September 19th and 20th at their home store in Benton, Illinois. We want to make this more than an open house. We are working to make it the largest dealer parts show in the Mid-West. We will have displays with factory personnel on hand. There will be special entertainment for the ladies. In other words we are sparing nothing to insure that this open house will be a huge success!

If any of your personnel would like to cover our Dealer Show we would consider it an honor.

Roy E. Leman, sales manager
Lampley Electronics, Inc.



THE NO.1 LINE

**for the quality-conscious dealer
who wants prestige and
full profit with the broadest
and most versatile line**



exports: elpa marketing industries / new hyde park / n.y. / 11041 / u.s.a.

DARIEN / CONN. / 06821



The Listening Post

M.R. vs U.S.P.

by Joseph S. Tushinsky

A few years ago people were shocked to learn that a motion picture theater in New Jersey was pulling an insidious trick on its patrons. Periodically, during the showing of a film, this theater would flash "Eat Popcorn" on the screen so briefly that no one in the audience could be *consciously* aware of the message. Nevertheless, the audience "got the message" for, immediately after each flash, its members would crowd into the lobby and eat popcorn like there was no tomorrow.

This was the first time many people heard of the process of "subliminal stimulation" — the manipulation for ulterior purposes of the buried forces in that vast sewer of our minds known as the Unconscious. In this case, the purpose was to sell more popcorn.

The so-called science of determining just what was in the mass unconscious and just which stimuli would set it off, came to be known as M.R. — motivational research, and its practitioners were labeled "the depth boys." They quickly established themselves as the darlings of the ad agencies.

M.R. assumes that people are unreasonable beings. We are highly emotional. We are tense and seek to extravert our tensions. We are lonely and afraid. We want to be comforted. We want to be desired. We are snobs, cowards, status seekers, self-deceivers, and cover-upers. We are depositories of hatred. We are revengeful. At the same time, we are
(Continued on next page)

The Very Spice . . .

Of what use is a tape recorder to a cannibal? In what occupation does a TR travel sideways? Up and down?

"I am made all things to all men," says the Bible. William Shakespeare puts it: "Nor custom stale her infinite variety." And Prime Minister Disraeli has his variation, "Variety is the mother of enjoyment." Oh, yes, agrees poet William Cooper, "Variety's the very spice of life."

What these illustrious gentlemen have said might very well fit something close to our hearts — tape recorders.

You never know where they'll turn up next and for what purpose.

A handful of items has just crossed our desk, telling of recorders going sideways . . . up and down . . . and being used by cannibals.

First, let's look sideways. A new phenomenon has entered our tourist and cultural world. It's taped tours. We've heard of taped museum talks here and there for a while now. The museum goer, for a quarter or so, rents a portable battery instrument containing a short pre-recorded tape, and as he strolls through the galleries and pauses before painting and statuary, he is told what he is looking at and why and how much he should appreciate it.

Now, taped city-wide tours have turned up in at least 2 centers. In New York recently, 2 girls, Eileen Hopkins, 27, and Joan Wrenshall, 24, stepped off a boat from Gibraltar and, for \$3, became the first customers of Automated Tours. They were handed an 11 ounce transistorized tape recorder. On its 250 feet, 6000 words had been transcribed. The girls pressed the button and they were off, on a guided tour without a guide — that is, a guide of flesh and blood. "Please turn to the right on 5th Avenue," said the recorder. The girls

did and continued for 3 miles, passed the public library, Shubert Alley, St. Patrick's Cathedral, The Waldorf Astoria, the United Nations . . .

When the recorder finished one description, it whistled to be turned off until the girls had arrived at the next site. The only place Eileen and Joan got hung up was at the Diamond Tower on West 47th Street, where they couldn't tear themselves away from the carats.

The taped tour in Williamsburg, Va., restored capital of Colonial America, is called Acoustiguide. This one attempts to be a time-machine as well.

The tourist, putting down his 50c, is taken by a 2½ pound playback-recorder, equipped with a small ear-phone, passed the points of interest. Along with the talk, he hears sound effects of America as it was in the 18th Century . . . the beat of the drums of the colonial guard, the salvo of their cannon in the square, the strains of an ancient organ at the old parish church, the song of revelers at the tavern.

Where next? Paris . . . Rome . . . London . . . and in all languages.

As for the up and down recorder story . . . Mrs. Harriet Koopman, who operates an elevator, has always wanted to be a song writer . . . unfortunately, she can neither read nor write music, but one day she got hold of a tape recorder. A couple of months ago, while piloting her vehicle one morning, she was struck by inspiration. "John Fitzgerald Kennedy, a man in history, he will always live in our hearts for we have his memories," she sang.

Today she has a copyright on the song and an attorney-manager (he heard her opus while riding the elevator.

As for the cannibal with the tape recorder — we'll just have to tell you about that in the next issue.

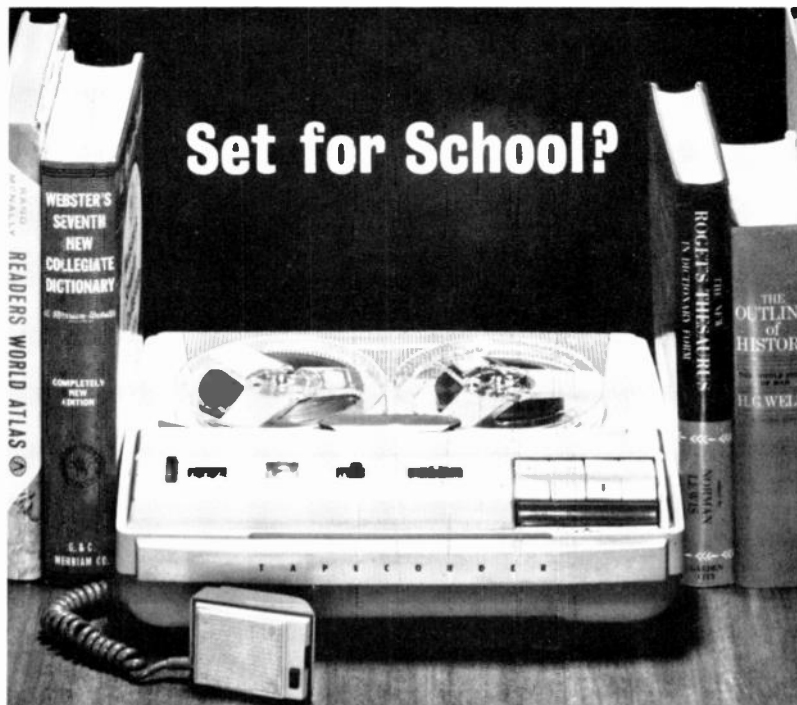
OPERATION SATURATION

On August 30th, in the Sunday home magazines of 12 metropolitan papers in 12 key cities, with a total circulation of 8 million readers, a Superscope national campaign went local. In the BOSTON GLOBE, CHICAGO TRIBUNE, CLEVELAND PLAIN DEALER, DENVER POST, DETROIT FREE PRESS, LOS ANGELES TIMES, NEW YORK TIMES, PHILADELPHIA INQUIRER, PORTLAND OREGONIAN, SAN FRANCISCO CHRONICLE, SEATTLE TIMES, and WASHINGTON POST, half-page ads on the "Set for School" theme were tied-into individual dealer ads, scattered throughout the magazines. This was the first national-local combination promotion essayed by the giant U.S. exclusive distributor of Sony tape recorders for a greater timely market saturation.

Surprisingly, the cost to the participating dealers was negligible. Superscope itself placed the half-page ads and absorbed 75% of the cost of the individual dealer ads. What's more, each participating dealer's 25% of the cost of his own ad came out of his accrued co-op funds.

So successfully is this national-local saturation promotion creating additional traffic and sales, that the company is now planning a series of such promotions. Superscope announced at the time SN & V was going to press. The first of these will hit the key-city papers in December with a Christmas gift theme.

"All dealers who want in," said Fred Tushinsky, Superscope's Director of Sales, "are urged to register with their reps now. And starting with '65, we'll hit the 7 major calendar buying events with equal force."

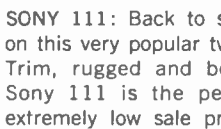


Send your favorite student to the head of his class: buy him a dictionary, a Thesaurus — and the most powerful word tool of all: a Sony tape recorder. Preserves important lectures, memorizes speeches or acting, learns languages and music. (Also the perfect way of 'talking' to the folks back home.)

Back to school sale of Sony Tape Recorders:



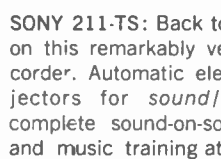
SONY 801-A: Back to school Sale saving of \$50* on this two speed battery operated Sony Portable. Solid state electronics, remote control on mike, 5" reels and many more exclusive Sony features.



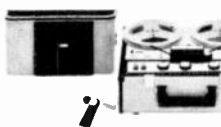
SONY 111: Back to school Sale saving of \$12* on this very popular two speed compact recorder. Trim, rugged and beautifully styled, the new Sony 111 is the perfect fun recorder at an extremely low sale price.



SONY 102: Back to school Sale saving of \$20* on this high fidelity, dual track Sony recorder. Full 7" reel capacity, VU meter, mike and line mixing, PA system use, and all the features you would expect from Sony.



SONY 211-TS: Back to school Sale saving of \$20* on this remarkably versatile Sony Photo-Sync recorder. Automatic electronic control of slide projectors for sound/slide presentations, and complete sound-on-sound facilities for language and music training at an amazingly low price.



SONY 200: Back to school Sale saving of \$40* on the famous Sony 200: a complete 4 track stereo tape system with lid-integrating speakers that separate up to 15' for full stereo effect. The perfect fraternity, sorority or home stereo tape system.

Where to buy: Look for your local Sony dealer's ad elsewhere in today's paper. *Less than Nationally advertised price

SONY®

SUPERSCOPE

The Tapeway to Stereo

(Continued)

guilt-ridden and need absolution. Most of all, we are impulsive. In short, we are the most God-awful messes.

Recognizing all this and playing on these weaknesses, the depth boys asserted, they could make us poor possessed devils buy, buy, buy. Or vote, vote, vote. Or even fight, fight, fight.

An elementary example of the use of M.R. was the case of Marlboro, originally a lady-like smoke, the world's only red-colored cigarette. But, the depth boys reasoned, men, afraid of being labeled effeminate, will not smoke a woman's cigarette, while women will smoke anything. So Marlboro was given a new "image," complete with rugged tatoo-handed men and sales shot up.

Dr. Ernest Dichter, probably the best known depth boy, concluded in a study for Chrysler that auto dealers should display convertibles in their windows. When the average man, essentially a Walter Mitty, sees a convertible, he envisions the topless freedom of far away places and forbidden fruits. A convertible is a mistress. This man usually ends up buying a practical 4-door sedan — a wife. But the convertible-mistress gets him into the showroom.

Actually, many of the discoveries of M.R. have been used, perhaps intuitively, since the beginning of advertising. Probably, the caveman used M.R. when he got another caveman to take over his worn-out pickax. Or wife.

Poised against M.R. is the grand old school of the U.S.P. — Unique Selling Proposition. It holds that people are reasonable, and even to a degree analytical. We buy a product only when we are convinced that it possesses some distinctive quality. If it doesn't, we don't buy it again. Proper advertising or selling, assert the U.S.Pers, should emphasis a U.S.P. And if the product lacks such a quality, it should be given one. The school maintains that if you say: *Look at my U.S.P.* convincingly, brother, you've got it made.

M.R. or U.S.P.? Which is the most effective? Are they mutually exclusive? And how do they effect the selling of tape recorders and other hi-fi merchandise?

I'd like to continue this discussion and I'd like your opinions. You are the fellows who ought to know better than anyone else. After all, you're on the firing lines.

IN MEMORIAM

RAYMOND V. PEPE

Along with the entire audio industry, we mourn the passing of Raymond V. Pepe. His achievements as President and, at the time of his death, Chairman of the Board of the Institute of High Fidelity added stature and dignity to our industry. Ray was also a personal friend.

We shall miss him.

SOMETHING TO brag about

JUST WHAT'S IN OUR HEADS ANYWAY?

by Irving Tushinsky

One of our competitors claims it is using a 3-micron playback head-gap — in its opinion, the optimum because it is so minute. If we're going to match minuteness, the new Sony playback head has a gap of only 2½ microns. How minute is that? Pull a hair out of your head. That hair is 45 times thicker than the Sony 2½ gap.

How important is gap size? This important — it has been conclusively established that in playback *it is the gap-width alone, irrespective of any electronic circuitry, that determines the upper limit of frequency response.* Simply put, the finer the gap, the higher the frequency.

Most consumer-type recorders use heads with 5 to 6 micron gaps, so you can see how much finer the Sony 2½ is. That's why Sony's frequency response is right there on the top. It's an effective point to make in talking to a customer: the narrower the gap, the wider the playback-range, and Sony's got a 2½.

On the recording side, however, the width of the gap is not the significant factor. What is important here is the sharpness of the gap-edges. That's why, even in their combination record/playback heads, Sony uses a minute head-gap, despite the fact that such a gap is much more difficult and costly to manufacture, with the sharpest edges yet machined.

The trouble with the best of heads is that they wear out. To give theirs the longest life, Sony now uses an extremely hard core-material, an outcome of painstaking experimentation in the Sony research lab. It is the hardest core-material being used in the industry today. Besides the longer life, the material pays off in assuring the intimate tape-&-head contact necessary (except during rewind and fast-forward) for the most realistic true-fidelity performance.

What's the best size head-gap? What's the best core material?

We don't have a swelled head, but just a hard and narrow one.

When customers want to know, tell 'em about Sony.



"500"



"464-SL"



"211-TS"



"801-A"



"600"



"777"



"111"



"102"



"263-D" / SRA-3



"200"

SONY TAPE RECORDERS
SELECTED BY THE
HOUSE OF GOOD TASTE



NEW YORK WORLD'S FAIR
1964 • 1965

Our monthly visit
with

Charlie

THE CREATIVE
SALESMAN



We were almost scared out of our wits when we entered Charlie's this month. A creature in a glistening black skin-tight suit was standing on a stool and thrusting its head into an aquarium.

Before we could sneak out, however, it turned around and pulled a glass mask off its face. Naturally, it was Charlie.

"Waa blub uh gwa gwa . . ."

"What? Oh, for God's sake, Charlie, take that snorkel out of your mouth."

We helped yank it out, loosening a tooth in the process. Charlie's mouth certainly seemed a good deal wider than it had the last time we had seen him.

"Now, Charlie, you've got to admit it's foolish, skin diving in a goldfish bowl."

"Listen," he said earnestly, "I'm in training to tap the biggest untapped market for recorders yet — the underwater market."

"Underwater? But who's going to buy tape recorders underwater?"

"The million skin divers in this country! They lug cameras down with 'em, and get fantastic pictures. But how about preserving the music of the deeps, 15 fathoms under? And the conversation of fishes? We now know that dolphins can communicate, but how about smelt? How about the eel's squeal? And the dogfish's bark? Does a clam really clam up?"

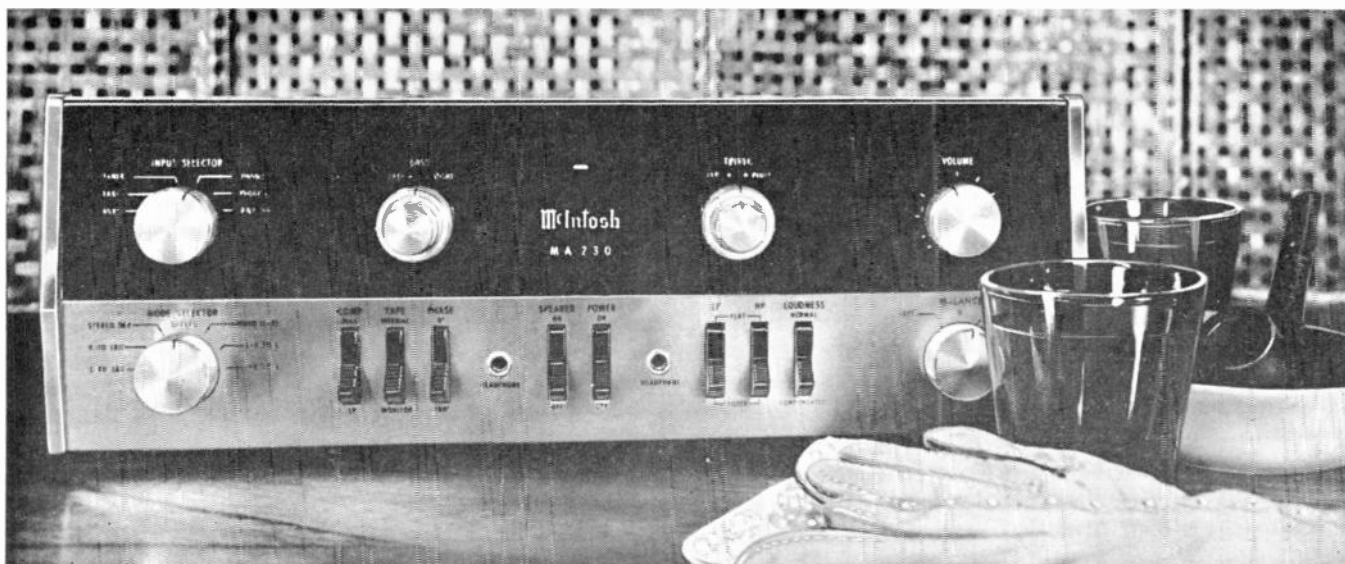
. . . Why, with high — or maybe, in this case, *deep* fidelity, you know something? I'll sell 100,000 recorders and at least 6 times that number of reels of Sony tape. And then there's the world market . . ."

"Charlie . . ."

But Charlie was busy loading himself down with snorkel, ear plugs, glass mask, a pair of flippers, a Sony 801, and a bouquet of flowers.

"Hey, Charlie, where are you off to? A hike with a pike? And what are the flowers for?"

"That," said Charlie, "is in case I meet a mermaid. I understand they sing beautiful."



Get ready ...THE EXCITEMENT IS ABOUT TO BEGIN
Now she says . . . "Turn it up, please"

She gets pleasure from the sound of the McIntosh MA 230 control amplifier. She wants to hear all the full rich sound. She even thinks the loudspeakers sound bigger. Her bridge club wants to listen. Sometimes you wish she would let you listen to what you want to hear.

The McIntosh MA 230 control amplifier brings exciting performance to your present stereo system. The amplifier is the heart of your music system. All sound sources must go in and come out of the amplifier. Why deny her full enjoyment from your stereo system with an inadequate amplifier? Let her hear stereo through an MA 230. She will exclaim at the exciting difference she hears when using the McIntosh MA 230.

SPEAKERS SOUND BIGGER

Your speakers will sound bigger. Hum, noise and distortion from inadequate amplifiers color the musical content of the program material. Your speakers reproduce all of this. Distortion makes the music harsh and hard to listen to for long periods of time. Hum robs your loudspeakers of bass response. The McIntosh MA 230 has the lowest hum and noise of any control amplifier. Total hum and noise is 1/1,000,000 of the total power output. The MA 230 has less distortion than any other control amplifier with both channels operating. Distortion at a full thirty watts per channel is less than 1/2 of 1% from 20 cycles to 20,000 cycles per second. IHF music power rating is 44 watts per channel. *Power to spare!* No other control amplifier gives this kind of performance.

Your records will expand and have a transparent quality. The solid state preamplifier of the MA 230 has the best dynamic range of any control amplifier. Dynamic range makes music come alive. From the

softest to the loudest passage the McIntosh MA 230 delivers all the program material. Each note, each passage comes alive.

'AMERICAN RECORD GUIDE' REPORTS ON THE MA 230

"McIntosh is an exception. It is one of the few firms in the industry that has a reputation for consistent understatement. Its eminence in the amplifier-preamplifier-tuner field is built on a secure foundation of performance—and on specifications written in the engineering, not the advertising, department."

"I did a lot of listening with this unit. It is powerful, and it is honest, in its presentation of music. I am bound to say that the MA 230 stands with the very best units I know of any design. I invested considerable time and effort in trying to disprove McIntosh advertised specs. I could not do so. I do not know another integrated amplifier with such superb power response."

FREE THREE YEAR FACTORY SERVICE

You get a full three year factory service contract on all parts and labor. Only tubes, fuses, and transportation are excepted.

EASY TO OWN

Now most dealers offer the McIntosh MA 230 for only \$35.00 down and as little as \$12.00 per month. Your old amplifier can more than likely cover the down payment.

McIntosh
LABORATORY INC.

16 Chambers St., Binghamton, N. Y.

McINTOSH LABORATORY INC.
 16 Chambers St., Binghamton, N. Y.

Send today for the full American Record Guide test report, plus the full story on the McIntosh MA 230.

Name

Street

City Zone State

**ONLY JENSEN'S
NEW DL-220
GIVES YOU
ALL THESE
EXTRA
VALUE
FEATURES!**

1. Exclusive low-distortion FLEXAIR® suspension.
2. Super-low 25-cycle resonance for rock-bottom bass.
3. Circular horn wide-angle compression tweeter.
4. Fully adjustable HF-balance control on 30" cable.
5. Precision SYNTAX-6® magnetic system.
6. Die-cast metal housing for permanent alignment.
7. Binding post terminals for quick, easy connections.
8. Stable spider suspension for positive voice-coil centering.

Model DL-220

3-ELEMENT 12" FLEXAIR® COAXIAL

Outstanding performance at phenomenally low cost! Genuine compression HF unit and heavy-duty 12-inch woofer with mid-range radiator add up to smooth, full response. Power capacity, 20 watts. Frequency range, 25-16,000 cps. Resonance, 25 cps. HF balance control on 30" extension cable.

\$34.75

NEW FROM JENSEN

DELTA^{T.M.}
S E R I E S

YOUR BEST SPEAKER VALUE

Model DL-120

Dual-Cone 12" FLEXAIR® 12-inch, high-performance two-way loudspeaker similar to DL-220 but without coaxial HF unit. Frequency Range, 40-15,000 cycles; 20 watts.

\$21.50

Model DL-80

Dual-Cone 8" FLEXAIR® A quality 8-inch high-fidelity unit for cost minded enthusiasts who demand Jensen quality. 50-15,000 cps; 20 watts.

\$15.25



Write for free brochure MY

JENSEN MANUFACTURING COMPANY / DIVISION OF THE MUTER COMPANY / 6601 SOUTH LARAMIE AVENUE, CHICAGO 38, ILLINOIS
Canada: Radio Speakers of Canada, Ltd., Toronto • Argentina: Ucoa Radio, S.A., Buenos Aires • Mexico: Fapartel, S.A., Naucalpan, Mex.

A show is born in San Francisco

At the time of the Los Angeles show last spring, the prospects for a show in San Francisco this fall were pretty poor. Six months later, we're all headed for the S-F Hilton. Here are some of the ingredients in the success.

BAY AREA DEALERS wanted an audio show in San Francisco—and they wanted it at the start of the fall selling season.

Using determination, perseverance and promises of support, they are getting it. The Northern California Stereo High Fidelity Music Show will take place, under IHF sponsorship, Sept. 10-13 at the new San Francisco Hilton Hotel.

A steering committee, consisting of four local dealers and four reps, has been working in close cooperation with the IHF office in preparing for the event. Dealers on the committee are Fred Cohn, Mateo Hi-Fi, San Mateo; Fred Eber, Eber Electronics, San Francisco; Walter Hotzner, Allegro Hi-Fi, San Francisco, and Miller MacDaniel, MacDaniel Hi-Fi, Melo Park.

The rep members are Dick Evans, Koessler Sales; Ben Farrow, Farrow & Dobbs; Charlie Meyer, Meyer, Ross & Flemming, and Bob Vermiliya, David H. Ross Co.

There had not been a San Francisco show under IHF auspices for a number of years and no show at all this year. The annual Los Angeles show, usually held in the spring, does

bring some business to Northern California, but dealers feel it's too little and too late.

TRADE NEWS asked Walter Hotzner in an exclusive interview how the upcoming show came about and what dealers are doing to insure its success.

"It all started," he said, "at last spring's LA show. Four dealers—Cohn, MacDaniel, Stan Finberg of House of Hi-Fi in San Jose, and myself—and two reps, Evans and Farrow, went down to LA at our own expense. We stayed on two extra days so that we could meet with the Institute's directors.

"We pointed out that the Bay Area is considered the third largest audio market in the U. S., yet we're treated as if we were the 11th market. We told them we wanted a show in the fall, not in the spring when the products are no longer new and when people are preoccupied with income taxes and other things. After all, our major business is in the fall."

The group made their point so forcefully that the directors decided to explore the matter further. Some of them, including board chairman Ray Pepe, came to San Francisco to

meet with dealers. "The largest group of dealers ever assembled here turned out," Walter said.

"Dealers are underwriting the show," he continued, "by purchasing quantity amounts of \$1.50 admission tickets for 99 cents each. What we do with the tickets is our business—we can give them away, sell them at cost, or at any price up to the \$1.50 face value."

He estimated that some 5,000 tickets, and maybe more, will be distributed this way. Of course, there will be sales at the gate, too.

Working together informally as the Northern California Component Dealers, they have invited all 88 IHF-approved dealers in their trading area to join in the show promotion.

"We have not put any pressure on dealers to come in," Hotzner declared. "We sent a mimeographed letter to each of the 88, but that's all. If a dealer refuses to come in, it's his loss, not ours. But I want to make clear that in no way did we try to leave any dealer out. We circulated all bona-fide dealers, including the discount houses.

"We're going to have a large, illuminated display map. It will cover the entire Northern California market, from San Luis Obispo in the south, west to Fresno plus Reno and one or two other towns in Nevada, and north to the Oregon border. This is being paid for by the dealers, with each participant contributing \$15 in return for which his store will be put on the map in lights. The map will remain the property of the dealers collectively, and will be stored in a crate for use at future shows and other events.

"The map will be put up at the show entrance, along with a supply of cards for visitors to fill out. A visitor, (Continued on page 71)

S. F. SHOW plans are discussed by dealer Walter Hotzner, left, and rep Bud Moulthrop. Walter predicts show will usher in a tremendous fall season for Northern California dealers.



EDITORIALS

HOORAY FOR THE S.F. DEALERS

THEY'VE DONE IT! The dealers and reps of San Francisco have stood up and said their piece and got what they set out to get—a show in San Francisco this fall. And one with IIF sponsorship.

The story on page 25 gives the background, and we aren't going to rehash it here. But that story proves what a group of dealers can accomplish when they decide to work together until it is accomplished.

It's not easy, in a field as competitive as hi-fi, to get people to work together this way. A lot of credit for the successful outcome must go to reps like Bud Moulthrop and Frank Koessler; for without reps helping to reach for a solution, problems like this can boil down into a duel between dealers and manufacturers.

But you've got to have one thing before you can even think of starting: something worth working for. Without it, nobody is willing to help. Without it, you're not going to be able to convince anyone you're right.

In SF, they had something worth working for; they worked worked and won. More power to them.

THE NEW UTILITY

IT'S INTRIGUING, this proposition of Ed Altschuler's (see page 29), that whether we like it or not, we're going to have to start thinking in terms of complete electronic utilities systems for homes and business buildings.

And many of us are sure *not* to like it, at first. You've knocked yourself out building up your business in one way, and then somebody comes along and tells you you had better do it another way. It's *your* business, isn't it?

Well, yes and no. If an idea is taking hold of a market, that's everybody's business. Ignoring it isn't going to make it go away. The man who allows for that idea in his own business is one up on the man who doesn't.

We talk about the corner drugstore as though everyone knows exactly what they sell there, because all corner drugstores are just alike. But some have soda fountains, some sell appliances or reading matter. Some *don't* sell cigarettes. But that doesn't matter: you can find cigarettes lots of places beside the corner drugstore. And appliances and reading matter and soda fountains. And drugs.

You can find hi-fi other places beside a hi-fi outlet; and you can find lots of other goods in lots of hi-fi outlets. The elements are everywhere. Each man's way of combining them is his own. When a dealer considers what opportunities there are for him in promoting the "electronic utilities," his answer is going to be a little different from that of any other dealer.

So what's in it for you?

KILLING THE SALE

"WHAT'S THE MATTER with dealers," a recent letter complained. "Last week I went into a store to buy a stereo tuner. I had cash in my wallet and I was in a buying mood. In five minutes I was out of the store, disgusted. I didn't buy anything and I'll never go back into that store again. And I'll tell my friends never to go in."

The letter went on to explain the situation in detail. Our disgusted correspondent, after reading the ads and getting advice from well-informed friends, knew exactly what he wanted to buy. Or so he thought. The store's salesman, it seems, had other ideas. Our friend wanted to buy the Beekman tuner; the salesman wanted to sell him the Hastings (the names have been changed to protect the innocent).

To begin with, it was obvious that the salesman didn't like my preference," the letter went on. He didn't have to say anything; you could tell by the look on his face. Then he started hitting me with a lot of specifications I don't understand—sensitivity, capture ratio, db's up and down. I told him I didn't understand these things and he said 'you don't have to—just take my advice.'"

"I ask you. What kind of a way is that to do business?"

It's a good question. But to answer it, we're going to have to read between the lines.

Several explanations suggest themselves for the salesman's behavior in the case cited here. All of us harbor certain prejudices for different reasons. We may incline toward a certain product because we like the rep who sells it. The discount may be longer. It may carry a spiff. We may like the "image" of the company. Our own experience may tell us that the Hastings is a better buy than the Beekman and we want to do the customer a favor. Maybe Mr. Hastings called us by our first name at a hi-fi show last year.

From a purely practical point-of-view, the reason for the prejudice is not important. Let's face it; the salesman killed the sale. And you're not in business to pander to anyone's prejudices; you're in business to do so many turns a year. Working from that premise, the salesman was wrong to tout the prospect off the tuner he wanted—even if he intended doing the customer a favor!

The most disturbing factor about the disgusted prospect is this: he wasn't being sold. Judging from the tone of the letter, the salesman's manner so antagonized him that the sale was lost almost before it began. By the time the prospect left the store, he was furious. That couldn't have happened with a good salesman no matter what his intentions or prejudices were.

Even a beginning student of logic will understand that you cannot argue from a particular instance to a general case. Sadly, though, we're forced to concede that we have heard of too many arrogant audio salesman to think that the case of the letter is an isolated one. Too bad.

Oxbow shows product mix

Furniture is easy to find here, even though about half of the Doyen business is in components.

"Don't frighten business away," is his warning.

GO EAST, young man!

That's what Don Doyen of Oxbow Electronics has done in Whittier, Calif.

Before exploring his store, which boasts a mere 4700 sq. ft. in the customer complex and 400 sq. ft. of service area, you should know a bit about his area.

Whittier is an old and respected college town to the east of Los Angeles. It has a Quaker background, oodles of churches and culture, and an amount of fame as Richard Nixon's home town.

It also has experienced the post-war boom—a real explosion in this case because a few years ago the city annexed unincorporated territory to the east and south. Population thus jumped overnight to near 75,000. Whittier Blvd. now combines a restaurant-row selection of eating places, huge shopping centers built around prestige branches of L.A. stores—and scads of specialty shops catering to suburbanites. The business strip extends east clear to the Orange County line.

"But we don't present ourselves to the public as a *specialty house*, even though we are," Doyen told *TRADE NEWS*, while tracing his operation's growth since 1958. "We don't frighten potential audio enthusiasts away by just displaying tuners and amplifiers, even though 50% of our business is in components."

The home entertainment center idea has grown gracefully at Oxbow, which started originally with TV sales and service. Doyen added components little by little because of interest and demand. *They* are the newcomers and represent a healthy half of his business, as noted.

"But TV buyers become components buyers—and components buyers become TV buyers," Doyen pointed out. "Many a prospect who comes into our store to look at one field eventually buys in both. Many of our customers come on the basis of referral by friends, too—and this also cuts across the so-called audiophile vs. TV-viewer line-up."

No wonder, then, that Doyen doesn't hesitate to put his rows of

TVs, packaged music-makers, traditional consoles and hundreds of radios smack in the path of those entering his doors. Remember, too, that in a discussion of pricing and industry problems *TRADE NEWS*, May, 1964), Audio Specialist Doyen warned that *color TV* is the threat of the components business in competition for the buyer's dollar. He noted that he knew because he sold

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AT OXBOW, Don Doyen demonstrates use of the Garrard for Terry Dixon who, as manager of Doyen's new La Mirada store (where this picture was taken), already knows how.

Hi-Fi Haven champs components

Whittier's reluctant "specialist" sticks to gear he feels is finest, offsets female frights with a lady helping out behind the hi-fi counter.

QUALITY—and a woman's subtle touch.

That describes Hi-Fi Haven at 422 So. Greenleaf Ave. in Whittier, California. We'll give you some of Owner Bill Tandberg's interesting philosophy before explaining the woman's angle.

As a preface: Hi-Fi Haven is in the traditional older business section of Whittier. Tandberg's degree in electronics engineering is from the University of California at Berkeley, with graduate study at Harvard and M.I.T.

"I feel I am championing the cause of the true components industry," Tandberg said at one point in our interview.

Incidentally, he squirms at use of the phrase audio *specialist*—feeling that, like "high fidelity," it has been warped from its original concept.

"I've seen too many clerks wearing a bow tie and a badge that said 'specialist,' even if they were fresh out of a discount TV section," he said. "We operate as in the old school. We actually evaluate equipment before handling it. We don't want to get ourselves or our customers involved in inferior equipment."

In this connection, he demurred at even mentioning what he considered

his principal lines, and he handles the tops. "What may be the best this year may have bugs in it next year insofar as a particular unit is concerned," he explained.

"We'd rather miss a sale than have one and end up with a dissatisfied customer," he went on. "We've seen too many people come in with something they bought through the mail or at a discount house only to find it was incompatible with what they were trying to put together."

Husky young Tandberg pointed out, sympathetically, that investment in an audio components system is a major purchase in most homes—often the achievement of a dream. Hi-Fi Haven is geared to make the dreams come true instead of become nightmares with sound effects.

He started the store in 1955 as a result of his electronics background—and his musical interests. He is an accomplished pianist and accordionist. He also plays a German recorder—the flute-type instrument, not the tape variety.

Whittier, as indicated elsewhere on this page, is traditionally a college town of Quaker and citrus-growing

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How to introduce a product

**Eico shows their new unit in an unlikely locale—
a Chinese junk, moored in a Manhattan marina. But,
says theory, it will make the product remembered.**

A CHINESE JUNK is not the sort of thing New Yorkers are used to seeing in the Hudson River. All the more reason to use it as the site of a press party to introduce a new product: the Eico transistorized receiver kit. Guests crowded the deck and the cabin, where the receiver was displayed. From this vantage point, the Manhattan skyline seems far away, indeed.

THERE ARE LOTS of ways you can introduce a new product. You can hire Carnegie Hall, the way Empire did for the Grenadier speakers. You can ask a famous artist (in this case Eugene List) to demonstrate it, the way Ampex did with the new line of tape recorders. You can take large ads in a respected trade journal like *TRADE NEWS* (plenty of examples *there*). You can just up and ship the first production models off to the dealers and open a bottle of champagne, the way Saul Marantz did for the Model 10. Or you can flood the press with paper: descriptions, illustrations, *specs*, cheesecake, and plugs.

When we received an invitation from Eico to be their guest aboard the Chinese junk, *Mon Lei* in the Hudson River (North River to you shipping buffs), we couldn't help being intrigued.

To get to the 79th Street marina, you have to go into a park, past a fountain, and down a long flight of steps—a far cry from the usual Manhattan address. And there it was, by

(Continued on page 85)





THIS IS THE HOUSE that Alshuler helped to build: La Cienega Electronic Center. Applying his idea that electronics is a utility, the builders installed Jerrold's J-Jack system for plugin connections to data processing closed-circuit TV, dictation and recording facilities, remote lobby surveillance and background hi-fi. A tenant can select from among equipment inventories expected to run over \$1 million, and lease what he wants. Alshuler suggests carrying the principle on to homes, where garage doors, intercom, and stereo can be part of a master system.

A new utility is heralded

Altshuler, Ascon Management pres., tells the industry his views on the systems concept and its application to the broad range of consumer electronic products.

ED ALTSHULER is more than ever a man with a purpose these days. To let the industry know what that purpose is, he has traveled across the country from Ascon Management Corp. headquarters in Los Angeles to Chicago, New York and Washington, bending ears and, he hopes, opening eyes.

What's it all about? He explained it last month to a meeting in New

York of as many different points of view as Mr. Altshuler could gather together. Dave Susser represented the AEM, along with Henry Russell (who is also v-p of UTC) and Arthur Rabb (also of United Catalog). Manufacturers were otherwise represented by Howard Salzman, president of Alpha Wire. Representing finance was Robert Higdon, who specializes in electronics for the Chase-Manhattan Bank. Henry B. Harris, secretary-treasurer of Milgray represented industrial distributing; while Ed Askin of Rite Electronics is a dealer in several areas of consumer electronics. Win Roll of Fuller & Smith & Ross specializes in broad promotion campaigns. In addition to *TRADE NEWS*, representatives were present from three trade journals.

Altshuler began by pointing to the promotion program that has, over the years, achieved marked success in convincing homeowners that they should think of putting in a new kitchen, rather than simply replacing a stove or a refrigerator. This is the kind of approach, he said, that we need in the electronics industry: an approach that seeks to sell a utility system rather than an individual piece of equipment.

He gave as an example of how this might work, a project with which he has been associated in Los Angeles. Jupiter Construction Co. was putting up an office building on La Cienega Blvd. At Altshuler's suggestion, they added to the services already designed into it the wiring and receptacles required for such electronic equipment as centralized stenographic services, available to any part of the building by plugin connection. In figuring the total cost of such added utilities, amortized over a reasonably short period, it was found that the higher rent scale necessary was more than offset by the attractiveness of the additional services. Hence, the La Cienega Electronics Center, as the building is now called.

And how does this apply to hi-fi? Very simply, says Altshuler. Home
(Continued on page 34)

Hi-Fi Haven from 27

background. Sure enough, Tandberg not only has done major installations at Whittier College, but counseled the head of the school's music department in assembling her home system of components.

He also has sold Whittier City Council numerous tape recorders. While he does some "ordinary" commercial sound installations, in many of his civic and college setups, he utilizes fine components such as McIntosh.

Although Hi-Fi Haven is like home to the hard-core of well-heeled Whittier oldtimers and professional people interested in good sound, the clientele actually is spread all over Southern California.

And he recently shipped \$1200 worth of James B. Lansing speakers to a Japanese merchant in Tokyo—for his home sound system. The Japanese was referred to Tandberg when he wrote to a fellow Rotarian in Whittier asking where to get the best advice and reliability.

(How about that, incidentally? Wealthy Japanese paying the extra freight to buy American made components!)

Tandberg estimates 80% of his sales over \$100 come via referrals, so he took the Japan shipment in stride. He has virtually no walk-in trade. However, his tried-and-true customers walk in all the time to shoot the breeze about components and music—and to try to out-sweet each other in bringing rolls and goodies to eat at the coffee pot always on the fire in a rear room.

La femme?

Dark-eyed Rose Simonian has been Tandberg's assistant for the past four years. And remember our 1962 story, "Donna, the Beautiful Rep"? Donna, a former Mrs. Tandberg, wowed everybody at the 1962 High Fidelity Music Show in Los Angeles. On the basis of her familiarity with components in working at Hi-Fi Haven she had gone on to become the best looking rep the industry ever had.

Rose Simonian carries on in the important facet of putting women customers at their ease—especially when hubby is the sound enthusiast and wifey is afraid of the nuts and bolts she associates with "hi-fi." Rose knows her components, although she and Bill now laugh about how she cried a couple years ago when he ordered her to assemble an amplifier from a kit.

"When she finished it, I couldn't get her to stop talking about it," Bill grinned. "She gave it the woman's touch, too. She braided some of the wiring—real fancy!"

Hi-Fi Haven is neat, but not fancy, in physical arrangement. It started with one straight-away small-store space, now housing components, accessories, tape recorders and some furniture.

Growing business prompted acquisition of adjoining store space to the south. It is now the demo room, principally, with about 50 speakers and combinations along one wall and a variety of better cabinetry at the front.

And like the man said about being sort of a pursuit about componentry: Not a TV in the place!



Dirk Roos sets up for a clinic with O'Brien and Corderman

Mac and the big soft sell

The McIntosh Clinics, now an industry institution, weave the spell of the pitchman, with no sign of a pitch. The record traffic tells its own story.

"DO YOU SEE the word McIntosh anywhere?" he asked.

We had to admit that it was pretty hard to find, except mixed in among the other components on Harvey Radio's shelves. Dave O'Brien smiled and waved his hand in the direction of his improvised shop.

"No fancy banners or signs. Just a lot of test equipment. Building retail traffic is one thing, but getting the customers to fix his attention on the gear, we feel, makes this program

unique."

He was taken away almost immediately by a customer (if that's the right word) with an amplifier he had wired himself. The customer tried hard not to look like a father taking his son to the doctor for the first time. Dave found trouble.

"One of your output leads seems to be loose. May I?" he asked, holding up a soldering iron.

The customer looked on as though he were watching Dr. Jenner him-

self, administer a vaccination. And the conversation continued in tones appropriate to the consulting-room. Customers stopped to watch, like interns in an operating theatre.

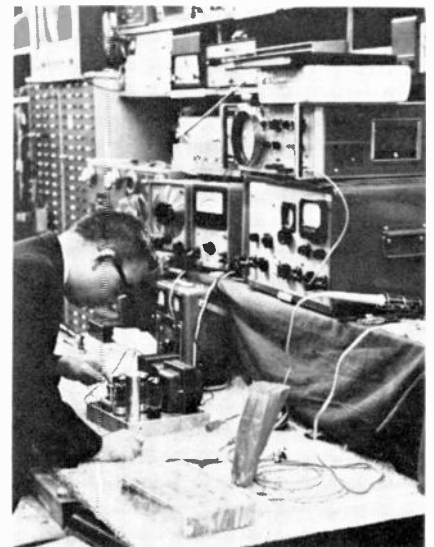
If we're getting carried away with Ben Casey comparisons, a glance at the accompanying photograph (below) will prove that customers get carried away, too. Whether or not they understand what they're seeing, they stop to admire the equipment, squint at the scope, and gape at all the buttons and knobs and dials.

But it's not all just a show; the clinics offer a unique service to the customers. As McIntosh ad manager Dirk Roos puts it: "This clinic is a long-range thing for McIntosh. By offering a real service to owners of amplifiers of any make, we build good will for Mac and for the store."

On a previous trip to Audio Exchange's Jamaica store, our reporter heard high compliments paid by the Mac crew to amplifiers like Quad, Scott, Fisher and Eico. They make it quite clear that they are there for a service, not for a pitch.

The clinic is, of course, free to the customers. When a dealer runs an ad for almost anything free, he can

(Continued on opposite page)



THE CROWD DRAWS in as Dave O'Brien tries test leads on a customer's amplifier. All eyes focus on the scope and its mesmerizing pattern, as O'Brien adjusts it. Only Corderman is otherwise occupied.





Jim Arrington (right) shows off a new Magnecord model.

What is 'professional' gear?

Here's a word that has been kicked around until it's hard to recognize. We asked the man from Magnecord to help us bring back some meaning to it.

"WHAT IS *professional* equipment?"

Jim Arrington, sales manager for the Magnecord division of Midwest Instruments considers his products professional equipment, so we asked him. At first, he looked nonplussed by a question that, on the surface, answers itself.

"I suppose it's equipment that is used by professionals."

"Yes," we prodded, "but professional *what*? Would you say that a lan-

guage lab should have 'professional' equipment? If so, should it be manned by a professional sound man whenever it is used?"

He readily agreed that we often use the word "professional" indiscriminately when we want to get across the idea that a particular unit is good quality. No manufacturer of first-quality tape equipment can be very happy, whether he is aiming for the professional market or not, when he sees

a recorder at, say, \$200 or less put forward as "professional."

"We consider our Model 1024 appropriate for high quality hi-fi," Arrington said, "but that doesn't mean that it can't also meet the requirements of other markets, such as education." He went on to discuss the fact that a single model may be varied by the exercise of options in speeds, heads, or input impedances, making it appropriate for altogether different use than might be expected for another variation of that model. That gave him a chance to demonstrate their plugin solid state electronics while he talked, but he quickly returned to the subject.

"I could name several things that I would consider characteristic of professional equipment," he said. "For instance, I would expect a three-motor transport. I might think in terms of the sort of equipment with which it would be compatible: what microphone impedance, for example." But he quickly admitted that any "professional" specifications can be combined with others to produce a product that could not (or should not) be labelled "professional."

"Maintenance characteristics are also important," he added. "Any piece of equipment that deserves to be called professional should continue to function properly in daily use with only routine maintenance." Still selling, he used Magnecord's top plate construction to demonstrate how a properly designed machine can take daily buffetings without damage.

"Maybe the word 'daily' is even more to the point," we suggested. "After all, that's the difference between the pro and even the most accomplished amateur, in any field: the pro works in the field every day."

Jim Arrington thought a moment. "Well, I guess it will do until a better definition comes along," he said.

Soft sell from 30

expect to experience high traffic. But the special sort of excitement that the clinics generate is in a class by itself.

Last spring, High Fidelity Unlimited, in Portland, Ore., had a visit from Paul Klipsch at the same time that Dirk Roos was there with the clinic. The extra barrel added to the promotional impact of the event, but the clinic is not really in the "famous personality visit" category. It's maybe more of a super-special service event.

But call it what you will, dealer demand has proved that it is a success. Dirk Roos and Dave O'Brien are criss-

crossing the country almost constantly to fill the demand.

After these words were written, the McIntosh group found themselves doing service at Harvey Radio well beyond the normal call of duty. On Thursday, August 13th, George Zarrin of Harvey's staff died in the store during the day.

The shock of George Zarrin's death (particularly coming so soon after Harvey Samson's) precluded keeping the store open. Advertising had, however, already appeared, inviting New Yorkers to bring in their equipment for testing.

The McIntosh group (which consisted of Dirk Roos, Dave O'Brien

and rep Harry Miller) offered to keep the store open for purposes of letting customers get the gear check that the ads had offered.

Many customers turned up, not knowing about George Zarrin, and had to be turned away. No sales took place, of course—just the clinic. The need for repeated explanations and the circumstances under which the clinic took place made it the sort of job most of us would avoid.

Perhaps that very air of dependability and trustworthiness is what has made the clinics such a success. How can an awed customer help wanting better gear—including, eventually, a Mac?



CHARLES CARTER and a star from his show—a tape recorder. It wasn't always like this: components once ruled the roost.

Tape takes 1st place in San Diego

In the nation's southwest corner, a components business finds specialization in tape recorders to be a steadily growing sales proposition.

YOU WON'T FIND a single camera for sale in Charles Carter's store in San Diego, California!

This may seem strange, since he features tape recorders far above audio components at Recording Center, 3941 5th Ave. But he's very much a *specialist*, offering about 40 different recorders. We noticed 35 lining his main display room—with only a couple of JBL "Trimline" 54 speakers in sight.

"I try to pick recorders offering customers the most for their money

in performance and dependability," said Carter, who got into the sound field via office equipment, then dictating machines and magnetic wire.

"I ask the customer to tell us what he wants to do with his recorder—and his price range. Usually we can come up with two, three or four for him to compare."

Before we go on with some of Carter's connection with scientific research, and how he beats the discount houses by giving service, let's make it clear that he *does* have a sound room and a selection of quality components.

As we entered the store, in fact, he was telling a customer who had just mulled over a variety of components: "We've been here 15 years and we're going to be here another 15 years." He was urging the customer to make up his own mind and come back. He's not afraid to let a customer walk out of the store.

The unusual twist in Carter's case is that he started with more components that he now has—or, at least, the tape recorders have grown relatively, so that his 2200-sq. ft. (plus) place is one of those rare birds: A store famed in its area for recorders for themselves, not as an adjunct to components or cameras and film.

From a selling standpoint, we've already mentioned service. As a specialty store, Carter also is able to offer a 10-day exchange (not refund). And he offers both store and factory warranty—backed up with a *loaner*, even, or an exchange on merchandise recently purchased.

He considers his audio component business now as complementary to his tape business, as indicated. But he has another ace up his sleeve. In an honest way, that is.

Under the same roof for the past 10 years, John Mullen's Audio Recorders has functioned in a separate area and as a separate company. Professionals and amateurs, announcers and singers, come in to have records cut—and are exposed to the area of tape recorders as they pass through to the studio. Many decide they want their own recorders. It works both

(Continued on page 122)

Even dudes buy at Rancho hi-fi

We covered Anaheim in January. Now, here's the scoop on Azusa. And next, if all goes well, our western editor promises to look in on Cucamonga!

ROUTE 66!

It's western terminus, in addition to Los Angeles, is the suburban city of Pasadena—now a hotbed of competing audio components stores. (See *TRADE NEWS*, July 1964.)

Going east from Pasadena to San Bernardino nearly 60 miles away, however, you'll find scads of towns along U.S. 66—but just ONE audio components specialist's store on the famed thoroughfare.

But it's a dandy!

It's Hi-Fi Rancho, situated on the eastern edge of Azusa and kept shipshape by owner Jack E. Turley. "Shipshape" is more than a word or phrase in this case. Jack Turley is a retired Navy officer, who already had a built-in feeling for neatness and cleanliness before spending years in the service. And his beautiful store reflects his attitude.

That customers appreciate the surroundings of Hi-Fi Rancho is proven by the store's growth from an \$8,000 gross when it started six years ago to an expected \$200,000 this year—based on 1963's \$179,000.

(We're not going to point a finger at some of our best friends, but we've

seen some awfully junky clutterings in what *could* be attractive stores. The dealers usually bring the matter up themselves, with an amiable acknowledgement that they don't reckon things will get any better.)

Technically, Turley's pride and joy is Rancho Sound Co. It sits in attractive Ranch Center—which originally was "Rancho"—and features smart specialty shops as against the catchall most huge shopping centers offer. Citrus College is close by.

"Actually we have more college customers from the Claremont Colleges to the east near the San Bernardino County line," said Turley. "But mostly our clientele is just a cross-section of suburbia at its best."

The former Navy man admits he *could* get along on his retirement stipend if he had to, but found he had too much energy to permit himself to vegetate. His Navy duty had included close contact with electronics developments. He loves music. And he found himself helping a friend, Bob Mitchell in his El Rancho music and components store in Arcadia after his retirement.

(Continued on page 126)

THE 6201
THE 312
THE SPHERICON
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Ask any audiophile about the 6201, 312 and other professional University speakers. If he owns one, his eyes will light up, his praise will sound like poetry. Now, after extensive testing and experimentation with new types of cone materials, magnets, voice coils, even to the most minute part, University introduces Mustang—the first and *only* line of low-cost die-cast speakers so uncompromised in construction, they are unconditionally guaranteed for five years!

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Transistors hurting sales?

Sid Olson of the Midwest chain wonders out loud what the effects of the solid stat boom may be in the next few months; and he takes some guesses.

"TRANSISTORIZATION is creating confusion, but no business!"

The speaker was Sid Olson of Olson Electronics, one of the Midwest's leading audio components chains. He was referring to the solid state receivers, amplifiers and tuners that are coming on the market in ever increasing numbers.

"People look at and listen to the transistorized components, but they won't buy," Sid told *TRADE NEWS*. "The reason is easy to understand. Solid state equipment that is available at moderate prices is not equal to tube components in quality. More sophisticated transistorized equipment is too expensive for what you get.

"I'm afraid transistorization will have a negative effect this fall on the overall component business. People will hold back from buying tube



SID OLSON has often paused to give us his comments. Here are his most recent.

equipment, and they'll be afraid to buy transistorized units. It's putting the component business back two or three years.

"We've been interested to see what everybody's doing with transistorization, so we could add it to our private label. But at present I wouldn't touch private label transistorization with a 10-foot pole."

Noting that the giants of the console radio-phono industry are making a bid for component business with so-called modular units, he revealed that Olson Electronics tested one transistorized receiver brought out this year by a big console manufacturer.

"We ran it through our lab with high-grade Hewlett-Packard test equipment. We tested everything. Rated by the manufacturer at 30 watts it tested out with 5% distortion at 3½ watts. At 5 watts, distortion rose to

28%. It has only a 3-watt output transformer. And the tuner section tunes so broad, we actually got three stations at one time. At \$229.95 list, it's badly overpriced."

Sid admitted that he didn't have the answer to the transistorization problem. "You can't hold back the clock," he said. "Some tried to do this in the early days of the stereo phono cartridge, but it didn't work. One of these days transistorization will break through—and it will be good. In the meantime, somebody gets hurt. It's got us all a little bit on edge."

Oxbow

from 27

400 color sets last year.

Actually, the customer pulling up in front of the Oxbow store sees the whole interior through huge look-in windows. And that means he can see rows of tuners and amplifiers over on one side (if he knows them when he sees them).

The over-all effect of the huge single-room store is paradoxical. It should look cluttered, but it doesn't. Basically, we decided, it was because of the rich wall-to-wall carpeting and a ceiling of just the right height, with interesting, unobtrusive lighting. (The same array on plain linoleum or cement in the wrong room would just *have* to come up looking junky.)

Amused at our theorizing, Doyen also went along with our final conclusion. Any room displaying as much top-quality furniture—most space going to major line stereo enclosures—just has to have warmth to it. No matter what the floor plan.

A rough count showed almost 75 wooden speaker enclosures, stereo systems and lesser consoles around us. A veritable sea of good design and polished grains. No wonder you accept the displays of accessories, microphones, tapes, etc., as mere bright spots.

The "sound room"?

A slight jutting of tape recorder displays is all that keeps it from being just "that corner of the room 'way over there." But a young man

diligently comparing dozens of speaker combinations was blissfully unaware of the lady buying a portable TV on the opposite side of the roomy room.

Dealer Doyen finds his clientele eager and growing—the Southern California pattern. The "college town" atmosphere doesn't affect his business particularly.

His location is almost three miles east of the traditional Whittier business center. But he's sure he gets plenty of trade as a result of being only a block or so from huge Whittier Center, a quality shopping complex.

"We started with 2 employees, now we have 11," he said. "Of course that is for both stores."

Both stores?

Yep. Turned out he opened a new store in La Mirada Shopping Center in March. Terry Dixon moved from the Whittier staff to manage it.

"Just a 1700 sq. ft. store," Doyen said, as though to apologize for not telling us what we should have known before.

Since the city of La Mirada also lies flush against the Orange County boundary to the south, we wouldn't be surprised if Don Doyen lined the border with stereo consoles some day as a promotion. With a color TV set every 300 yards!

Altshuler

from 29

owners these days are buying intercoms, radio-controlled garage doors, closed circuit TV for baby-minding, burglar and fire alarms—and hi-fi: all electronic utilities. Many of them may be installed by an electrician, but they can't be called electrical appliances in the usual sense. They require a specialist if they are to be intelligently marketed and serviced.

Turning the proposition around and looking at it from the other end, we now have sound specialists and TV repair services and similar enterprises, all of whom are looking to make a buck. The TV repair service may tell its men to ask whether there's another set in the house that might need work, while he's in the house. The sound specialist is trying to up a sale by plugging earphones.

But the additional profits represented by these techniques are, says Altshuler, peanuts by comparison to what could be available to someone willing to think in terms of systems: not just hi-fi systems, but electronic utility systems. Then you'd be selling not only the amplifier *and* the earphones, you'd be selling the wiring and the connectors and the remote control de-

(Continued on page 37)

FOR YOUR CUSTOMERS: A 10-MINUTE COURSE ON MICROPHONES TO EXPLAIN A **PHENOMENAL SUCCESS STORY**



Why the new 8000 is the most demanded microphone (of its kind!)

New University 8000: \$29.95.
With slide switch (the 8100): \$31.50.
Model DS-10 Desk Stand: \$6.95.

It's a cardioid. It's dynamic. It's shock-mounted. It offers variable impedance and uniform wide-range response. It's designed and made by LTV/University and it's less than \$50.00. Less than any other cardioid! It's only \$29.95. And it's sold with the world's only five-year microphone warranty!

The new University 8000 is a "first" and "only." For those who like to be exclusive, that's one reason for buying it. The important reasons may be found in the following microphone buyers' guide!

There Are Cardioids...and Cardioids. All cardioids are essentially "deaf" to sounds originating from the rear. They're invaluable for eliminating background sounds, for use in noisy and reverberant areas, for reducing feedback and for permitting a higher level of sound reinforcement before feedback would normally occur. BUT—not every cardioid uses rugged dynamic generating elements. There are crystal cardioids which offer high sensitivity and output. But their response is limited; deterioration is rapid due to heat, humid-

ity, rough handling. The University 8000—a cardioid dynamic—is virtually indestructible.

Tape Recording. Cardioid mikes are essential for quality recordings. They pick up only the performer over a wide frontal area. They prevent the output of speakers from affecting the mike, thus eliminating feedback squeal, and permit recordists to work from far or near. For stereo, only cardioids can assure proper balance, if both are matched. University quality control makes any two 8000's absolutely identical "twins" to assure full stereo effect.

Public Address. Cardioids make microphone placement far less critical; permit greater amplifier output—without feedback—than possible with omnis; assure superior intelligence indoors and out. For public address use, however, they must be extremely rugged. The 8000 can be handled without care. It can take extreme heat and humidity. The user can hit it, shout into it—even shoot a gun near it! It's also corrosion-proof.

Realism. Wide-range response is important. Uniform response is even more important. The new 8000 offers wide-band response, extremely uniform to eliminate sibilants (hissing S's), bass boom and tinny treble. Its reproduction quality is virtually indistinguishable from the live performance.

Cables, Long and Short. The 8000 has variable impedance—30/50 to 20,000 ohms. With high impedance mikes, a 10-foot cable is maximum to avoid response loss and hum pickup. The 8000, sold with a 15-foot cable, can also be used with longer cables to record without recorder noise; to monitor recordings through speakers instead of headphones, and make recordings with recorder out of sight.

For complete specifications on the fabulous 8000 series, write Desk...K-9

**LTV
UNIVERSITY**
A DIVISION OF LING-TEMCO-VOUGHT, INC.
9500 West Reno, Oklahoma City, Okla.

This
is
the Townsend
a new stereo turntable
which you can own
for only **\$59.95!**



That's all you will pay for this new top performance turntable by Weathers, a company whose turntables have won design awards and have been exhibited at the Louvre and Buenos Aires museums.

If you're graduating from a changer or looking forward to more discriminating music reproduction with a quality turntable, the Townsend will give you the incomparable sound that only Weathers can produce . . . Yet the price is under sixty dollars!

This turntable could not have been built 10 years ago, despite lower labor and material costs at that time. It took Weathers' experience in the creation of prize winning turntables and a constant search for new and better techniques and materials to produce the Townsend — including solid walnut, oil finished base and tone arm — at this unequalled low price of \$59.95.*

Write to Weathers for free literature
about this new stereo turntable or better yet,
go to your nearest hi-fi dealer for a demonstration.

WEATHERS Division of TelePro Industries, Inc.

Cherry Hill Industrial Center, Cherry Hill, New Jersey 08034.

Specs? Here are a few: speed — $33\frac{1}{3}$ rpm; combined wow & flutter — .065%; rumble — minus 50 db. The universal tone arm will accept any standard cartridge.

* With Weathers top rated LDM Stereo Cartridge — \$69.95.

WEATHERS

DIVISION OF TELEPRO INDUSTRIES, INC.,

CHERRY HILL INDUSTRIAL CENTER, CHERRY HILL, N. J. 08034

Please send me your free literature on the Townsend —
the World's Greatest Turntable Value at \$59.95.

NAME _____

STREET _____

CITY _____ STATE _____ ZIP CODE _____

vices and the intercom.

Furthermore, he feels this is a direction in which the industry *must* go. Systems concern us in more areas of electronics all the time. It is a way of thinking that will, he feels, take over consumer electronics sooner or later. The dealer or the manufacturer who sees the way ahead soonest and most clearly in this respect is, he believes, the one with the best chance of future success.

The current trend to "package systems" among the big consumer electronics manufacturers he sees as a first step in this direction. New levels of profit are available to our industry if we will only act soon enough and firmly enough in helping the future to come about now, he says.

And how do others feel about it? In the New York meeting, as in past discussions, there was general acquiescence in the basic premise that systems are coming to the consumer. One objection has frequently been raised by those who heard what Altshuler has to say: What about the dealer? If hi-fi is to be built into houses and apartment buildings, isn't that going to come out of his business?

Altshuler points out that he's not trying to peddle a blueprint for industry-wide operation. His is an idea—a concept. Working from this idea, businessmen (dealers or manufacturers or advertising men) can plan their own setup to take advantage of the possibilities.

At the New York meeting, Ed Askin pointed out that Rite Electronics has already been moving in this direction. By working with builders, they have been developing a market overlooked by most specialists. For a diversified operation like Rite's, the builder program is a natural: they have been carrying such items as garage door control devices for some time.

In comparing the electronic utilities situation with that of the more generally accepted utilities, several of those present at the New York meeting developed the idea that an effective program must work through both the manufacturer and the dealer—a pincer movement on the consumer. The preselling of manufacturer and institutional advertising and publicity campaigns both supports and is supported by the display and sales policies and attitudes that the consumer encounters at his own supplier.

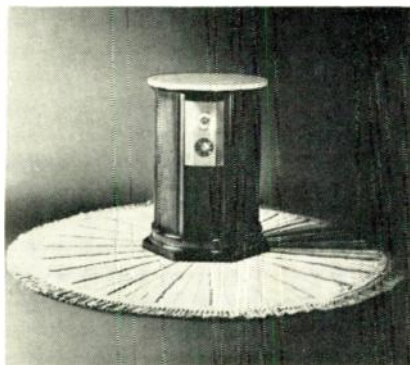
So Ed Altshuler has given us something to kick around. The question is, in what direction are we going to kick it?

SEPTEMBER, 1964

Products for profits

Empire enlarges Grenadier

A new model of the Grenadier speaker system, successfully introduced earlier this year by Empire Scientific Corp., has been added to



the line. The Royal Grenadier is similar to its smaller forebear, but features a 15-inch woofer (mounted, like the 12-inch version, facing down into a 360° horn). The round drum shape of the smaller model has been replaced by a fluted, septagonal "sonic column." The top is finished in imported Italian Perlata marble (another bid for the decorator's or housewife's vote). The woofer's ceramic magnet is reported to be the world's largest at 18 pounds.

Fisher markets compacts

Two new transistorized stereo systems, designed to meet the rising consumer demand for better-quality compact systems, have been introduced by the Fisher Radio. The new systems, called the Fisher 50 Portable and the Fisher 75 Custom Module, both have 30 watts of music power (IHF), and a highly flexible set of audio controls including a 5-position



selector, dual bass and treble, balance, volume, and a front-panel headphone jack. Both systems have connections for tuner and tape recorder, and will play anywhere that AC power

is available.

The lightweight portable consists of a 30-watt master control amplifier and Garrard 4-speed automatic turntable, plus two inductance-capacitance speaker systems. It has two 10-foot speaker cables for wide stereo separation. Only 23¾" wide, 8" high, and 14¼" deep, it is about the size of a man's one-suit.

The Fisher 75 Custom Module, identical in the electronics to the 50, has speaker systems with 8-inch woofers, compared to the portable's 6-inch woofers. The Fisher 50 Portable retails at \$229.50. The Fisher 75 Custom Module is \$269.50. Both systems are fair traded.

Thorens adds dust cover

A hand-rubbed walnut base is combined with a wood-paneled plexiglass dust cover in the new "showpiece" cabinet for Thorens turntables. The cover of the new cabinet, Model CAB,



is designed to balance in an open position without hinges or other hardware, and may be lifted from the base without disconnecting fittings.

Incorporated into the base is a new triple isolation mounting, to minimize effects from extraneous shocks and vibrations. Each base includes a set of pliant rubber damping grommets said to offer five times the resiliency of older grommets. They provide a cushion on which the turntable "floats," according to Paul King of Elpa Marketing Industries, Thorens importers. Another set of grommets is provided to afford complete isolation of all moving parts. Overall dimensions are 20" wide x 16¼" deep x 7½" high. A similar base, without a dust cover, has also been introduced.

(More products on page 82)

For your advance information:



This 32-page insert will announce the new Garrard models in consumer magazines. The first to carry it will be the three magazines which reach your most knowledgeable and influential customers...

Audio October
HiFi/Stereo Review. . October
High Fidelity October

Since the introduction of this radically new Garrard line is a major event for the consumer, as well as the dealer, we are adopting this unprecedented technique of distributing the entire presentation as an insert so that the greatest possible number of people will be effectively informed.

Additional copies are available for your distribution. **Garrard®**

*In these
32 pages
we offer you
technical and
non-technical
explanations
of today's
most advanced
record-playing
equipment.*

*This includes
LAB 80
the first
Automatic
Transcription
Turntable*





*What requirements
should a record player
meet . . . to justify
its inclusion in your
high fidelity system?*

The tone arm should be able to take your choice of any of the excellent low mass cartridges now on the market. These cartridges are sensitive, and the stylus assemblies are highly compliant. The arm must track them perfectly, and trip reliably, with very light stylus pressure.

The turntable, motor, and drive mechanism must be so silent . . . so meticulously engineered . . . that they will not add the slightest noise or distortion at any frequency or volume level.

To be compatible with wide range speaker systems and highly refined amplifiers (including solid state transistorized equipment), the entire record playing unit must be built to an exceptionally high order of precision.

Performance is the key factor, but *automatic convenience* and *sensible price* are also essential for maximum enjoyment.

Four years ago, these stringent requirements motivated Garrard to produce the original Automatic Turntable . . . Type A . . . a *new concept* which combined the advantages of single play turntables with the convenience of automatic record changers. The instantaneous, dramatic acceptance of the Type A established a significant trend, and today more people choose a Garrard than all other high fidelity record playing units combined.

Now . . . Garrard presents three highly advanced automatic turntables, plus an entirely new class, the first Automatic Transcription Turntable! This exceptional development by the Garrard laboratories is for the ultimate in music systems . . .



*This
new kind
of Garrard
is called
the LAB 80*

This is the **LAB 80**

*More than an
automatic turntable,
it is an Automatic
Transcription
Turntable*

The Lab 80 is designed for professional reproduction of LP/stereo records (33½ and 45 rpm) . . . literally without compromise. It was created expressly for those who have not been willing to accept any automatic unit heretofore.

Now, feature-by-feature comparisons will verify that the concept of the single play turntable combination has been obsoleted by a superior new class of mechanism.

With the Lab 80, Garrard establishes a spectacular new precedent in record playing equipment . . . combining precision, performance, and convenience of a standard not previously available, in single play or automatic units.

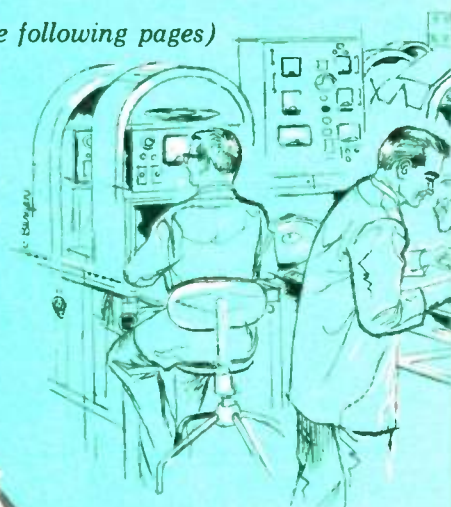
The price of the Lab 80 is \$99.50





To visualize what the Garrard Laboratories have achieved in the Lab 80, we urge you to take the time to read the galaxy of advancements built into it.

(Here are some highlights . . . described in greater detail on the following pages)





NEW BIAS COMPENSATOR
negates "skating"
... keeps stylus
evenly in groove
no matter how
light the tracking
force.

**NEW DYNAMICALLY
BALANCED
TONE ARM** made
of lightweight,
non-resonant wood,
insures optimum
performance
from every
cartridge.

**NEW MASSIVE
NON-MAGNETIC
12" TURNTABLE**
is balanced in
motion for perfect
speed.

**NEW INTEGRAL
CUEING DEVICE**
allows you
complete control
of tone arm,
for manual play
without damage to
records or stylus.

**NEW LOW-MASS
SHELL** is compat ble
with the latest
pickup designs.

**NEW ANTI-
STATIC MAT**
discharges static
electricity,
prevents dust
accumulating
on records.

**NEW ISOLATION
MOTOR SUSPEN-
SION** prevents
even slightest
vibrations from
reaching turntable.

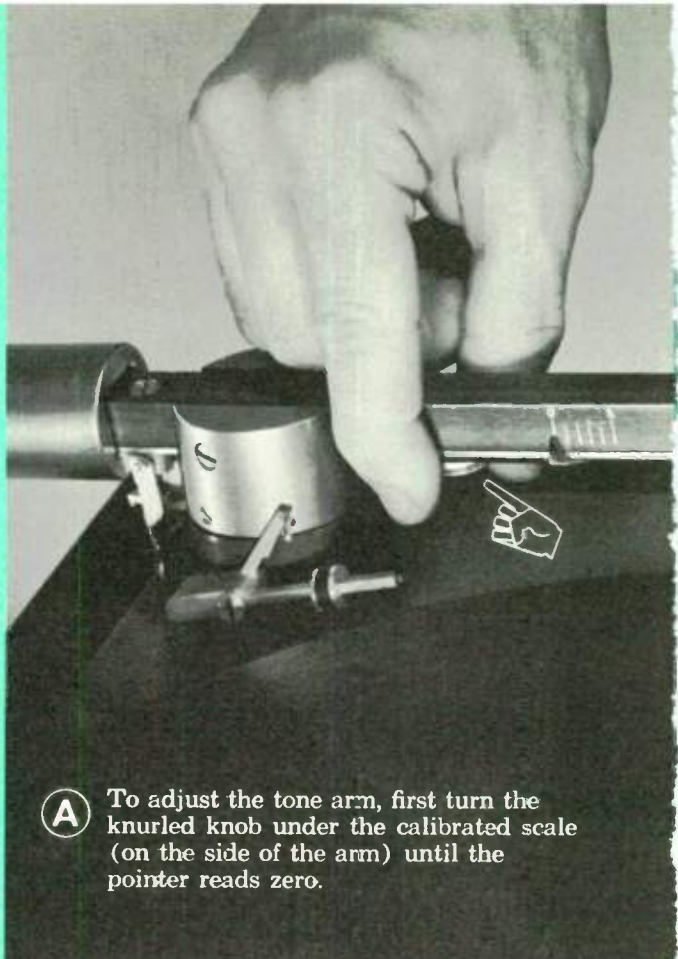
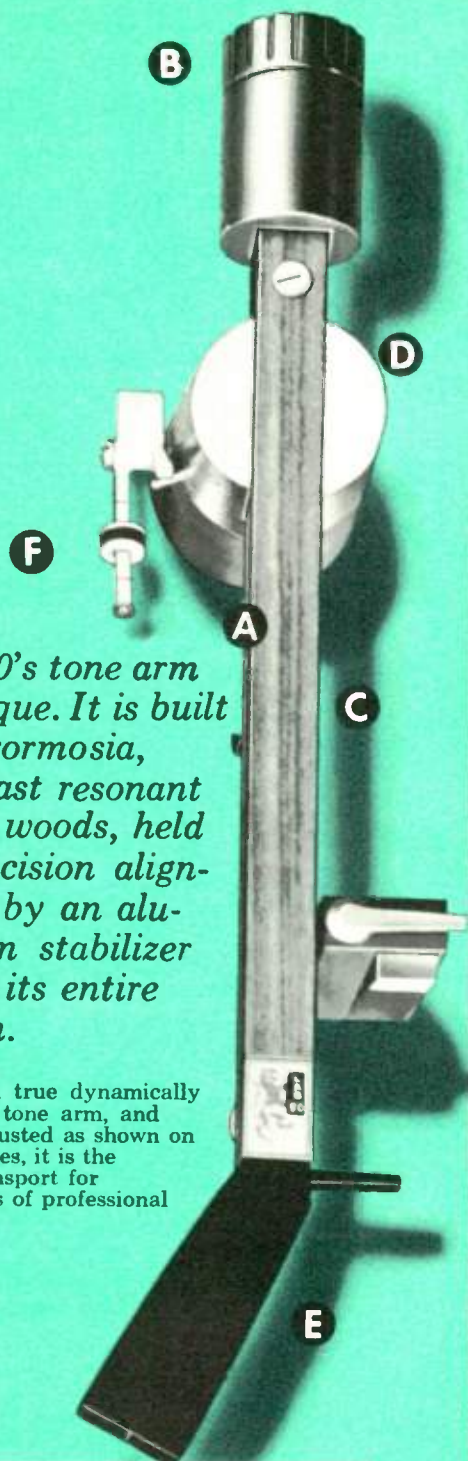
**NEW MAGNETIC
TRIP** permits
virtually
frictionless
automatic
operation and
shutoff.

Lab 80's tone arm is unique. It is built of Afrormosia, the least resonant of all woods, held in precision alignment by an aluminum stabilizer along its entire length.

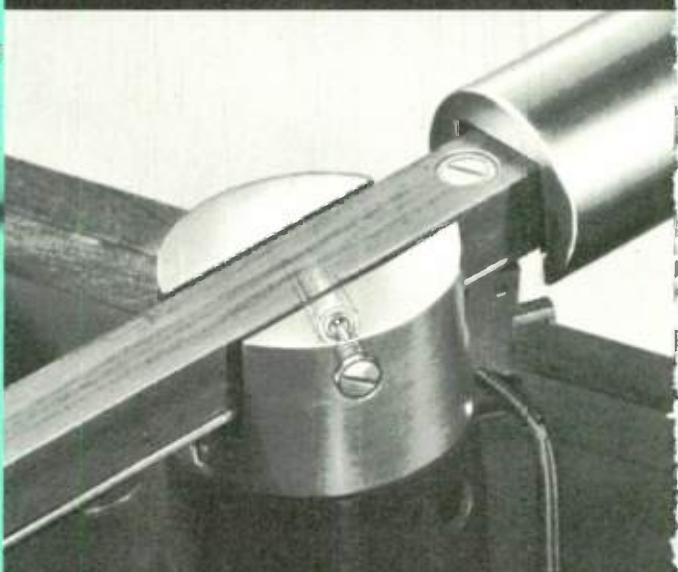
This is a true dynamically balanced tone arm, and when adjusted as shown on these pages, it is the ideal transport for cartridges of professional calibre.

An important note regarding stylus pressure and protection of your records:

As a service, we wish to point out that under no circumstances should any cartridge be operated at a lower stylus pressure than that prescribed by its manufacturer. Specifications for stylus pressure are determined by the basic design of the cartridge. To track at a pressure lower than specified may cause many undesirable effects, in terms of damage to record grooves; intermodulation and other distortions.



(A) To adjust the tone arm, first turn the knurled knob under the calibrated scale (on the side of the arm) until the pointer reads zero.



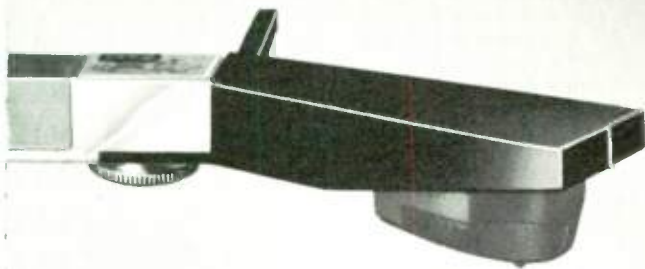
(D) Because of today's featherweight tracking, the slightest interference with free movement of the tone arm may affect the performance of the cartridge. To avoid this, the Lab 80 arm moves on special needle pivots, set into ball bearings. The flat geometry of the arm cancels out warp-wow distortion; and the low center of gravity eliminates sensitivity to external jarring.



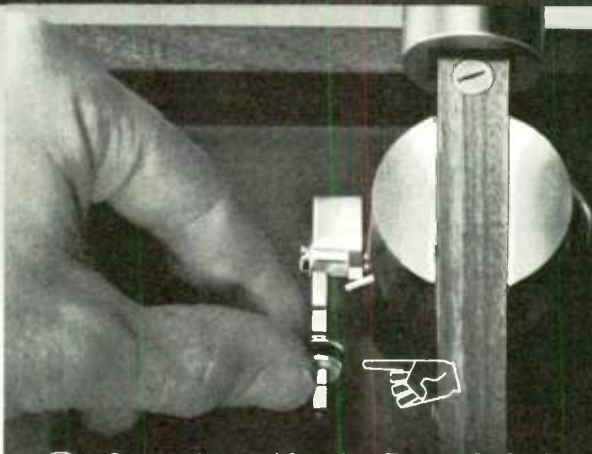
- B** Next, balance the arm until it floats level at zero tracking force. This is done by rotating the fine adjustment on the movable counterweight at the rear of the arm. (Note that the counterweight is isolated in rubber.)



- C** Then set the correct tracking force, as specified by the cartridge manufacturer. Turn the knurled knob under the scale, listening for the clicks, which can also be felt. Each click represents $\frac{1}{4}$ gram, providing an accurate audible setting, confirmed visually by the indicator on the side of the arm. (Since some professional cartridges today may be tracked as lightly as a fraction of a gram, this uniquely accurate method of setting is necessary to insure the best performance.)

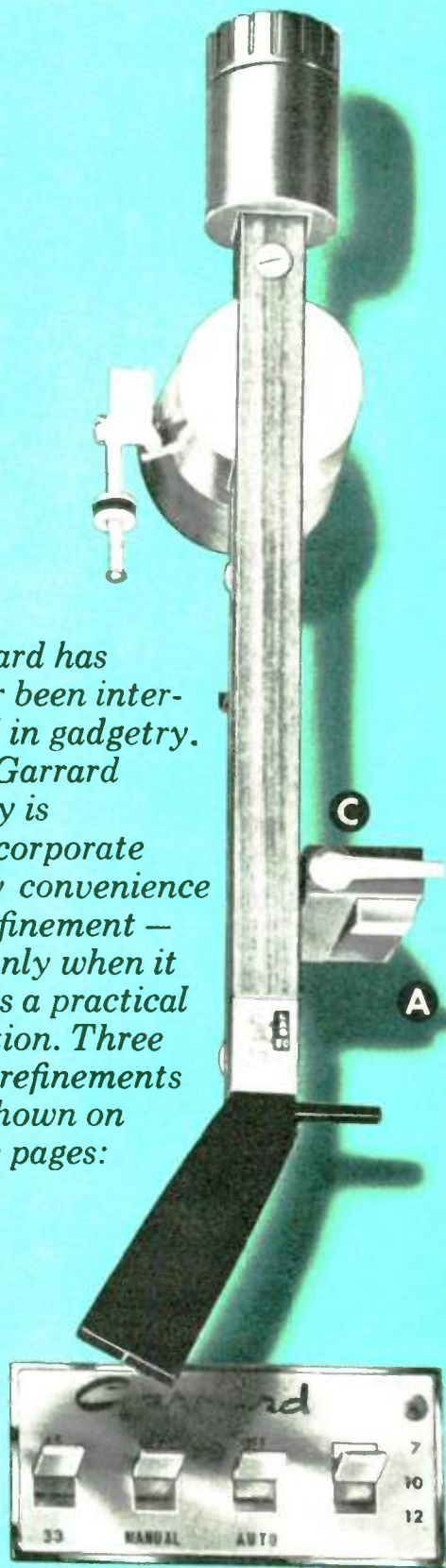


- E** The lightweight design of the shell makes it compatible with all cartridges including the new low mass professional types. The shell slides into the tonearm on channels and is fixed rigidly with a knurled screw, so that it cannot resonate or rotate from side to side. A new long finger lift insures safety in handling the shell.

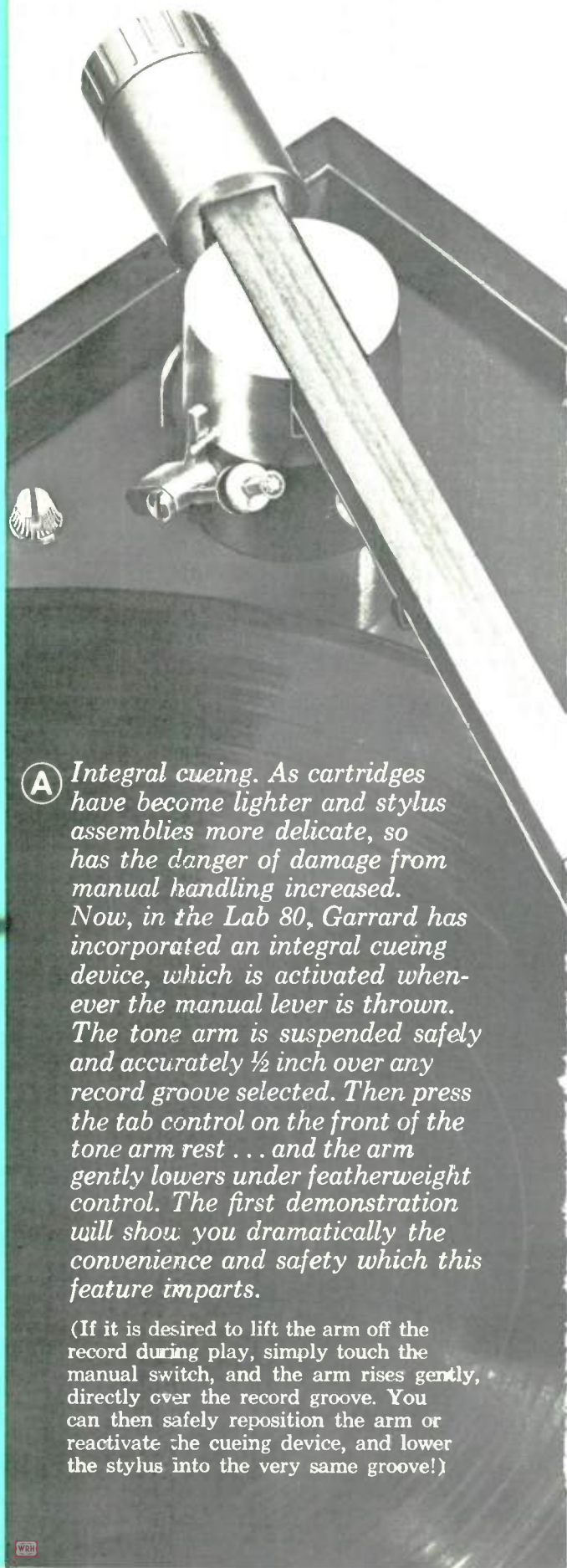


- F** One major problem in all record playing equipment is the tendency of the arm to slide inward across the record. This is overcome in the Lab 80 through an exclusive, patented bias compensator which accurately cancels out any tone arm skating force, making it possible to use a cartridge with the highest compliance and most delicate stylus assembly. Setting the bias compensator is simplicity itself. A weight on the compensator is moved to a position along its scale corresponding to the stylus pressure which has been set, establishing a direct relationship with the stylus pressure reading on the tonearm.

Garrard has never been interested in gadgetry. The Garrard policy is to incorporate every convenience or refinement — but only when it serves a practical function. Three such refinements are shown on these pages:

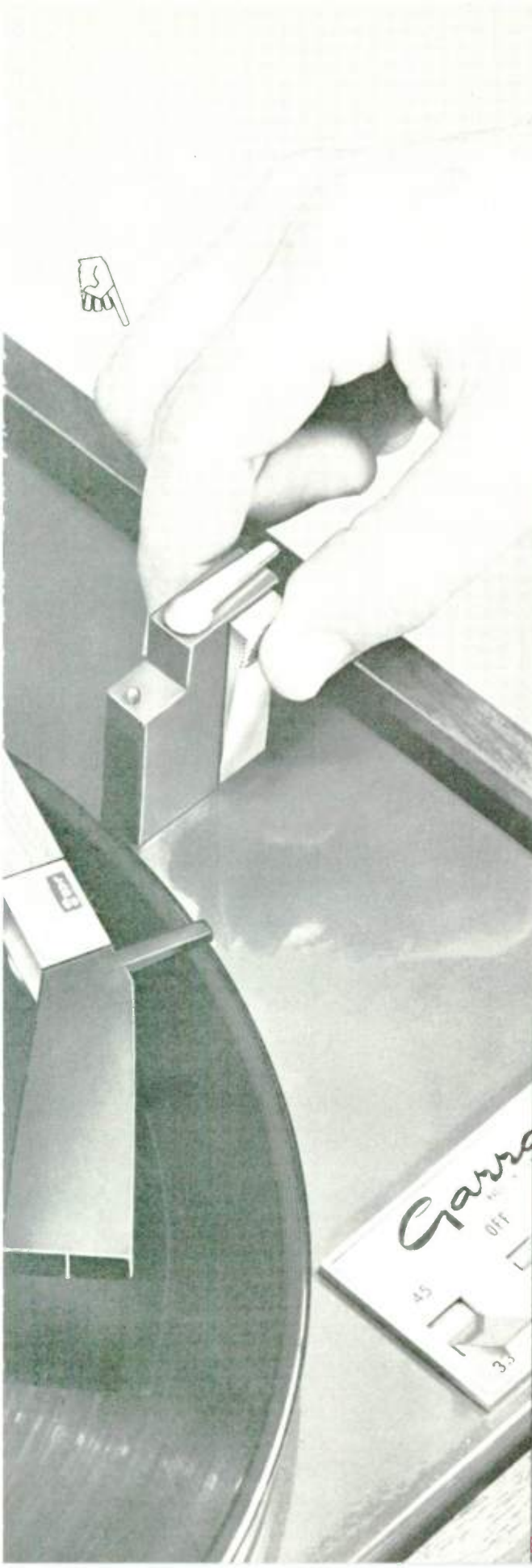


B



A *Integral cueing. As cartridges have become lighter and stylus assemblies more delicate, so has the danger of damage from manual handling increased. Now, in the Lab 80, Garrard has incorporated an integral cueing device, which is activated whenever the manual lever is thrown. The tone arm is suspended safely and accurately $\frac{1}{2}$ inch over any record groove selected. Then press the tab control on the front of the tone arm rest . . . and the arm gently lowers under featherweight control. The first demonstration will show you dramatically the convenience and safety which this feature imparts.*

(If it is desired to lift the arm off the record during play, simply touch the manual switch, and the arm rises gently, directly over the record groove. You can then safely reposition the arm or reactivate the cueing device, and lower the stylus into the very same groove!)



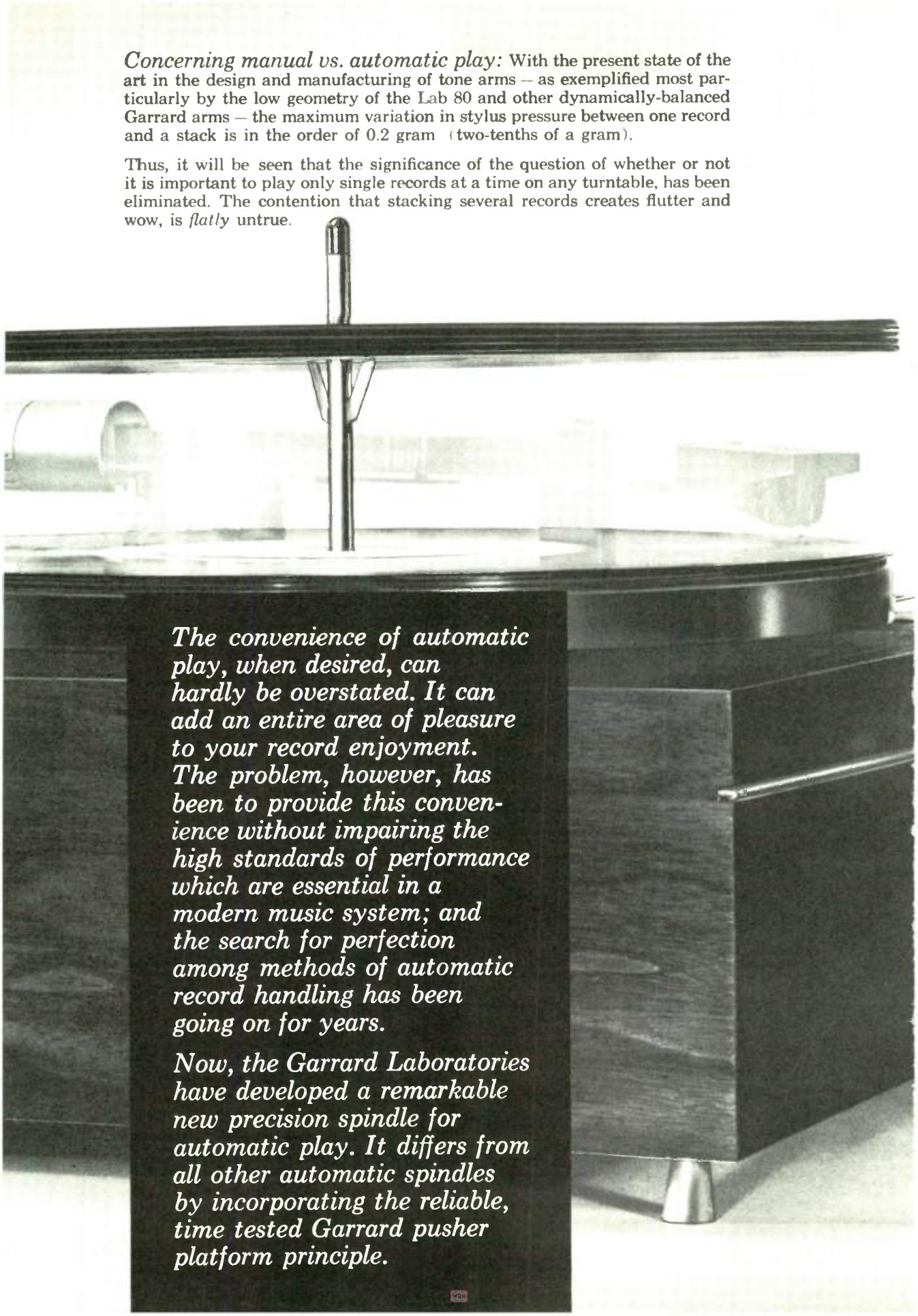
- (B)** *Tab controls.* Lab 80 features finger tip tab controls, handsomely designed and set into an engraved escutcheon. Switches for "manual" and "automatic" are separate, yet all functions are coordinated on this single panel. The tabs are easily accessible... require only featherweight touch to start, reject, or stop, and insure safety from damaging pickup jump due to accidental jarring of the record player. An illuminated indicator tells the record size selected and acts as a pilot light.



- (C)** *Automatic shutoff.* At the end of a single record (or the last record in "automatic" position) the tone arm returns to its rest and the Lab 80 shuts off. This simple convenience can add more to the pleasure of listening to records than most other features. A spring-loaded lock can then be turned into position to protect the tone arm from accidents.

Concerning manual vs. automatic play: With the present state of the art in the design and manufacturing of tone arms — as exemplified most particularly by the low geometry of the Lab 80 and other dynamically-balanced Garrard arms — the maximum variation in stylus pressure between one record and a stack is in the order of 0.2 gram (two-tenths of a gram).

Thus, it will be seen that the significance of the question of whether or not it is important to play only single records at a time on any turntable, has been eliminated. The contention that stacking several records creates flutter and wow, is *flatly* untrue.



The convenience of automatic play, when desired, can hardly be overstated. It can add an entire area of pleasure to your record enjoyment. The problem, however, has been to provide this convenience without impairing the high standards of performance which are essential in a modern music system; and the search for perfection among methods of automatic record handling has been going on for years.

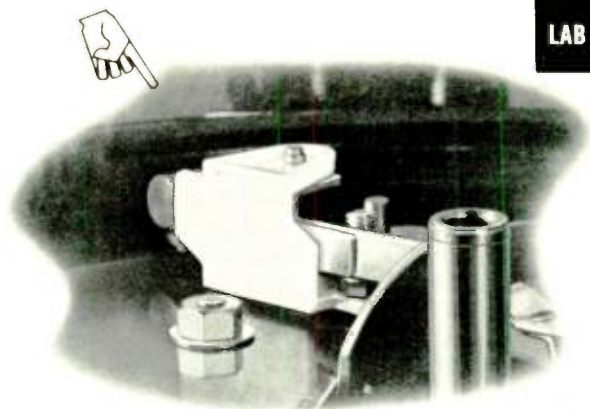
Now, the Garrard Laboratories have developed a remarkable new precision spindle for automatic play. It differs from all other automatic spindles by incorporating the reliable, time tested Garrard pusher platform principle.



In use, the automatic pusher spindle is relatively simple. The stack of records is securely held on three widely extended arms. Then, utilizing the basic Garrard technique, the arms retract and the individual records are pushed off gently.

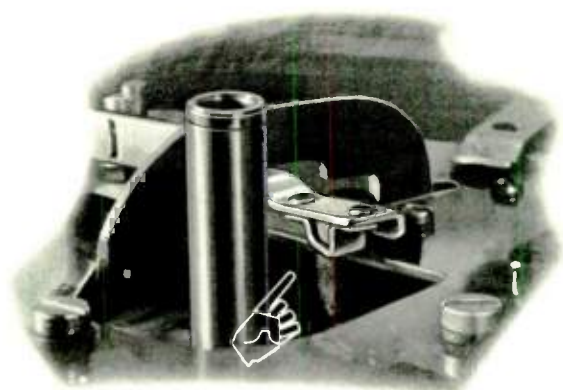
This is the technique which established Garrard as the pre-eminent name in automatic record playing equipment, because it proved, over the years, completely reliable and gentle to records. Now, the pusher platform principle has been designed into the spindle, creating the safest, most positive-acting device of its kind.

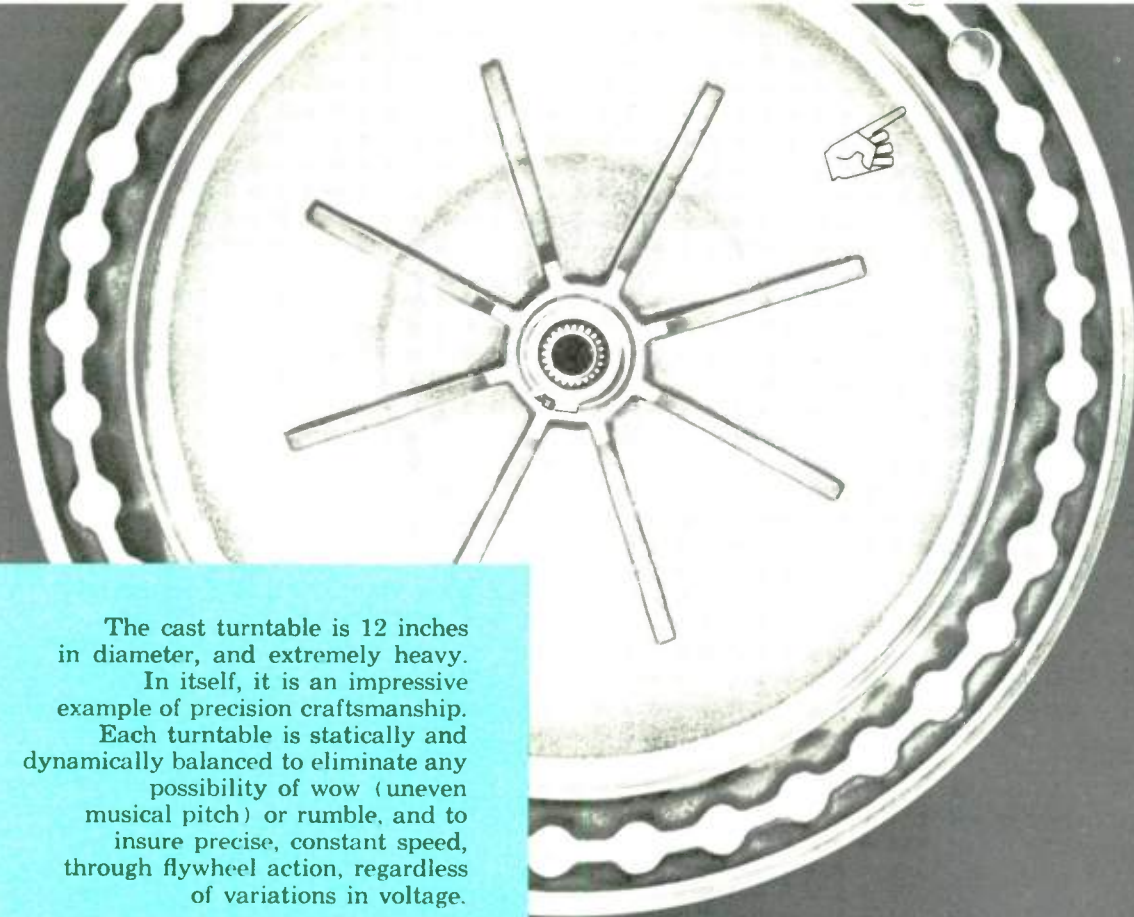
(Of course, this spindle is used only for automatic play. A short spindle is provided for your use in playing single records.)



The trip mechanism is the device which activates the automatic record changing and the automatic shutoff at the end of the last record. Since the tone arm mechanism must engage the trip mechanism, the problem with automatic units has been to accomplish this with the least possible amount of friction or drag. Indeed, one of the points claimed in favor of single play turntables has been the lack of a trip mechanism, even though no one will dispute the tremendous advantage of the automatic feature. In the Lab 80, the trip mechanism is revolutionary and obviates this argument. The trip assembly is molded completely of Delrin® the remarkable new Dupont "slippery" material which has an exceptionally low co-efficient of friction. Resistance of the trip mechanism to the tone arm engaging it becomes virtually unmeasurable.

The tripping cycle is activated by ultra-sensitive magnetic repulsion (through the use of magnets with polarities which repel each other), eliminating the need for mechanical contact. The combination of these two principles, ingeniously applied for the first time to an automatic record playing device, is the answer of the Garrard engineers to the stringent requirements of ultra-sensitive cartridges, allowing the unit to trip reliably, at virtually zero force.





The cast turntable is 12 inches in diameter, and extremely heavy.

In itself, it is an impressive example of precision craftsmanship.

Each turntable is statically and dynamically balanced to eliminate any possibility of wow (uneven musical pitch) or rumble, and to insure precise, constant speed, through flywheel action, regardless of variations in voltage.

The special turntable mat is formulated from a remarkable new anti-static material. It dissipates the electrical charge on records, so that they will not attract dust. Dust is one of the key causes of record wear, as well as unwanted noise. The fine grooves of the mat have been scientifically designed to provide full support to the record.



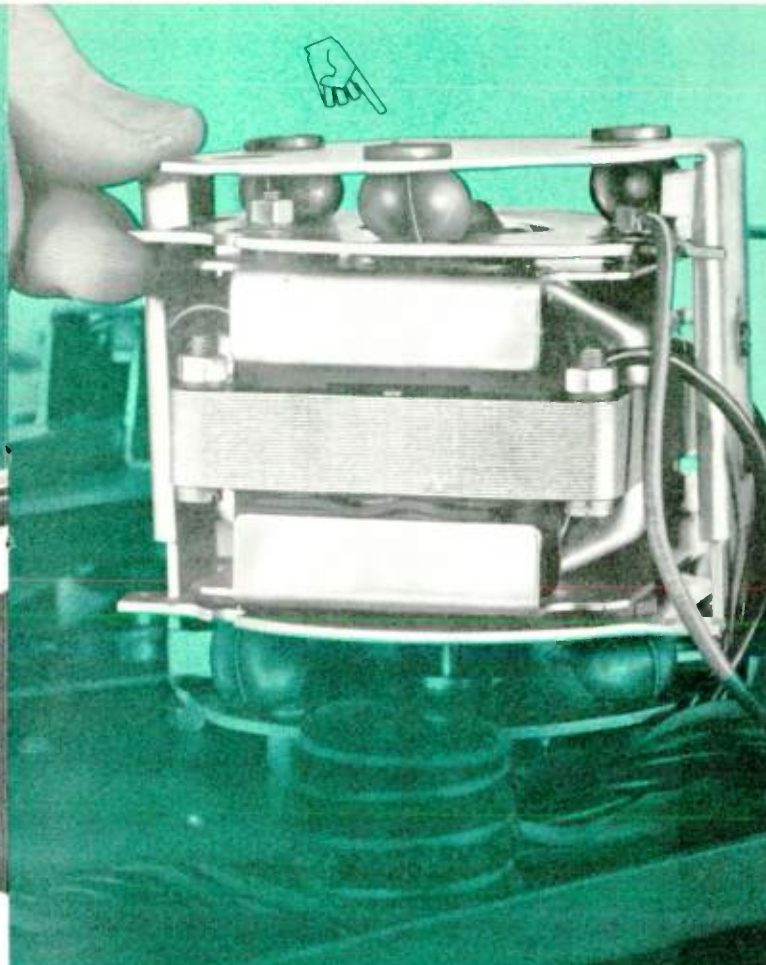
This is the new Type A70

ultimate expression of the Automatic Turntable concept, which Garrard launched with the original Type A, the most successful record playing instrument the high fidelity field has ever known

This new automatic turntable is a perfect expression of the Garrard philosophy. Those who are familiar with the great models which established the Garrard reputation for unassailable integrity, will recognize in the Type A70 certain familiar proven features which have become indivisible from the Garrard name. The most notable of these is the pusher platform automatic record changing principle... a classic mechanism which has never been equalled, much less surpassed, for gentleness or reliability.

However, traditional features are only half the story of the Type A70... for this is also the newest and most advanced of all automatic turntables! For example, the exciting tone arm described on the following pages is but one of a number of innovations which confirm how successfully Garrard has re-engineered the classic unit, advanced it beyond all other automatic turntables, and reconfirmed it as the definitive record player for the finest music systems.

The price of the Type A70 is \$84.50



Constant, reliable speed, of course, is essential. Recent tests confirm the traditional Garrard viewpoint that the motor type (induction or hysteresis) is not the key factor in fine reproduction. It is basic compatibility of the motor to the particular turntable/drive mechanism, and meticulous manufacturing, which determine outstanding results.

The Lab 80 is powered by the unsurpassed Laboratories Series® motor (with dynamically balanced armature), designed and built entirely by Garrard, which will maintain speed within NAB standards even through the unlikely line voltage variation of 95 to 135 volts.

The loose assumption or contention that only a hysteresis motor can maintain speed with such reliability is simply untrue.

It is isolated from the unit plate by a revolutionary suspension system of rubber anti-vibration devices and damping pads. This ingenious mounting system frees the Lab 80 from any vestige of spurious vibrations which might reflect in record reproduction.

The entire Lab 80 unit floats on a new 5-point foam-damped spring suspension system, which isolates it from external jarring and the mechanical interference known as "feedback". Installation is simple and practical. The Lab 80 is stereo wired, with a 4-pin, 5-wire system; separate ground connections... the ideal wiring because it eliminates danger of hum-causing factors. Leads plug into the player with Amplok plug (for AC) and twin female phono sockets on the unit plate, for the audio connection. This simplifies connecting or disconnecting the player. Dimensions are compact enough to fit most high fidelity cabinets.

Specifications:
2 speeds: 33 1/3 and 45 rpm.
100-130 volts, 60 cycles AC (50 cycle pulley available).
Minimum cabinet dimensions:
17" left to right; 14 3/4" front to rear;
5 1/2" above and 3 1/2" below motor board.

This, then is Garrard's Lab 80 Automatic Transcription Turntable... a record-playing unit unequalled by any now on the market... destined to establish a new milestone by Garrard in the continual striving toward perfection which characterizes our industry.

This superlative mechanism has been magnificently styled to grace the finest music system, the smartest decor. On its decorator base, the Lab 80 is a symphony of shimmering satin metal, grained wood, and a special iridescent color that picks up and reflects the warmth of the cabinet finish. Into this excellent unit have been lavished every skill, every technique known to the Garrard Laboratories. To judge for yourself how well they have succeeded, use the convenient chart below to compare the Lab 80's main features with any other record playing unit you may be contemplating.

COMPARATOR CHART

LAB 80 <input checked="" type="checkbox"/>	Other <input type="checkbox"/>
Dynamically balanced, counterweight-adjusted tone arm of Afrormosia wood	
LAB 80 <input checked="" type="checkbox"/>	Other <input type="checkbox"/>
Calibrated stylus pressure scale, with click settings	
LAB 80 <input checked="" type="checkbox"/>	Other <input type="checkbox"/>
Low mass shell	
LAB 80 <input checked="" type="checkbox"/>	Other <input type="checkbox"/>
Bias compensator (Anti-skating device)	
LAB 80 <input checked="" type="checkbox"/>	Other <input type="checkbox"/>
Integral cueing device	
LAB 80 <input checked="" type="checkbox"/>	Other <input type="checkbox"/>
Finger tip tab controls	
LAB 80 <input checked="" type="checkbox"/>	Other <input type="checkbox"/>
Automatic play, when desired, with revolutionary pusher spindle	
LAB 80 <input checked="" type="checkbox"/>	Other <input type="checkbox"/>
Delrin® trip mechanism with magnetic repulsion	
LAB 80 <input checked="" type="checkbox"/>	Other <input type="checkbox"/>
12 inch, balanced, weighted, anti-magnetic turntable with anti-static turntable mat	
LAB 80 <input checked="" type="checkbox"/>	Other <input type="checkbox"/>
Laboratory Series 4-pole shaded motor	
LAB 80 <input checked="" type="checkbox"/>	Other <input type="checkbox"/>
Motor Isolation system	
LAB 80 <input checked="" type="checkbox"/>	Other <input type="checkbox"/>
4-pin, 5-wire stereo wiring with Amplok plug connections	



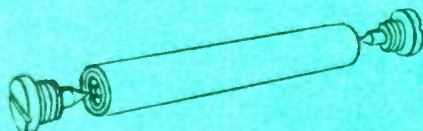


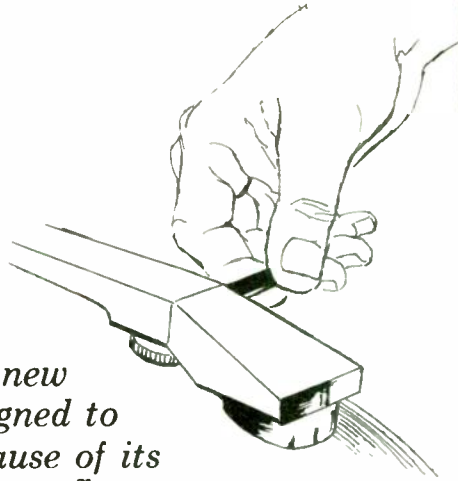


The adjustable counterbalance weight at the rear of the tone arm . . . low and in line with the cartridge . . . establishes an optimum center of gravity. This assures accurate tracking and makes it possible for the arm to resist external jarring and vibrations.

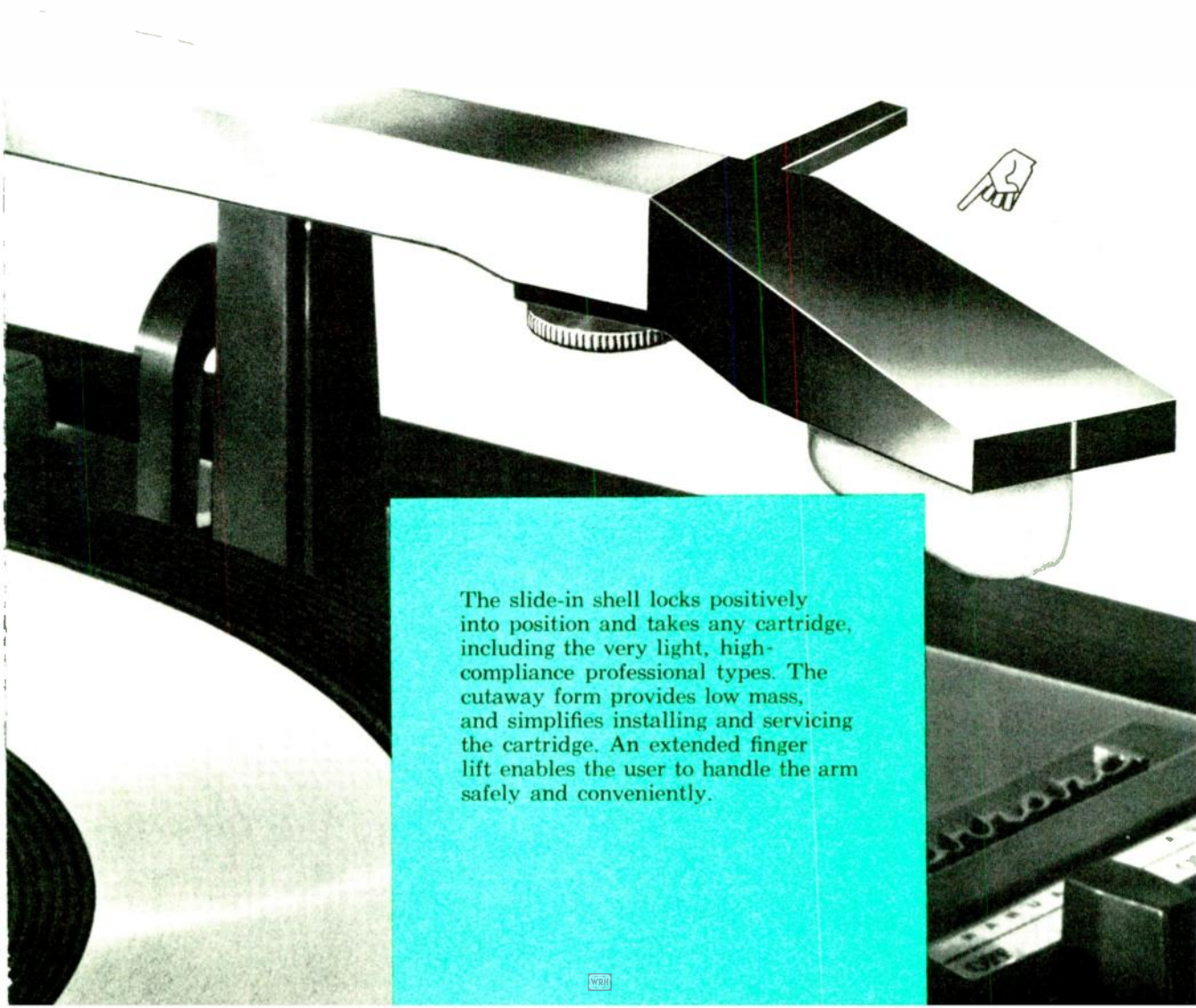


Special needle pivots set into miniaturized ball bearings, make vertical motion of the tone arm virtually frictionless.

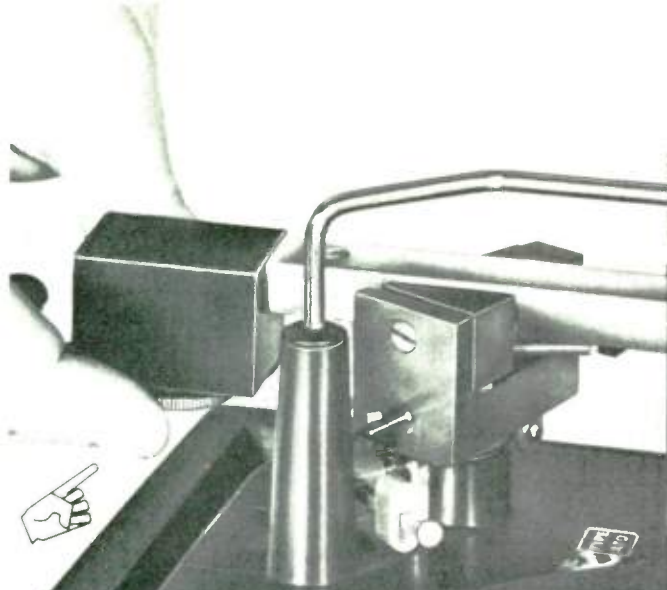




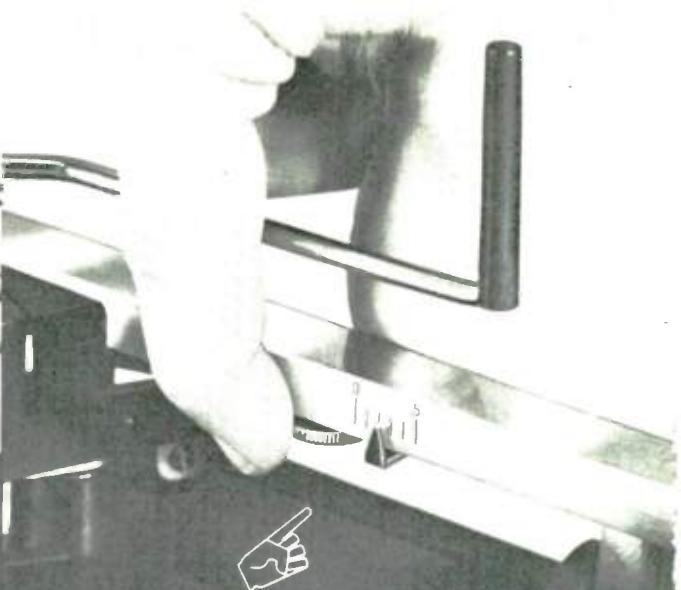
The Type A70 features a completely new dynamically balanced tone arm, designed to an exceptionally high standard. Because of its low mass and flat geometry, this arm offers impressive advantages in tracking capability. Since total side pressures acting on the arm at the stylus have been kept infinitesimal, the Type A70 achieves outstandingly clean reproduction with modern cartridges.



The slide-in shell locks positively into position and takes any cartridge, including the very light, high-compliance professional types. The cutaway form provides low mass, and simplifies installing and servicing the cartridge. An extended finger lift enables the user to handle the arm safely and conveniently.



Stylus pressure on the Type A70 is adjusted in two simple steps, similarly to the Lab 80. First, the sliding counterbalance weight is moved to the position which balances the cartridge (so that the arm floats level above the turntable), and locked in position by tightening an accessible adjusting screw. The arm is now in balance, at zero stylus pressure.



Then, the correct tracking force prescribed for the cartridge is set by turning the adjusting screw under the tone arm. The reading is taken on the calibrated scale at the side of the arm. As the knurled screw turns a click is heard (and felt) for each $\frac{1}{4}$ gram. The stylus pressure setting, therefore, is extremely accurate.



As in the Lab 80, the Type A70 tone arm incorporates an adjustable bias compensator anti-skating device. Simply slide the weight to the notch corresponding on the scale to the stylus pressure. With the bias compensator set, the arm will track accurately and without distortion — even if the player is intentionally tilted, the record warped, or not concentric. It will bring out the best in any cartridge used, applying equal pressure on both sides of the stereo record groove, to minimize stylus and record wear.



The full-sized, balanced turntable of the Type A70 is unique, having certain advantages not found in other units. Actually it consists of two turntables balanced together... a drive table inside and a heavy cast turntable outside. These are separated by a resilient foam barrier, which damps out noise and vibration. Being non-ferrous, the cast table offers no attraction to magnetic pickups, which might affect tracking pressure. The heavy turntable weight is the optimum for perfect torque and flywheel action in the Type A70.

TYPE A70 COMPARATOR CHART

A TYPE A70 ☒ OTHER ☐

Dynamically balanced, counterweight-adjusted tone arm

B TYPE A70 ☒ OTHER ☐

Flat silhouette and low center of gravity (tone arm)

C TYPE A70 ☒ OTHER ☐

Audible, visible 1/4 gram check settings on stylus pressure gauge built into tone arm

D TYPE A70 ☒ OTHER ☐

New lightweight shell

E TYPE A70 ☒ OTHER ☐

Adjustable bias compensator (anti-skating device)

F TYPE A70 ☒ OTHER ☐

Needle pivots for tone arm bearings

G TYPE A70 ☒ OTHER ☐

Exclusive full-sized, heavy, balanced cast "sandwich" turntable

H TYPE A70 ☒ OTHER ☐

Double shielded Laboratory Series® 4-pole shaded motor

I TYPE A70 ☒ OTHER ☐

Ultra-sensitive trip with Delrin®

J TYPE A70 ☒ OTHER ☐

Garrard's exclusive pusher platform, offering the great advantage of automatic play when desired, without compromise (Safest automatic record handling principle ever developed)

K TYPE A70 ☒ OTHER ☐

Garrard iridescent color, compatible with all cabinet finishes

L TYPE A70 ☒ OTHER ☐

New decorator base — optional

M TYPE A70 ☒ OTHER ☐

Spring cushioned suspension, damped by foam rubber to prevent feedback and sympathetic vibrations

N TYPE A70 ☒ OTHER ☐

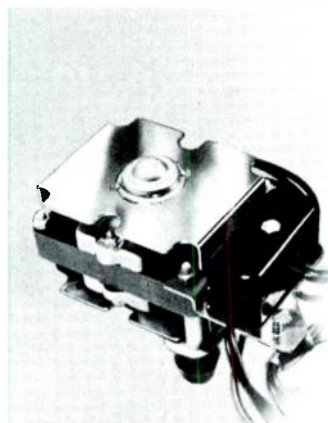
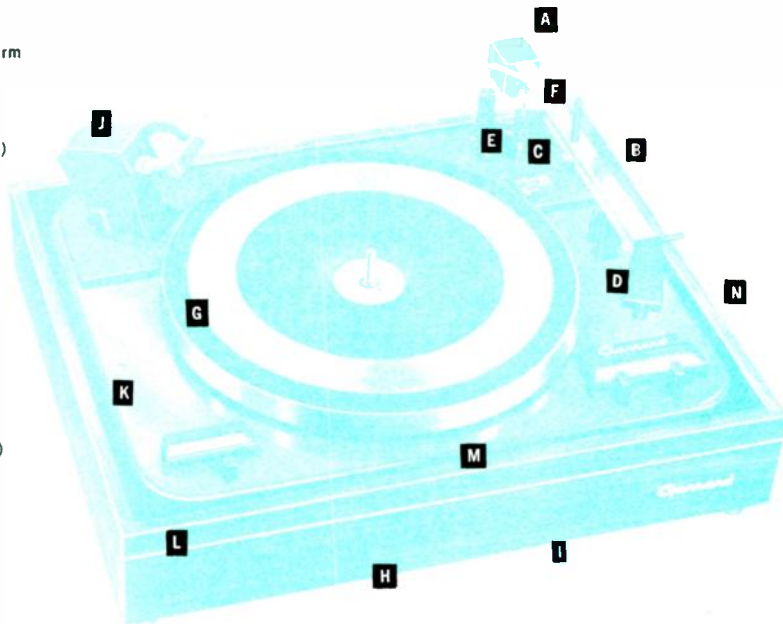
Simple installation and service: Type A70 is stereo-wired with 4-pin, 5-wire system. Separate ground connection eliminates hum. Leads simply plug into player with built in Amplok plug (for AC) and female twin phono socket on unit plate (for audio)

Specifications:

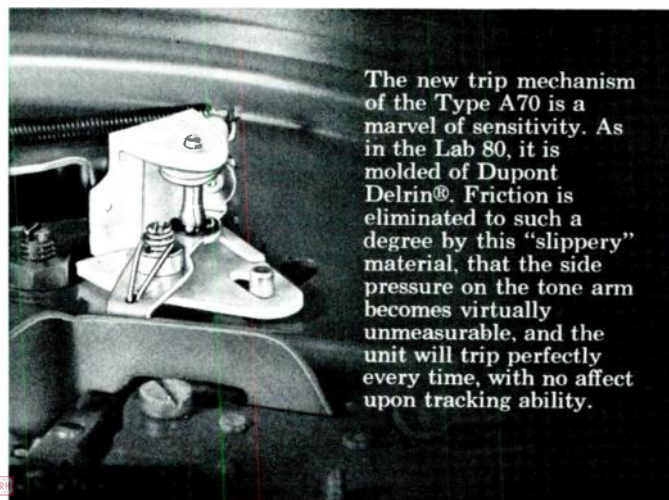
4 speeds: 16 2/3, 33 1/3, 45 and 78 rpm.
100-130 volts, 60 cycles AC (50 cycle pulley available)

Minimum cabinet dimensions:

16 3/4" left to right, 14 1/8" front to rear,
6" above and 2 7/8" below motor board



The Type A70 is built around the Garrard Laboratories® shaded 4-pole motor, designed specifically for use with this turntable and drive assembly. It is shielded completely, top and bottom, with accurately oriented plates which prevent any interference or hum, even when ultra-sensitive magnetic cartridges are used.



The new trip mechanism of the Type A70 is a marvel of sensitivity. As in the Lab 80, it is molded of Dupont Delrin®. Friction is eliminated to such a degree by this "slippery" material, that the side pressure on the tone arm becomes virtually unmeasurable, and the unit will trip perfectly every time, with no affect upon tracking ability.

This is the new
AT60
*an automatic turntable
with intermix capability*

Handsomely dramatic in the new Garrard iridescent color and brushed aluminum, this precision model meets all the critical performance standards required of a Garrard automatic turntable, offering the additional advantage of compact versatility. The tubular tone arm is particularly efficient... dynamically-balanced and counterweight-adjusted, with built-in stylus pressure gauge.

Under its distinctive turntable mat, the AT60 incorporates a heavy, die-cast, oversized turntable — dynamically-balanced and non-magnetic. This feature — so vital to professional performance — has been found previously only in the highest bracket automatic turntables.

The price of the AT60 is \$59.50



This massive turntable makes for more constant speed, and correct torque through flywheel action. It also facilitates using the AT60 with refined cartridges and amplifiers of greater sensitivity than in earlier music systems.



The turntable of the AT60 is an example of the Garrard policy of consistently upgrading equipment by incorporating the advantages of higher priced units as soon as they can be made available . . . when the changes can be expected to impart genuine improvement in performance.

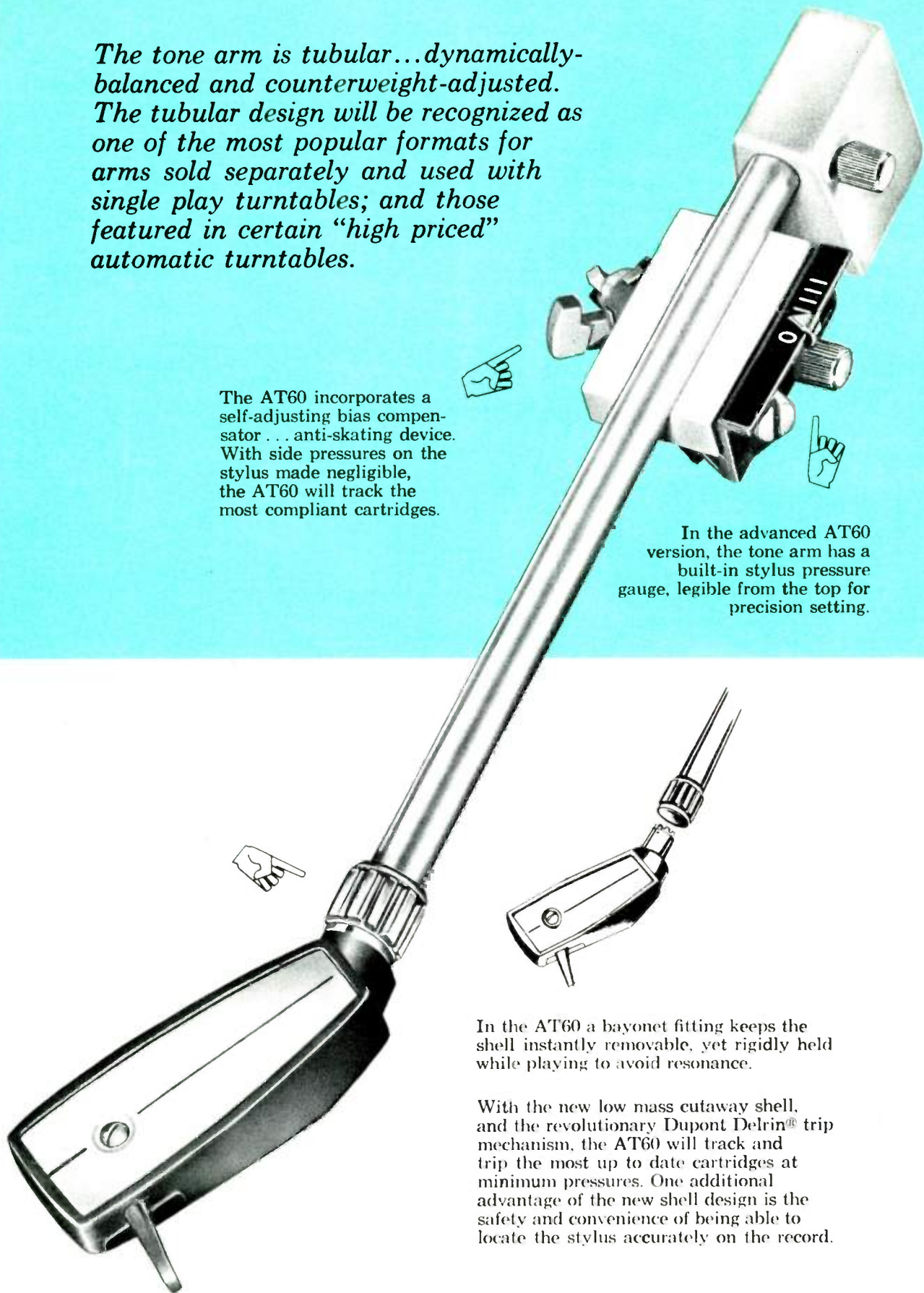
The tone arm is tubular...dynamically-balanced and counterweight-adjusted. The tubular design will be recognized as one of the most popular formats for arms sold separately and used with single play turntables; and those featured in certain "high priced" automatic turntables.

The AT60 incorporates a self-adjusting bias compensator... anti-skating device. With side pressures on the stylus made negligible, the AT60 will track the most compliant cartridges.

In the advanced AT60 version, the tone arm has a built-in stylus pressure gauge, legible from the top for precision setting.

In the AT60 a bayonet fitting keeps the shell instantly removable, yet rigidly held while playing to avoid resonance.

With the new low mass cutaway shell, and the revolutionary Dupont Delrin® trip mechanism, the AT60 will track and trip the most up to date cartridges at minimum pressures. One additional advantage of the new shell design is the safety and convenience of being able to locate the stylus accurately on the record.



AT60 COMPARATOR CHART

A **AT60** ☒ **OTHER** ☐

Tubular dynamically-balanced counterweight-adjusted tone arm

B **AT60** ☒ **OTHER** ☐

Built-in stylus pressure gauge, legible from top

C **AT60** ☒ **OTHER** ☐

Tubular overarm

D **AT60** ☒ **OTHER** ☐

Needle pivots for arm bearings

E **AT60** ☒ **OTHER** ☐

Automatic bias compensator (anti-static device)

F **AT60** ☒ **OTHER** ☐

Lightweight cut-away shell and finger lift

G **AT60** ☒ **OTHER** ☐

Positive-acting tone arm safety catch to prevent accidents, simplify portability

H **AT60** ☒ **OTHER** ☐

Heavy, cast, oversized turntable

I **AT60** ☒ **OTHER** ☐

Double-shielded Laboratory Series® 4-pole shaded motor, in a special version designed exclusively for the AT60

J **AT60** ☒ **OTHER** ☐

Automatic intermix operation, when desired

K **AT60** ☒ **OTHER** ☐

Supersensitive trip. As in all the new Garrard models, the AT60 utilizes Dupont Delrin® to offset friction and make it possible to track and trip high compliance pickups at correct minimal tracking force

L **AT60** ☒ **OTHER** ☐

Decorator styled base — optional

M **AT60** ☒ **OTHER** ☐

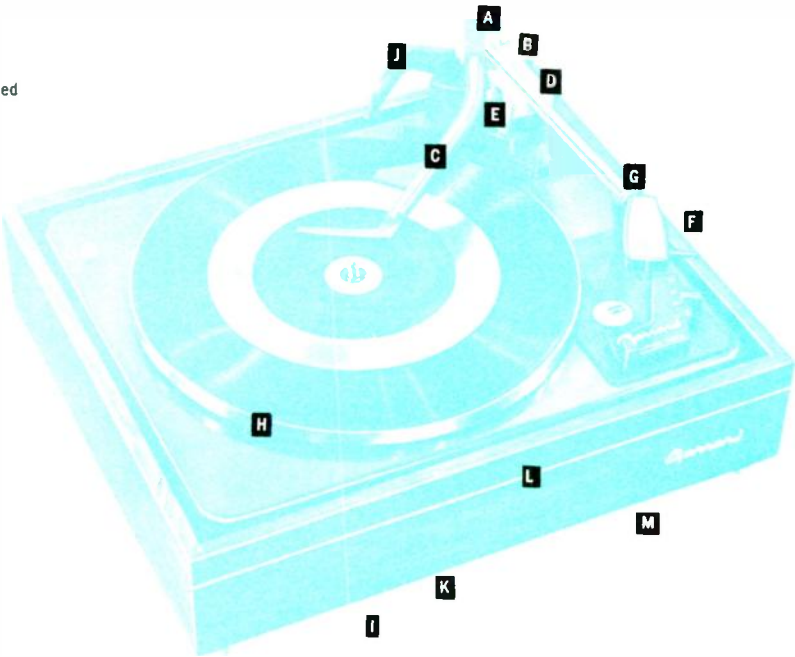
Simple installation: AT60 is fully wired for stereo, with a 4-pin, 5-wire system utilizing separate connection for ground, to eliminate hum. Leads connect to the changer with a built-in Amplok plug (for AC) and a female twin phono socket mounted on the unit plate (for audio). Simply plug-in at the player!

Specifications:

4 speeds: 16 $\frac{2}{3}$, 33 $\frac{1}{3}$, 45 and 78 rpm.
100-130 volts, 60 cycles AC (50 cycle pulley available).

Minimum cabinet dimensions:

15 $\frac{3}{8}$ " left to right, 13 $\frac{1}{8}$ " front to rear,
4 $\frac{7}{8}$ " above and 2 $\frac{7}{8}$ " below motor board.



Two spindles are provided. A convenient short spindle is used for playing single records manually.



The short spindle is interchangeable with a center-drop spindle for automatic play, when desired.



With the automatic spindle and tubular overarm in position, the AT60 becomes the safest and most reliable center-drop intermix automatic available today. The spindle removes for safety and convenience in taking records off the turntable. AT60 is compact, fits easily into any record changer cabinet or space.

This is the new Model 50

*Garrard has now designed
an exceptionally compact
automatic turntable
at the price of an
ordinary record changer!*

It is a handsomely styled 4-speed unit designed to introduce new standards of performance and versatility to systems where space must be considered. This brilliant little manual/intermix automatic is suitable for installation in any type of component music system; or in consoles, where it is perfect as a replacement unit. Built to Garrard's highest standards, Model 50 incorporates a number of advanced features never before available in a record player of such modest price.

Model 50 is an excellent example of how much can be accomplished by the Garrard organization, with its half-century of experience, setting out to create a new precedent for quality and precision in an economical unit. Compare the Model 50 with the most expensive automatic turntables, and you will find that the counter-weighted tone arm and full sized turntable impressively illustrate this point.

The price of the Model 50 is \$44.50

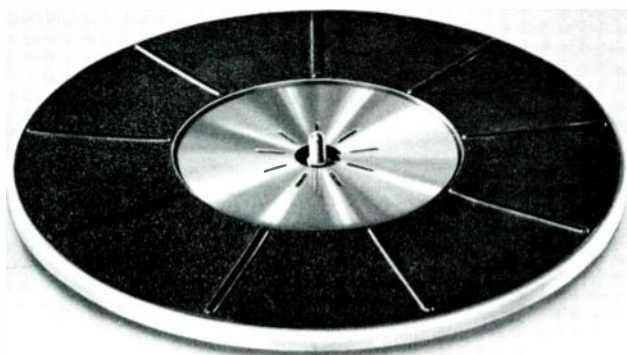
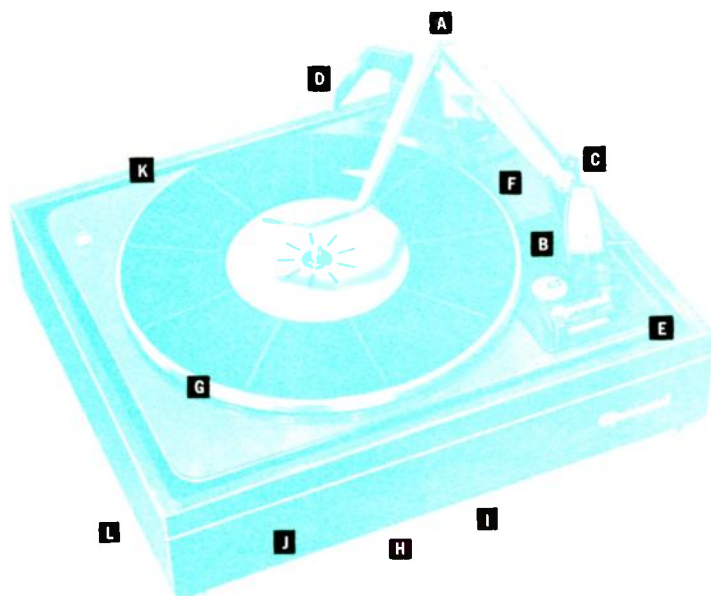


The shell is the lightweight cut away type with an extended finger lift for safety in handling. It plugs in . . . accommodates your widest personal choice of cartridges . . . can be removed from the arm instantly to change the cartridge or service the stylus.

Stylus pressure is adjusted with a simple, accessible finger touch device, for correct tracking force, according to the cartridge manufacturers' specifications.



The graceful cast aluminum tone arm is counterbalanced — the first time this type of arm has been available in a popular priced unit. This feature alone gives the Model 50 particular significance — an automatic in the economy field which can track high quality cartridges for finer sound reproduction



The turntable is oversized; and the handsome mat is reminiscent of previous Garrard models in a considerably higher price echelon.



Model 50 is the most compact multi-speed automatic turntable. Only 6½" in height overall, it will fit where other automatics may not. Sparkling in the new Garrard iridescent color and brushed aluminum, Model 50 will enhance the appearance of any music system.



In automatic position, Model 50 intermixes records of any size or sequence. Two spindles are provided. A convenient short single play spindle is interchangeable with the center drop automatic spindle, removable for safety in handling records.

MODEL 50 COMPARATOR CHART

A **MODEL 50** ☒ **OTHER** ☐

Counterweighted cast aluminum tone arm

B **MODEL 50** ☒ **OTHER** ☐

Lightweight cut away shell, with extended finger lift

C **MODEL 50** ☒ **OTHER** ☐

Tone arm safety catch, for easy portability

D **MODEL 50** ☒ **OTHER** ☐

Automatic intermix operation when desired

E **MODEL 50** ☒ **OTHER** ☐

Handsomely styled unitized control panel with separate positions for manual and automatic play

F **MODEL 50** ☒ **OTHER** ☐

Simple, convenient stylus pressure adjustment

G **MODEL 50** ☒ **OTHER** ☐

Oversized turntable with decorative mat

H **MODEL 50** ☒ **OTHER** ☐

Super sensitive trip with Dupont Delrin®

I **MODEL 50** ☒ **OTHER** ☐

Garrard 4-pole shaded "Induction Surge" motor, with dynamically balanced rotor, shielded from hum. Constant speed assured, free from vibration

J **MODEL 50** ☒ **OTHER** ☐

Decorator styled base — optional

K **MODEL 50** ☒ **OTHER** ☐

Garrard's most compact unit, fits any cabinet

L **MODEL 50** ☒ **OTHER** ☐

Installation is simple. Model 50 is fully wired for stereo, with a 4-pin, 5-wire system utilizing separate connection for ground, to eliminate hum. Leads connect to the changer with a built in Amplok plug (for AC) and a female twin phono socket mounted on the unit plate (for audio). Simply plug in at the player!

Specifications:

4 speeds: 16⅔, 33⅓, 45 and 78 rpm.
100-130 volts, 60 cycles AC (50 cycle pulley available).

Minimum cabinet dimensions:

14⅞" left to right, 12½" front to rear,
4⅝" above and 2⅞" below motor board.



There is a specific Garrard model for your high fidelity system.



LAB 80 Automatic Transcription Turntable \$99.50



TYPE A70 Automatic Turntable \$84.50



AT60 Automatic Turntable \$59.50



MODEL 50 Automatic Turntable \$44.50

In selecting the Garrard model which best meets your requirements, you may depend upon the experience of your dealer. (We publish a list of Garrard dealers and will be pleased to send it on request.) Bear in mind that the purpose of the record playing unit is not only to perform excellently, in conjunction with the other components in your music system . . . but also to protect your growing, valuable library of records. A Garrard is a long range investment . . . built by a manufacturer with 50 years of experience, respected throughout the world for its tradition of integrity. Your Garrard is built for the years, and its performance to your complete satisfaction is assured by a meticulously trained and supervised national authorized service organization, supported by the most complete stock of spare parts in the industry, available throughout the country.



MOUNTING BASES. Decorator styled in Oiled Walnut, or sanded, unfinished . . . with precut mounting boards for all Garrard units.
\$4.45 to \$6.50
(Mounting boards for cabinet installations - \$2.25)



DUST COVERS. Molded from clear vinyl to protect your Garrard from accidents. \$4.95



AUTOMATIC SPINDLES. For 45 rpm records. \$3.80



MODEL SPG3 STYLUS PRESSURE GAUGE. A sensitive, precision gauge which helps to maintain correct tracking force at all times. \$2.95

A wide range of accessories is available, to simplify installation of your Garrard automatic turntable, protect your record library, and add to your listening pleasure.

Prices and specifications subject to change without notice.

Garrard[®]

**WORLD'S FINEST
RECORD PLAYING
EQUIPMENT**



Retain for reference

Garrard, Div. British Industries Corporation, Port Washington, N. Y.

Show is born from 25

after seeing the exhibits, is invited to choose his dream stereo system and answer the question "Where would you buy it?"

"In this way, we hope to get a good, live mailing list," Walter explained. "After the show, we will pull one winner. The manufacturers of the selected equipment will furnish the products and the dealer named on the card will do the installation, all without cost to the recipient."

Actual promotion of the show did not begin until Aug. 15, so as not to hurt what summertime business there might be available this year.

Allegro's business in July was quite poor, and Walter thinks this was generally true of other stores. "We had beautiful weather in July, and that always hurts sales. But August picked up, and we sold more in the first 11 days than in the entire month of July."

In addition to the ticket promotion, dealers will use window banners and in-store posters to help promote the show with their customers.

Hotzner is gratified by the support being given by local newspapers and AM and FM radio stations.

"We had to use diplomacy," he explained, "but we got the two major newspapers, the *Examiner* and the *Chronicle*, to plan special hi-fi sections on the same day, Sunday, Sept. 6. The *Examiner's* roto section was personally handled by Jack Wallace, an audio enthusiast and one of my good customers. The *Chronicle's* section will be part of its *This World* supplement, the most widely read newspaper section in the city.

"Five radio stations are cooperating. KPEN, and perhaps one or two others, will broadcast directly from the show."

On Sept. 9, eve of the show, Northern California will have its first audio industry banquet in the Terrace Room of the Fairmont Hotel. Ernie Heckscher and his orchestra, described by Hotzner as a San Francisco institution, will play for dancing, and there will be award presentations similar to those made last spring in Los Angeles.

Walter is enthusiastic about the show facilities at the brand-new Hilton. It's the type of place where audio equipment can be displayed properly and in the right surroundings, not bare and dismal like the Cow Palace. We will probably have the premier showing of some new equipment, prior to New York. The executive officers of the larger manufacturers are expected to attend, and this should not be underestimated. It's a tremendous

asset for us if show visitors have the opportunity to shake hands with, say, Mr. Fisher or Mr. Scott."

What will the show accomplish for Bay Area stores? Hotzner expects an immediate upsurge in business which "will carry us through Christmas and perhaps until February or March."

If it is as successful as they hope, the dealers plan to fight for an annual fall show on the West Coast. "Of course, we'd prefer an annual show in Northern California," he stated, "but we want it here at least in alternate years. The Los Angeles people are waiting to see if our show is a suc-

cess. If it is, they intend to seek a fall show, too."

When TRADE NEWS asked Hotzner if a formal trade association is likely to grow out of the Northern California Component Dealers, he said: "I hope not. When there's a tight organization, there's a real chance that it will become uncontrollable. And problems have to be submitted to an attorney for analysis before action can be taken. We will get together for dinner once a month and talk over our problems and our goals, and we hope to keep it on that friendly, informal basis."

Stereo to drive your car by

Los Angeles, already probably the most motorized city in the world, offers competing systems for bringing stereo into automotive interiors.

STEREO HAS MOVED to the sports pages and automobile section—at least in Southern California.

Readers of the "sporting" section of the *Los Angeles Times*, especially, get a regular diet of ads from Muntz Stereo-Pak—with assurances that the tape stereo for autos is offered by "The Original Madman Muntz (Not Affiliated With Muntz TV)."

Meanwhile, in the competing *Herald-Examiner* a while back, auto editor Daniel Boone devoted a complete Sunday feature article to Autostereo Corp. Both firms, by coincidence, are in the Van Nuys section of L.A. and San Fernando Valley.

Burgeoning sales, locally and nationally, by both companies would seem to indicate Jim Murphy of Wallichs Music City (May, 1964 TRADE NEWS) was right when he predicted music "outside the home" as a big thing of the future. A difference, perhaps, is that he was speaking of dashboard cartridge players as an adjunct to his then new audio components department.

Spokesmen at both "auto stereo player" plants demurred at the suggestion they might be distributing wholly or even primarily through audio specialists.

"We distribute in various ways, but nobody gets an exclusive franchise from us unless they're with us 100%," Muntz told TRADE NEWS.

He gets his units from Japan, but has an engineering and music duplicating staff of about 50 at the Van Nuys end.

"We're selling them as fast as we

can get them in," the enthusiastic "Madman" added.

His ads offer "Tape Stereo for Auto—\$99.50 Installed." He says he is the originator of the 4-track Stereo Cartridge System. One-hour "factory installation" is promised—for \$10 down. The Muntz ads also claim the world's largest library of popular and classical music—over 9,000 selections.

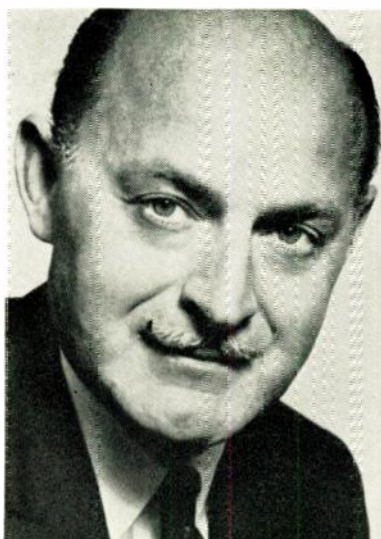
At Autostereo a staff of 70 to 100 actually manufactures the units. And they, too, have their own duplicating department to tape cartridges from master versions. A spokesman said the firm, now over two years old, distributes through reps and to retailers. Unanswered was the query as to whether automobile dealerships were included—but, significantly, the national sales manager for the past year has been C. H. Junge, former operator of four Southern California auto agencies.

Editor Boone's piece in the *Herald-Examiner* explained the ABC's of mobile stereo via tape cartridges (for boats as well as autos, of course.)

It was noted that salesmen frequently like them because they get out of range of good radio programs during cross-country trips. And one national company uses Autostereo equipment in 250 salesmen's cars to give them on-the-road pep talks, product information and a bit of humor and music.

Apparently the latter plan produced results, since the firm was last reported assembling a new library of such cartridges to orient new sales personnel.

hi-fi camera eye



NEW PILOT at Pilot Radio is Sidney Brandt, right, who succeeds Roland J. Kalb as general manager after Kalb resigned as vice president and general manager at Pilot and as group vice president of the parent Jerrold Corp. Kalb has established his own management consultant firm in the consumer electronics field with Pilot as a client.



FIFTH ANNIVERSARY of Fisher Radio's loudspeaker plant in Belleville, N. J., is observed by Belleville Mayor Nuncio Pico, second from right, as he congratulates Avery Fisher. Looking on are Jimmy Carroll, radio-phonograph sales manager; John Burnett, town manager, and F. L. Mergner, vice president, engineering.

OSLO SUMMIT CONFERENCE. Vebjorn Tandberg, right, founder and director of Tandberg Radiofabrikk, and Eric Darmstaedter, president of Tandberg of America, discuss sales and marketing programs for tape recorders and language labs.

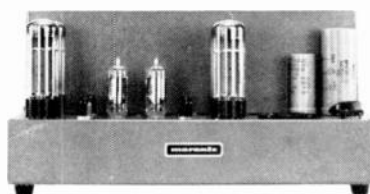


BABY BASS viol, played by Burt Hanson, is showcased on Ed Sullivan's TV program. Scaled down electronic version of conventional instrument is made by Ampeg, with Eastman Chemical Products' Uvex sheet replacing wood.

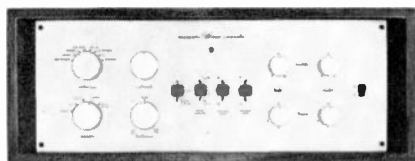




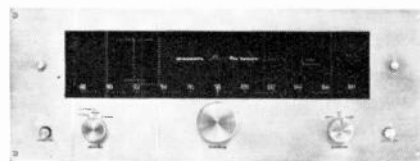
MARANTZ MODEL 9 MONAURAL
TUNER



MARANTZ MODEL 8-B STEREO
POWER AMPLIFIER



MARANTZ MODEL 7 STEREO
PREAMPLIFIER



MARANTZ MODEL 10-B FM/STEREO
TUNER

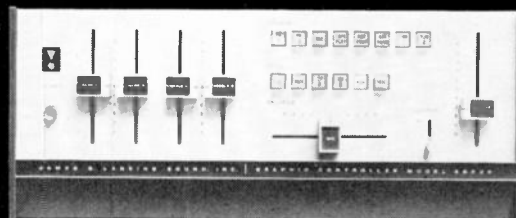
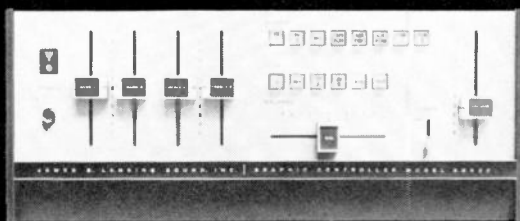
The unequalled quality of Marantz products will never be compromised. Only when the development of solid state electronics has reached the stage wherein its application to FM tuners, amplifiers and preamplifiers can match the dependability and performance of Marantz-designed vacuum tube circuitry will our equipment be transistorized.

Saul B. Marantz
PRESIDENT, MARANTZ COMPANY, INC.

marantz

MARANTZ, INC., SUBSIDIARY OF **SUPERSCOPE** INC., SUN VALLEY, CALIF.

JBL PRESENTS THE SOLID STATE STEREO GRAPHIC CONTROLLER



A TOUR DE FORCE OF CREATIVE ENGINEERING

Straightline controls. Pushbutton selectors. Inputs in front as well as back. Take a look and wonder... *Isn't this the way it should have been done in the first place?* The JBL design staff started fresh. Clean slate. No restrictions, prejudices or preconceptions. With cold objectivity they regarded the functions of a preamplifier/control center, re-evaluated its relationship to a human operator, weighed every conceivable feature. Straightline controls give immediate visual indication of setting. Even from a distance. Direction of movement seems intuitive. Up to increase, down to attenuate. Slide to one side or the other to balance channels. Pushbutton selectors permit instant comparison, switching from one source (top bank) or mode (lower bank) to another without passing through intermediate positions. Pushed button lights up. Controls are so arranged that those most frequently used are most accessible. Human engineering. Front-panel inputs permit sampling and comparing components, connection of portable units without disrupting permanent rear-chassis connections. Front jacks are behind a

flip-down door which also conceals occasionally used facilities such as a headphone jack, fuse, filters, system gain, level and balancing controls. The Graphic Controller includes a 1,000 cycle test tone generator to be used for speaker balancing, placement and orientation. An Aural Null Stereo Balancer accessory provides a very precise means for balancing speakers, and also the two signals from your stereo pickup. Performance-wise—in terms of response, distortion, hum—the JBL solid state Graphic Controller is the finest instrument of its kind you can buy. As has been said of other JBL products, "It's the result of doing everything right." In fact the Graphic Controller is so *right* in every respect, so well built, so well engineered that yours might very well become a family heirloom. There's much more to be said about the SG520. You'll find a complete description in Bulletin SL801-2. Write for your free copy and the name of the Authorized JBL Audio Specialist in your community.

The Graphic Controller is designed, engineered and manufactured by.

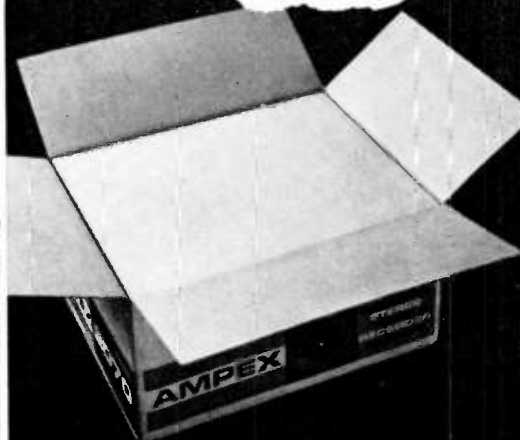


JAMES B. LANSING SOUND, INC., LOS ANGELES 39, CALIFORNIA

Nice carton... good stock. Hmmm... two color printing. Pretty impressive. But let's open it.



Cardboard cover... guess that keeps things from bouncing around.



Hey, now! Some dust cover. Looks real solid. Get the way the logo is made—that's class.



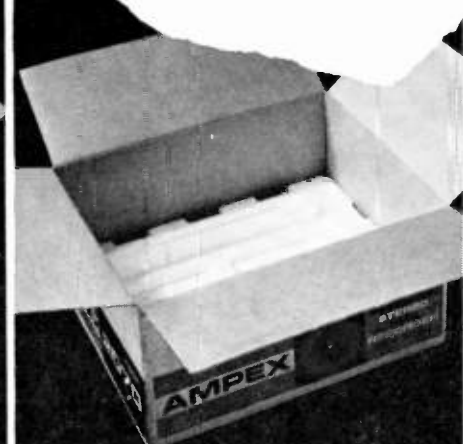
Say... molded polystyrene packaging, too. Wonder what's in the black pouch? Oh... a microphone... a good one too. Figures. How about the fancy box? I see... that's the Owner's Kit. Oh—the usual operating manual... the usual warranty. Wait... that warranty's for one whole year for *all* parts and *all* labor. I'm impressed. And what's this? A stereo demonstration reel of tape... and a complete reel of Ampex blank tape. That's clever! Once you get the unit, you're all ready to go.



Now—let's just lift this polystyrene packing. Here it is... the machine. Boy. It really has style. Get this... the unit sits in a polystyrene bottom. That's packaging!



They must mean it when they say that they assume the responsibility to deliver a machine that works, or else they'll replace it within 96 hours. But what a laugh. The way they package these units, an earthquake couldn't damage them. It probably costs them about eight dollars alone *just* to package it.



It does, Mister. But that's the way we like to do things at Ampex. Keeps us happy. Your customers happy. And you, too.

The new world of tape turns on Ampex

AMPEX

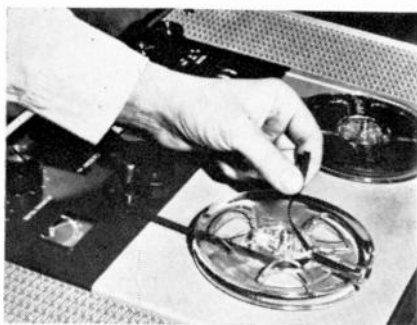
Ampex Corporation, Consumer Products Division, 2201 Landmeier Road, Elk Grove Village, Illinois 60007, Telephone: 312 437-5800.

To help you sell

Kodak 5"-er upgraded

A five-inch Thread-Easy Reel, that can be threaded in a single motion simply by drawing the tape through a slotted flange, has been announced by Eastman Kodak. The new reel will replace the standard reels now used on five-inch Eastman tapes and will also be available in a box without tape for use in editing or as an extra take-up reel.

The new reel incorporates all of the features of the seven-inch Kodak



Thread-Easy Reel: a slotted flange for easy threading, a built-in splicing jig on both flanges for on-the-reel splicing, index scale for logging recorded material, write-on panels, and sturdy, one-piece, molded construction.

F-M blisters intercoms

Fanon-Masco has announced a line of intercoms that are packaged for the general public. New product concepts and merchandising methods have also been devised to capture the large sales potential presented by the high traffic in mass retail outlets. Colorful new blister display packages, which create the "need" for an intercom, have been designed for in-store pegboard display and require minimal store personnel contact to make the sale. New counter and floor display (self-merchandisers) are also offered by the company to promote the sale of intercoms, walkie-talkie, and other equipment.

New in its sales concept is the new Model BL-ES-13 DOOR Intercom. Called the "Entry-Sentry," the system



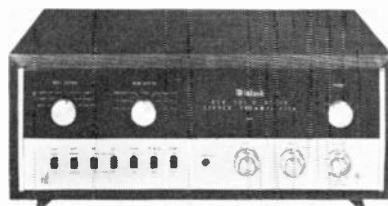
sells the idea of home safety and protection of household from strangers at the door. Consisting of a master station for inside the home and remote station that is mounted outside the door, that unit is aimed at home owners and new home builders. The two-station system is offered at a list of \$23.50; extra remotes for \$6.00.

Two other new blister display packaged intercoms are also offered. One is an economy two-station system designated BL-1300 and is promotionally priced at \$22.50 list. The other is a new two-station "wireless" intercom system that plugs into any standard wall outlet, without permanent installation. Designated Model BL-1340, the two units list for \$49.95.

Displays, banners, consumer folders and a special retail newspaper advertising program has been readied by the company for the trade. Complete details can be had by contacting a Fanon-Masco sales rep or by writing direct to 439 Frelinghuysen Ave., Newark, N.J. 07114.

McIntosh prints brochure

The new C 24 solid state preamplifier is the subject of a 4-page brochure from McIntosh. Using the bat-



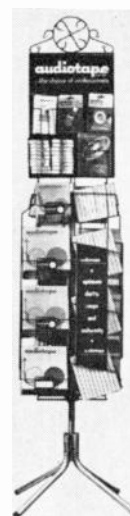
tlecry, "99.9% perfect," based on the figure of 0.1% distortion (20 to 20,000 cps) at 2.5 volts output, the bro-

chure is packed with sales points. For those who like to see specifications, there is a whole page of them.

Of greater sales appeal for some customers may be the operation manual for the C 24. Even a quick glance will convince the reader that this is a most unusual piece of equipment. The operation manual, incidentally, contains the same page of specifications; but, in addition, it has a great many detail pictures, showing connections and control settings.

A. D. offers "rack deal"

\$100.70 in free merchandise and a two-month payment plan is offered to distributors in a new Audiotape rack deal. The basic package consists of 130 reels of Audiotape in best-selling types and sizes, 19 empty 7-inch Audiotape C-slot reels and 5 Audio splicing tapes—all totaling \$299.90, distributor net. The "free bonus package" merchandise that distributors receive with the purchase of the new deal



consists of 10 reels of Audio Triple Recording, 10 copies of the *How To Make Good Tape Recordings* handbook and 1 revolving display rack—totaling \$100.70. This means distributors make a 55% profit when the merchandise is sold at current dealer prices.

An option package, consisting of 60 reels of Tape-a-Letter, is available to those distributors who do not need the rack. The Tape-a-Letter tapes consist of plastic, re-usable, self-mailing tape containers with 150 feet of 1½-mil Audiotape on 3-inch reels. The revolving display rack comes equipped with a slip-in card, which can be imprinted with the distributor's store name to personalize the rack.

(Continued on page 121)

HIFI/Stereo Review

June, 1964

"...the designers of the E-V TWO were aiming for a smooth, uncolored sound, and they have succeeded very well. Overall the E-V TWO is a very smooth and musical reproducer."

Radio-Electronics

February, 1964

"In brief, the E-V TWO's produce a quite spectacular sound with a big, low-down bass...that is the best, to my ears, that Electro-Voice has yet produced."

POPULAR SCIENCE

June, 1964

"They effortlessly fill my large listening room with clean, well-balanced sound."

© 1964, Popular Science Publishing Co., Inc.

AUDIO

April, 1964

"...the Electro-Voice Model SIX is as close in sound to a Patrician as one can come without being a Patrician. You listen."

high fidelity

April, 1964

But whatever one's personal listening tastes are, it would seem there is an E-V model to suit them."

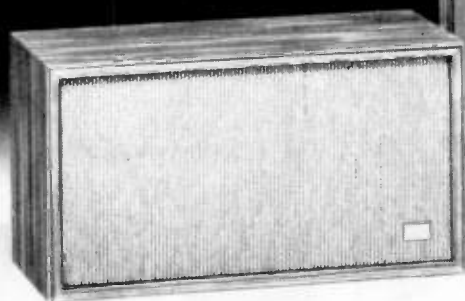
"Reproducing test tones, the Model SIX was found to have a remarkably smooth, clean and uniform response across the audio range!...

The American Record Guide

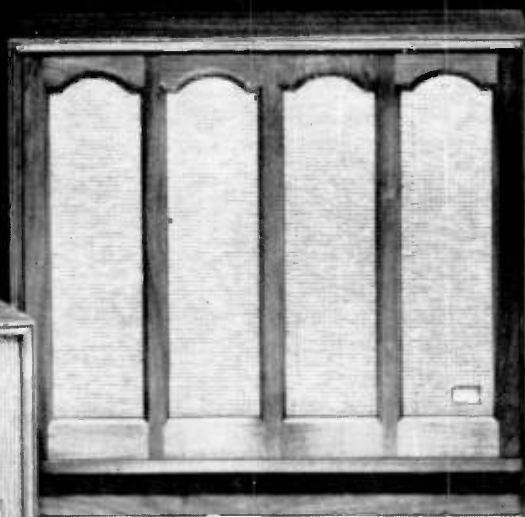
December, 1963

"(I) have found them to be smooth and easy-to-listen-to...I found the top end very smooth and silky, not overbright, and also it extended well beyond the 15-kc. claim of the manufacturer."

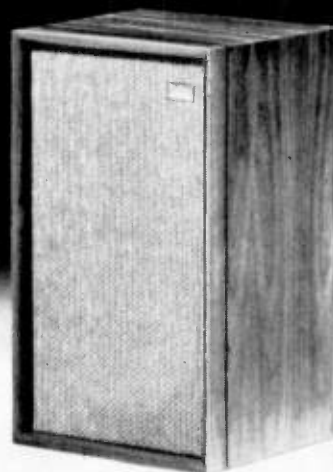
If Speakers Could Blush, Ours Would!



E-V TWO
\$120.00



E-V SIX
\$297.00



E-V FOUR
\$151.87

Read what the critics say about the new E-V TWO, E-V FOUR and E-V SIX acoustic suspension speaker systems. Then conduct your own impartial listening test. For a complete set of review reprints, plus the name of your nearest franchised E-V hi-fi showroom, write us today.

Great products! Enthusiastic critical acclaim! Powerful advertising support!
Three more reasons why the Electro-Voice franchise is the most important
in high fidelity. Your E-V rep is anxious to tell you more. Listen!
ELECTRO-VOICE, INC., Dept. 944B, Buchanan, Michigan 49107

Electro-Voice®
SETTING NEW STANDARDS IN SOUND



The Inside Story of Koss and Rek-O-Kut

As you probably know, John Koss, popular president of Koss Electronics Inc., has purchased control of Rek-O-Kut Co. Inc. The following interview with Koss and Rek-O-Kut sales vice-president, Hal Dennis tells you of the plans and policies you can count on from the aggressive, new Rek-O-Kut Co.

Reporter: Mr. Koss, Why do you think Rek-O-Kut will be successful under your leadership?

Rek-O-Kut has one of the oldest and finest names in our business. The company has always made an excellent quality product. It still does. But it is very hard to make headway while in financial difficulty. New capital and new management will solve that problem.

Reporter: Don't you feel that the turntable market is dwindling?

I sure don't! There is absolutely no question that a turntable is a superior piece of record playing equipment. It is gentler to records, quieter, and the arm and cartridge tracks better. Most changer owners don't stack up 10 records anyway. There is always a place in the market for a superior piece of equipment . . . and Rek-O-Kut turntables are a superior line.

Reporter: Mr. Dennis, what do you think will be the most important factors that make for Rek-O-Kut success this year?

I think the component high fidelity dealer is our key. He is doing a fine job of merchandising components. He, above all, understands the meaning of "turntable quality" and he doesn't like to sell equipment that isn't the best. I feel certain that with his help, we can attain mutual success.

Reporter: Mr. Dennis, do you plan any changes in the Rek-O-Kut line?

We already have a line of five turntables and three tone-arms including the popular new R-34 turntable at \$89.95. Our line is well designed and manufactured in all price brackets. I don't think we need any change at present.

Reporter: Mr. Dennis, what are your plans for 1964-65?

We'll be backing dealers with an increased national advertising program and a complete array of merchandising aids. We'll use every opportunity to help them sell. Dealers like to sell the best equipment they can; and they can move a lot of quality turntables at \$89.95. And they can count on our 1965 merchandising program to help them do it.



SALES OFFICE: 2227 N. 31ST • MILWAUKEE, WIS.



ONLY ALL-TRANSISTOR STEREO AMPLIFIER BACKED BY 5 YEARS OF LEADERSHIP IN SOLID-STATE CIRCUITRY!



ALTEC ALL-TRANSISTOR

360A

PLAYBACK STEREO AMPLIFIER

"Professionals in the recording and broadcasting industries know that Altec has been making solid-state amplifiers for some time now—for professional use only. The 360A reflects the experience Altec has achieved in making these amplifiers."

AUDIO Magazine, April, 1964

There's many a slip between the designing board and what your customer will find when he gets his unit home. Never has this fact been more amply demonstrated than in use of solid-state circuitry for quality music reproduction, where years of experience in designing and manufacturing with tricky transistors are the exception, not the rule.

It makes sales sense to factually tell your customers that the 360A is the *only* such component proved in the store and in the home for more than a year, and backed by five full years of experience in solid-state circuitry. Check this list of facts that only an Altec distributor can tell his customers:

- The Altec solid-state 360A Amplifier is available for delivery now, and has been available for over a year, so you may be sure it is free of bugs.

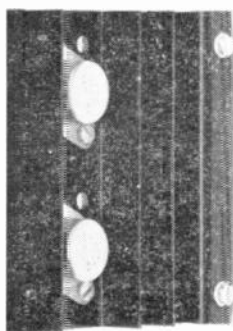
- The 360A offers excellent quality and reliability because Altec has more than five years experience in designing solid-state circuitry for audio frequencies. In fact, Altec was the first to design an all-transistor amplifier (the 351B) for high quality applications and also developed the first successful all-transistor repeater amplifiers for use by telephone companies. Altec was also the first to combine transistors with vacuum tubes in the famous 708A "Astro."

- The all-transistor circuitry of the 360A offers greatest possible durability because, unlike heat-generating vacuum tube amplifiers, it always runs cool. Hence, there's no deterioration of quality caused by heating and cooling of vital circuit components.

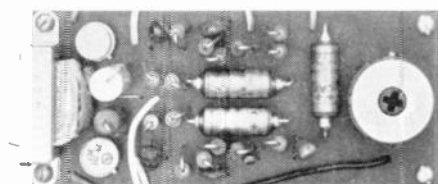
- (With its cover off, show the circuitry of the 360A to the customer. Important points are shown in the pictures at right.)

- The 360A is a genuine Altec **PLAYBACK** Component. It is part of a line that has won acceptance for use by leading recording and broadcast studios. There's a world of difference between equipment designed for and used by professionals, and ordinary hi fi components made strictly for home use. (You can readily prove the acceptance Altec enjoys among professionals by pointing to the pictures at far right of the 360A in use. Many other "case history" photos are in the Altec catalog, **PLAYBACK** Equipment for Recording & Broadcast Studios.")

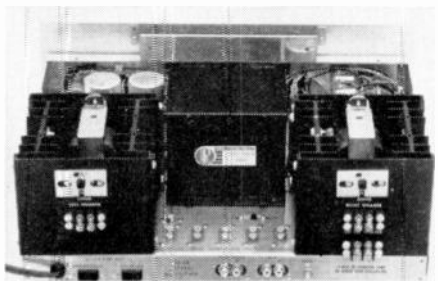
- Point out that the 360A comes in the smallest size package of any integrated stereo amp/preamp on the market today.



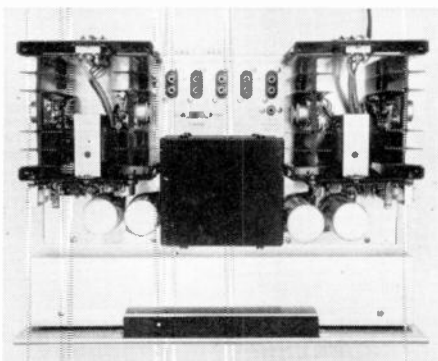
Four extra-heavy heat sinks in Altec 360A make possible non-continuous operation with virtually no rise in temperature. Internal-external heat is kept well below industry standards to guarantee lifetime trouble-free, service-free operation. Two power output transistors (four per channel) on each heat sink.



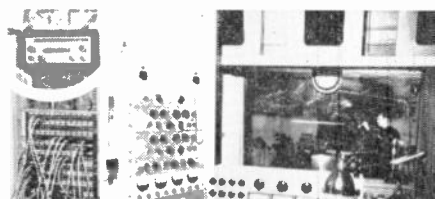
Modular preamplifiers are completely shielded from output and power circuits to assure long life, minimum maintenance. Another Altec exclusive!



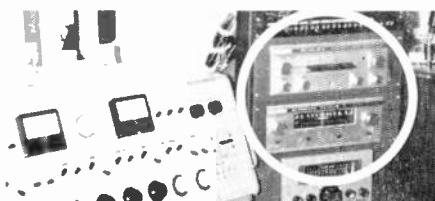
Plug-in facilities provide independent voltage output to drive separate remote power or booster amplifiers (Altec all-transistor 351B) for patio, poolside, recreation room, other remote areas. Impedance selector switch, eliminates customer confusion about multiple speaker terminals.



Top view of 360A. All-transistor circuitry eliminates hum and hiss common with vacuum tube amplifiers. Features 3 automatic resetting circuit breakers—one in main power circuit, one in each speaker output circuit.



The 360A is used by Dave Sarser's and Skitch Henderson's famous "Studio 3" in New York.



Perfect partners! Rack-mounted Altec 360A works with Altec 314A Emperor Royale FM Multiplex Tuner at Sim-O-Rama Sound Recording Studio, N.J.



The film production service at Virginia State Department of Education relies on the 360A for power in conjunction with other Altec **PLAYBACK** amplifiers and controls.

In addition to the above, be sure to mention some of the other studio-users of Altec **PLAYBACK** Equipment: Capitol Records, ABC, Universal Recording, Columbia, Sam Goldwyn, Glen Glenn, United, Walton, and just about every major concert hall, auditorium, and theatre in the nation, including all Cinerama Theatres. Top that off with a list of exhibitors at the New York World's Fair who selected Altec equipment: IBM, DuPont, Chrysler, Ford, General Electric, Heinz, Cinerama, Billy Graham, Texas Pavilion, Johnson's Wax, and many more.

Don't let good sales go by—find out right away about Altec **PLAYBACK** equipment and the unique sales tools available only to Altec Distributors. Write Dept. TN-9,



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A Subsidiary of
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ANAHEIM, CALIFORNIA

How to lease without loss

If you have a new lease coming up this fall
(and even if you don't) this twelve-point primer
can help you to protect your business investment.

by H. E. Carroll

MANY PITFALLS lie concealed in the small, black print of a legal lease agreement. And dangers lurk in the words that are written in (or omitted from) the open spaces of the lease.

Here are a dozen points to consider when you sign your next lease agreement to avoid loss:

1. Get best type of lease

The decision of the type of lease may not be yours to make for the location you want for your business. The landlord may want or demand a flat rate or a percentage type lease. If you have an opportunity to make a selection, you will want to consider these points about the type of lease:

Flat Lease: Your rent will remain the same during the total term of your lease. Regardless of whether business is good or bad you will have committed yourself to a certain monthly payment for rent. It makes it easy to budget your rent expense, but the percentage may be high or low depending on your sales volume.

Percentage Lease: In theory these leases go up or down as your sales volume changes. In practice, however, there is usually some minimum guarantee of rent. Then, as volume exceeds a certain point, the percentage figure comes into play. Your own efforts to build volume—better selling and increased promotion—will raise your rent.

2. Lease for reasonable time

Signing a lease for a 99-year period might be a very wise investment—and it might serve as the death-knell for your business. A flat rent lease signed when rents are low can give your profit insurance for the future . . . if rents advance. On the other hand, a long-term lease may overlap a change in the business cycle and you will be paying a great deal more rent than your competitors are on a lease renewal or with a new lease.

Negotiating a new lease every year or two is not good. To make future plans for the growth and development of your business, you need some assurance for the future. You will find that a lease term of from 5 to 15

years will be best if it can be negotiated at a proper rental and with protective provisions.

3. Have renewal option

During a lease term of 5 to 15 years, you will have invested considerable money in building up your business. Your advertising will have stressed your location and you may have made some improvements to the property that you plan to write off over a fairly long period of time. You feel certain that when it is time to renew, your landlord will give you a new lease at agreeable terms.

Unless you have your option for renewal in writing as a part of your lease, you may find yourself in trouble. Another firm may offer your landlord more rent and you may find yourself without a lease. Or, your landlord may demand a much higher rent than you have been paying.

You do not have to exercise the option—it will say that if you want to renew it for a similar period of time, you will pay a certain amount. It ties the landlord's hands and gives you protection without much obligation if conditions change when it is time to renew your lease.

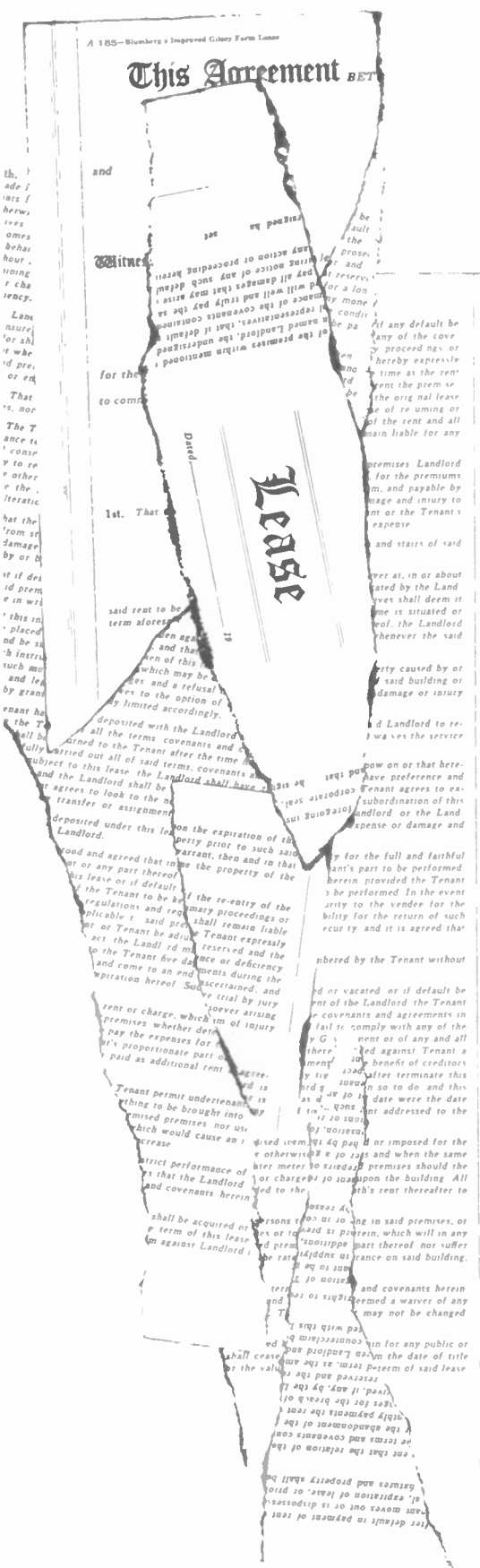
4. Don't limit lines

Standard lease forms available in most stationery stores have one provision that should be carefully considered. This section reads: "That the premises are to be occupied as a . . . and for no other purpose whatsoever." The blank space is often completed in general terms that may seem adequate at the time.

At some later time you may add some other line that your landlord could consider a breach of your contract. He might be able to break the lease in court or obtain a court order stopping you from selling the new line.

5. Spell out services

In negotiating a new lease for your building, you may point out that you think the building should be painted. The landlord is in a magnanimous mood and says he will re-paint. Then,



THIS LEASE FORM is one of many standard versions available from stationers. Hidden among its clauses are words, specified or left unspecified, that can make this the most expensive piece of paper you own.

after the lease is signed he changes his mind.

You should have this promise for repair or modernization in writing. Even though it is not a part of the actual lease, if you have a letter from your landlord stating that he will make the requested improvements you will be protected.

6. Include property description

Your landlord will have a legal right to take over any part of the property rented if it is not completely described in your lease agreement. Just mentioning the street and number of the property may cause trouble. Be sure you include all property included in the rental-warehouse, parking lot, basement, etc.

7. Allow for subleasing

When you sign your new lease agreement, the idea of selling your business may be the thought most distant from your mind. But, six months later conditions change—interest, health, finance, etc.—lead to the importance of selling your business.

In the standard lease form there is often a paragraph that prohibits subletting privileges. Have this section removed from the lease to protect yourself in the future. It may be possible that you can sell your business at a later date and make a profit on the rent you charge the new tenant over what you are paying on your lease agreement.

8. Stipulate occupancy date

This problem does not develop when you are negotiating for the renewal of your lease. But, when you make plans to move to a new location, you want to be sure that there is some understanding of when you will have possession of the property. When this provision is included in your lease, you will receive damages of three times your daily rental if the landlord does not make the property available to you on the agreed-upon date. That can save lost business or the inconvenience of delay.

9. Check termination

When you move, you may find that your old lease entails expenses you did not anticipate. For instance, you may have made some alteration of the property at your own expense. When you leave, your landlord may demand that you return the property to its original condition.

Many leases have this clause: "Return the premises at the end of the lease in good condition reasonable

(Continued on page 119)

Tapes for demo to help you sell

by Edwin S. Bergamini



Numbers in reviews refer to approximate footage on the footage counter.

COATES: *London Suite*. **VAUGHAN WILLIAMS:** *Greensleeves, Fantasia on a Theme of Thomas Tallis, English Folk Song Suite*. **Morton Gould, Orch. RCA Victor FTC 2164, \$8.95.**

This is first-rate stereo sound—close-up, well spread, intimately miked for instruments, and with a controlled liveness. The Vaughan Williams *Tallis* (A 195) uses a string orchestra on each side, string quartet in the center (a printed seating diagram would be welcome in special cases of this sort); the other selections have standard symphony orchestra seatings. The best of tape sound always glorifies strings in big singing passages, and there's nary a harsh note here in the great Vaughan Williams paean—it glows anew with each hearing. The lovely *Greensleeves* miniature offers flute and harp recorded with particular beauty. For a striking demo-piece the finale (B 267) of the high-stepping Vaughan Williams folk-song suite is unbeatable.

CHAVEZ: *Piano Concerto*. **Eugene List, piano; Chavez, Vienna State Opera Orch. Westminster WTC 171, \$7.95.**

This music is less brightly colored stuff than, say, the scores of Chavez's late countryman Revueltas. Your customers who think Mexican music is all like "La Paloma" will be shocked, at this concerto's starkness. But there's deep feeling in a sonic aura devoid of false coloration, in the slow movement, which opens the B sequence; we suspect thoughtful folk will be drawn to this music, and to the lively finale, spiked with drums-and-rattle percussion. Piano tone: very good, while not quite top-drawer for demo. In our copy, the right channel was louder than the left.

RAVEL: *Scheherazade*. **BERLIOZ:** *Les Nuits d'été (Summer Nights)*. **Regine Crespin, soprano; Ansermet, Orchestre de la Suisse Romande. London LCL 90078, \$7.95.**

Coming hard on the heels of RCA Victor's *Nuits d'été* with Leontyne Price and Reiner, Regine Crespin and Ansermet go farther in sheer intensity of ardent loveliness. The newer recording, too, exceeds the other in

warm richness and a subtle depth; too bad the Berlioz is here broken between tape sequences. Any one of the six songs is demo material; most outstanding, perhaps, is *Sur les lacs* (B 215). Ravel's *Scheherazade*, three languorous poems bathed in a suave shower of sounds, is equally well served by the engineers, and appears for the first time on four-track tape.

BRAHMS: *Symphony No. 1*. **Leinsdorf, Boston Symphony Orch. RCA Victor FTC 2181, \$8.95.**

"The way a big orchestra should sound" is the first thing to say about the latest Brahms First Symphony to be issued on four-track tape (there are six currently available). For sound, it shares honors with the recent London issue of Ansermet. The wide dynamic range impresses, as does the well detailed miking of solo instruments, such as winds. Even if the final clarity-perfection is lacking, the aura of great orchestra in great hall (Symphony Hall, we imagine) surrounds every note. And while the "ultimate" interpretation of this symphony has yet to appear, Leinsdorf molds it knowingly, moves it with considerable force.

HANDEL: *Three Coronation Anthems: Ode for the Birthday of Queen Anne*. **Soloists, A. Deller cond. Oriana Choir and Orch. Vanguard VTC 1686, \$7.95.**

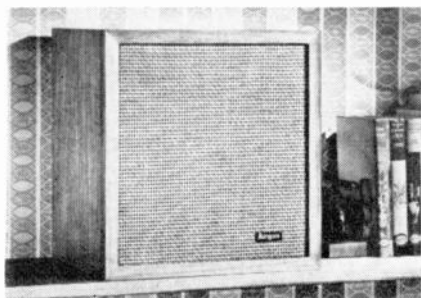
This tape is among the best for a top demonstration of small chorus and orchestra in stereo. High strings and voices are left, low ones right, trumpets right center rear, and tympani left center rear. The second coronation anthem, "The King Shall Rejoice," is a good example. The longer "Ode," occupying the other sequence, has a curious stereo problem: high strings somehow "lean" to the right from their proper place left of center, and the choral body "leans" left, rather than being spread evenly across the area between speakers. The crisp, small-scaled performances should be liked by Baroque buffs; even if they may disappoint those who like massed *Messiah*-type choruses for Handel.

(Another review on page 126)

Products from 37

Argos makes bookcase

Measuring 12-3/8" wide, 13-3/8" high and 10" deep, the Argos TX-5 is designed to represent an excellent value in high fidelity reproduction. The high efficiency Argos 8-ohm system features an 8" woofer and 3 1/2" tweeter, crossover network, and tube-vented acoustical construction. Overall frequency response is listed as 50 to 17,000 cycles. Speaker terminals are brought to a screw terminal



strip which is marked for proper stereo phasing. The oiled, hand-rubbed walnut enclosure has a contemporary cane grille. The audiofile net price of the Argos TX-5 is \$32.50 and the systems are also available at a "stereo-pair" \$59.00 for two.

Unicorder revamped

American Gelooso has introduced a new model Unicorder 61 tape recorder. It is a 5-lb., 6-transistor portable that includes a built-in synchronizer for home movies.

It operates on penlight batteries or on AC without any accessory adapter.



It features connections for remote speakers (in addition to built-in monitor), a meter to indicate recording level and battery condition. It is supplied with a microphone having a remote switch, earphones, a reel of tape and a takeup, 10 long-life manganese batteries and a carrying case, for a selling price under \$150.

(More products on page 113)

AUDIO IN PRINT:

A roundup of audio topics the public will read in Sept.

Electronics World

THE LAHTI U-2 Speaker System, reviewed by Hirsch-Houck Labs for the September *EW Lab Tested*, has an 8" woofer and a 3" cone tweeter to provide an over-all frequency response from 95 to 15,000 cps ± 5 db. According to the report, "The test data indicates that this is a fine little speaker and listening tests confirm this beyond any doubt. It has a superbly balanced sound, not favoring either end of the spectrum, and without any peakiness or the boxy sound which often plagues very small speaker systems (and some larger ones as well)."

The second item tested is the RCA SK-46 velocity microphone which "provides exceptionally smooth and flat response with ± 4 db from 22 to 10,000 cps. . . . We made tape recordings with the microphone, comparing the sound to that from other comparably priced dynamic microphones. It has a pleasingly clean, natural sound, with no detectable coloration as long as the sound source is a foot or more from the microphone . . . it is an excellent-quality ribbon microphone, with sound quality comparable to that of any microphone in its price class as well as to many more expensive microphones.

High Fidelity

THE SEPTEMBER ISSUE of *High Fidelity* Magazine takes a hard look at distortion, which remains a problem despite the continued refinement of component gear. In *Distortion—the Eternal Enigma*, Albert Sterling discusses some of the types of waveform distortion that still must be eliminated in components before the ideal goal of perfect linearity is reached.

The *Newsfronts* page this month tells the story of Repeat Records, a company recently formed by engineer Lester M. Barcus and violinist John Berry for the express purpose of making recordings without microphones. By using specially designed instruments each supplied with its own transducer, the Messrs. Barcus and Berry eliminate conventional mike

setups and claim to capture the true fidelity of the instruments. Ambient studio sounds are of course completely eliminated.

The September *Equipment Reports* evaluate the H. H. Scott 4312 tuner, Empire 880P cartridge, Health AA-22 integrated amplifier kit, and Sony 600 tape recorder.

Music articles in September include Shirley Fleming's "The Case of the Disappearing Strings"—which explores the whys and wherefores of the growing shortage of professional string players. An article on the conductor William Furtwängler, by Alan Rich discusses the many Furtwängler recordings (mostly DGG and Odeon) that have been issued posthumously in the ten years since his death. Feature record reviews spotlight the Price/Karajan *Carmen* (RCA Victor), the Richter/Rostropovich Beethoven Cello Sonatas (Philips). *The Play of Herod* (Decca), and three new versions of the Beethoven *Choral Fantasia* (Westminster, Columbia, and Monitor).

HiFi/Stereo Review

IN THE SEPTEMBER ISSUE, *Hi-Fi Stereo Review* inaugurates a distinguished biographical series: *The Great American Composers*. The editors devote a major portion of this issue to the first article of this series, David Hall's *Charles Ives: An American Original*. The series will contain profiles-in-depth of such major contemporary figures as Virgil Thomson, Aaron Copland, Samuel Barber, Roger Sessions, and William Schuman, and will re-examine provocative figures out of the American past—William Billings and Louis Moreau Gottschalk.

Also in the September issue, Julian D. Hirsch, *Hi-Fi Stereo Review's* regular audio equipment tester-reviewer, goes about *Separating Hi-Fi Essentials from Hi-Fi Frills*. In this article Mr. Hirsch offers some informed tips on how to get maximum sound quality from your hi-fi dollar. Shoppers often place more trust in published
(Continued on page 85)

No other solid state stereo tuner/amplifier kit has EICO's \$500-\$600 quality...



and looks it. (for only \$229⁹⁵)

Introducing the new 3566 all transistor F.M. MPX Stereo Tuner/Amplifier. Designed throughout to the quality level of the costliest Tuner/Amplifiers on the market.

SUPERIOR TRANSISTOR SOUND: Perfect deep bass fidelity, the clarity and detail of exactly reproduced transients... the sweet, airy quality achieved with extremely low distortion and extended frequency response. Plus plentiful reserve power for orchestral crescendos (even with inefficient speaker systems)—all against a velvet quiet background: This is the new transistor sound that is taking over in high fidelity... This is the sound of the superior new EICO 3566.

UNSURPASSED FM STEREO TUNER PERFORMANCE: Entirely new FM "Front End" and 4-Stage IF Strip with wideband ratio detector, developed only after the practical requirements of optimum FM Stereo performance were established by experience with earlier transistor designs in the field... Achieves **Minimum Bandwidth Variation with signal level** for consistently high quality reception regardless of signal strength... **Handles even abnormally strong signals without overloading** (a strong local signal won't "blanket" the dial)... **Unsurpassed usable sensitivity** with only slightly more signal required for full 40db quieting. **Time-switching** transistor multiplex circuitry, incorporating separation and balance adjusts, achieves outstanding 38db channel separation... completely effective filtering of all types of interference. Noiseless, purely electronic **Automatic Switching** between FM Stereo and FM Mono (controlled by the pilot frequency in stereo broadcast signal), with defeat. **Stereo Indicator Light** gives instantly visible indication of stereo broadcasts... **D'Arsonval tuning meter** gives exact center-of-channel tuning indication... **Adjustable-threshold interstation noise muting** gives you silence between stations while tuning, and infallible stereo program indication. Convenient Muting-Off Switch for weak station reception... **Exactly right AFC pull-in range** permits you to tune in stereo stations accurately with ease. Convenient AFC-Off switch for tuning in weak stations.

UNSURPASSED STEREO AMPLIFIER/PREAMPLIFIER PERFORMANCE: Entirely new amplifier/preamplifier circuitry, designed with the highest performance objectives. **Phenomenally low noise, low distortion RIAA** phono preamplifiers with maximum overload resistance. **Low distortion, variable inflection feedback tone controls** permit boost or cut at the extremes of the range without affecting mid-range response or the volume level. Isolated from power amplifier by buffer stages to eliminate loading distortion. **Unique, very low distortion drive of power amplifier output stages**, plus 36db of overall feedback to reduce distortion to an inaudible level. **No output transformers**—giving unrestricted bass response and eliminating transient distortions normally occurring due to output transformer characteristics. **Fast-acting instrument fuses** provide full protection against accidental shorting of speaker leads.

SIMPLIFIED KIT ASSEMBLY: You wire only non-critical audio and power supply circuits, mostly on military-style terminal boards for easy check-

out... FM "Front End," 4-stage FM IF strip, and entire multiplex circuit pre-wired and pre-aligned... Transistor Sockets eliminate risk of transistor heat damage... **This kit can be recommended to beginners!**


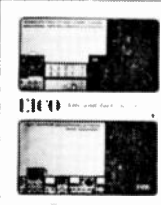
CONTROLS: Input Selector, Mode (incorporates FM stereo defeat), Volume, Balance, Bass, Treble, Loudness Compensation, Muting-off, AFC-off, Power on-off. **INPUTS:** Mag. Phono, tape, auxiliary, 300 Ω antenna. **OUTPUTS:** left and right speakers, tape, headphones. **INDICATORS:** Illuminated tuning dial, tuning meter, stereo program indicator light. **FUSES:** Line, Left Speaker, Right Speaker, SIZE (HWD): 5 x 16 $\frac{1}{2}$ x 13 $\frac{1}{4}$ inches.

AMPLIFIER/PREAMPLIFIER SPECIFICATIONS: POWER: 66 watts total IHF music power output. IM DISTORTION: 2% at 30 wpc (watts per channel); 1% at 25 wpc; 0.3% at normal listening level. **IHF POWER BANDWIDTH:** 20-20,000 at 25 wpc, 0.5% harmonic distortion. **HARMONIC DISTORTION:** 0.16% at normal listening level. **FREQUENCY RESPONSE:** \pm 1db 10-60,000 cps. **HUM & NOISE:** 70db below 10mV on mag. phono; 70db below rated power on other inputs. **SENSITIVITY:** 3mV on mag. phono, 180mV on other inputs. **SPEAKER CONNECTIONS:** 8-16 ohms.

FM MPX STEREO TUNER SPECIFICATIONS: SENSITIVITY: 2 microvolts for 30db quieting (IHF Standard), 2.7 microvolts for 40db quieting. **IHF HARMONIC DISTORTION:** 0.5%. **CHANNEL SEPARATION:** 38db. **FREQUENCY RESPONSE:** \pm 1db 20-15,000 cps. **IHF SIGNAL-TO-NOISE RATIO:** 60db. **IHF CAPTURE RATIO:** 4.5db. **IMAGE REJECTION:** 50db. **IF & SPURIOUS REJECTION:** 80db. **SCA REJECTION:** 40db. **38 KC SUPPRESSION:** 55 db. **19 KC SUPPRESSION:** 45db.

EICO 3566 also available factory wired (includes oiled walnut cabinet; \$349.95... optional oiled walnut cabinet for kit \$9.95.

Visit the EICO exhibit in the Pavilion of American Interiors at the World's Fair.

HFT 9	
 EICO Electronic Instrument Co., Inc. 131-01 39th Avenue, Flushing, N.Y. 11352	
Please send 1964 Catalog	
Name _____	
Address _____	
City _____ Zone _____ State _____	
	

What's on the agenda?

DATE	SEPTEMBER 10 - 13	SEPTEMBER 12 - 20	SEPTEMBER 25 - 26
EVENT	San Francisco Hi-Fi Show	Radio & TV National Show	3rd Canadian Symposium on Communications
PLACE	San Francisco Hilton San Francisco, Calif.	Milan, Italy	Queen Elizabeth Hotel Montreal, Que., Canada
CONTACT	Institute of High Fidelity 516 Fifth Avenue New York, N.Y. 10036	Radio-TV National Show Via Donezetti 30 Milan, Italy	P. Bourbonnais Hydro-Quebec 75 Dorchester Blvd. W. Montreal, Que., Canada

OCTOBER 1 - 4 (Dealer Day Sept. 30) New York High Fidelity Show Trade Show Building New York, N.Y. Institute of High Fidelity 516 Fifth Avenue New York, N.Y. 10036	OCTOBER 1 - 6 Television-Music Show Show Mart Montreal, Que., Canada Ind'l. Trade Shows of Canada 481 University Ave. Toronto 2, Ont., Canada	OCTOBER 2 - 8 U. S. Exhibition at the Stockholm Technical Fair Stockholm, Sweden Bur. of Internat. Commerce Code 8100 U. S. Dept. of Commerce Washington, D.C. 20230	OCTOBER 5 - 7 10th Annual Communications Symposium Utica, N.Y. R. F. Weil RD 3 Lake Delta Rome, N.Y.	OCTOBER 12 - 16 AES (Audio Engineering Society) Convention Barbizon-Plaza Hotel New York, N.Y. Dr. Daniel W. Martin Hydro-Quebec 1801 Gilbert Ave. Cincinnati, O. 45202
OCTOBER 12 - 16 AES (Audio Engineering Society) Exhibit Barbizon-Plaza Hotel New York, N.Y. Miss Jacqueline Harvey 124 E. 40th St. New York, N.Y. 10016	OCTOBER 14 - 16 1964 Sonics & Ultrasonics Symposium (IEEE) Miramar Hotel Santa Monica, Calif. A. H. Meitzler Bell Telephone Labs Murray Hill, N.J.	OCTOBER 16 - 18 Denver Stereo Hi-Fi Music Show Winters Manor Hotel Denver, Colo. Norman J. Murfield & Assoc. 7930 Maria St. Westminster, Colo.	OCTOBER 16 - 18 Houston Hi-Fi & Stereo Show Lincoln-Sheraton Hotel Houston, Texas Mr. Robert Shackrough AMS Advertising Agency 901 Century Bldg. Houston, Texas	OCTOBER 17 - 25 International Fair of Modern Electronics Ljubljana, Yugoslavia Internat. Fair of Mod. Electr. Titova 50 Ljubljana, Yugoslavia
OCTOBER 19 - 21 National Electronics Conference McCormick Pl. Chicago, Ill. National Electronics Conf. 228 N. LaSalle St. Chicago, Ill.	OCTOBER 23 - 25 Salt Lake City Stereo Hi-Fi Music Show Ramada Inn Salt Lake City, Utah Norman J. Murfield & Assoc. 7930 Maria St. Westminster, Colo.	OCT. 30 - NOV. 1 Minneapolis Audio Show (Paul Bunyan ERA, spons.) Hotel Leamington Minneapolis, Minn. Mr. Warren Schultze Northern States Sales Co. 1421 Park Ave. Minneapolis, Minn. 55404	OCT. 30 - NOV. 1 Phoenix Stereo Hi-Fi Music Show Executive House Arizonian Scottsdale, Ariz. Norman J. Murfield & Assoc. 7930 Maria St. Westminster, Colo.	NOVEMBER 9 - 12 Annual Membership Conf. of the NEMA Americana Hotel New York, N.Y. Nat. Electrical Mfgs. Assoc. 155 E. 44th St. New York, N.Y. 10017
NOVEMBER 16 - 19 10th Conference on Magnetism & Magnetic Materials (IEEE) Paddison Hotel Minneapolis, Minn. J. D. Goodenough Lincoln Labs Lexington 73, Mass.	DECEMBER 3 - 4 15th Annual Vehicular Communications Symposium Cleveland-Sheraton Cleveland, Ohio Mr. R. E. Bloor Ohio Bell Telephone Co. 700 Prospect Ave. Cleveland, Ohio	JAN. 30 - FEB. 6 1965 Business Conference of the ERA Hollywood Beach Hotel Hollywood, Fla. Electronic Representatives Assoc. 600 S. Michigan Ave. Chicago, Ill. 60605	MARCH 11 - 16 Festival International du Son Palais d'Orsay Paris, France Synd. des Indus. Electroniques de Reproduction ed d'Enregistr. 16, Rue ne Presles Paris, France	MARCH 22 - 25 IEEE International Convention N.Y. Coliseum & New York Hilton Hotel Mr. W. C. Copp IEEE Advertising Dept. 72 W. 45th St. New York, N.Y. 10036

A busy year planned both here and abroad

THE CALENDAR HAS CHANGED since we last published it. New shows have been scheduled for Denver, Houston, Salt Lake City, and Phoenix.

Where did they come from? Three of them are the product of Norman Murfield. He has organized a sort of short-term travelling carnival to display hi-fi on weekends and cross the intervening mountains during the week. A tough assignment.

The fact that he is bringing shows to cities that might not, otherwise, have them is news enough. But even more important, perhaps, is the fact that he offers local dealers the chance to display as well.

Without Norman Murfield and Julie Zinn of Sterling Electronics

(who has been keeping things going in Houston) and men like them, hi-fi would be in danger of becoming a big-city monopoly. It can be a heart-breaking task trying to promote hi-fi on the local level. Look for the complete story of hi-fi in the hinterland in the October issue.

The *London Daily Mail's* Ideal Home Exhibition next March is soliciting participation of "Americana," including "all categories of consumer goods." This type of exhibition appears popular in the Commonwealth; but this the first time London, at least, will have been treated to American products.

Olympic Hall, where the annual event takes place, covers 14 acres. Advance publicity for 1965 brandishes the following statistics: "Paid attendance for the four-week exhibition exceeded 1,122,000 and resulted in more than \$5,000,000 in on-the-

spot sales, more than \$12 million in deposits placed on orders and sales leads from buyers, distributors and jobbers totalling more than \$120,000,000." The promoters also suggest that American manufacturers use the show as an accurate test market for British product distribution.

A show is presently being planned for Washington in February. Philadelphia had one last year, and the two cities were expected to alternate. Now, however, it looks like they may *both* be showing in early 1965. Definite plans remain to be announced for either (or both).

Negotiations are under way for a show of U.S. hi-fi wares in Milan, similar to the highly successful one in Frankfurt last spring. Ray Pepe, as chairman of the IHF has approached the Department of Commerce, who are reported impressed by response to the previous show.

specifications they do not really understand than they do in the verdict of their own ears, Mr. Hirsch observes. He examines such specifications as they apply to tuners, amplifiers, turntables, changers, tone arms, cart-ridges, and loudspeakers. He discusses which specifications are important and meaningful, and which may mislead, and places these specifications in the perspective of the total buying picture. This, he advises, should include such down-to-earth factors as healthy skepticism about the opinions of "golden-ear" audio hobbyists and reliance upon what the purchaser can hear.

In Mr. Hirsch's regular column, *Technical Talk*, he discusses the use of the transient signal in audio component testing, a subject on which he will elaborate further next month, and reviews the Koss Pro-4 stereo headphones, the ADC 303A Brentwood speaker, and the Vernon 47/26 tape recorder.

FM listeners all over the country will be particularly interested in Editor Furman Hebb's regular column, *Editorially Speaking*, for September. Readers in seven metropolitan areas were invited several months ago to rate FM stations in their areas for audio quality. This month Mr. Hebb's column lists the stations, in Boston, Cleveland, Philadelphia, Chicago, Los Angeles, San Francisco, and New York, and their ratings, from substandard to outstanding.

Also in the September issue are the regular features, including Hans H. Fantel's *Audio Basics*, currently up to the R's in a series of definitions of basic audio concepts; Technical Editor Larry Klein's *Sound and the Query*, answering readers' practical questions on equipment maintenance and performance; *Just Looking*, a column devoted to the best in new audio components; Martin Bookspan's *Basic Repertoire*, this month describing the inspiration of Mendelssohn's "Scottish" Symphony and commenting on its recorded realizations; *Best of the Month*, feature reviews of new and outstanding recordings featuring Yehudi Menuhin, Julian Bream, and Mabel Mercer; and nearly one hundred other reviews of the latest recordings and tapes ranging from symphonies to spoken-word albums.

HiFi/STEREO REVIEW's October issue will be devoted to *The Voice in Music*, and will include, for the first time anywhere as part of a magazine article, a Stereo "Playable Page" on which soprano Mirella Freni sings the famous aria "Michiamano Mimi" from Puccini's *La Bohème*.

Morris Salob dies at 38

MORRIS J. SALOB, with Rus Beardsly a partner in Harmony House and the New York High Fidelity Exchange, died of a heart attack during the early morning hours of August 8th. Salob had been hospitalized for a heart condition for about two months not long ago. He was 38.

His unusual career included work as a social worker, probation officer and with the domestic courts. Many of those who he had helped continued to seek him out after he went into the high fidelity business. He lived in Manhattan, is survived by both parents and a sister.

Trusonic shortens name

STEPHENS TRUSONIC, speaker and microphone manufacturer, has shortened its name to Trusonic.

The company, according to Emil Petre, general manager, is developing a number of new products. First to reach the market is Lyra, described as a new type of miniaturized packaged speaker system, with two specially matched speakers in each enclosure.

Production will continue, he said, on the original line of styles and sizes

Product intro from 28

Golly, a real junk with a brass "built in Hong Kong" plate in the companionway to prove it.

Carved and painted fishes disported themselves along the rail, as the *National Geographic* might say. Everything seemed vermilion and gold. Unfortunately, the sails weren't set (at dockside, why should they be?), but the whole atmosphere was undeniably out of the ordinary.

The product? Oh, yes. It was set up down in the cabin. Framed in an archway writhing with decoration was a handsome, straightforward-looking piece of equipment: Eico's new all-transistor receiver kit.

Designed for assembly by beginners, according to Eico, the \$229.95 kit is also available in wired form for \$349.95. It is Model 3566, a stereo multiplex receiver has an amplifier section rated at 66 watts IHF music output.

Among the many features outlined in the literature lying on a deep red pillow nearby were variable inflected feedback tone controls for boost or cut at the extremes of the range without affecting the midrange response or volume level, an M-derived low-pass filter in the tuner section providing

of speakers using the "free cone" principle. It will be used also in all new Trusonic systems, he noted.

Also planned for early release, he said, are several new developments in wireless and condenser microphones.

Pops aired in live stereo

A FULL SEASON of live stereo broadcasts from Symphony Hall, Boston, will be presented over WCRB-FM, Boston.

The 52-week series of Saturday evening concerts started in June with taped stereo programs of the Boston Symphony and the Boston Pops from Tanglewood. Beginning this fall, all programs will emanate live from 8:25 to 10:30 p.m. from Symphony Hall.

The concerts are sponsored by the Boston Safe Deposit and Trust Co. Theodore Jones, president and general manager of the station, believes this is the first sponsored live stereo broadcast of a full season of a first rank orchestra.

The programs are being simulcast on WCRB-AM in mono. William Pierce, long associated with broadcasts by the two Boston orchestras, is handling music commentary and announcements for Boston Trust.

40db suppression of 67kc storecasting in composite signal, IHF bandwidth listing of 20-20,000 cps at 25 watts each channel, 0.5% harmonic distortion; plus the usual loudness switch, front panel switch, no-output-transformer circuit, walnut case, and so on.

When the guests would talk of going "downstairs" to visit the receiver, the junk's owner (nattily clad in traditional yachting costume) would wince only slightly—a forbearance unusual in his breed. It was, in fact, an unusual affair all around.

HARRY ASHLEY, Eico president, tunes the Model 3566 aboard the Mon Lei.





A shocked industry remembers him well

Raymond V. Pepe dies suddenly in Los Angeles at the age of fifty-two.

Vice-president of J. M. Lansing Sound and the chairman of the board of directors of the Institute of High Fidelity, he was the spearhead of many industry projects.

THE BASIC FACTS of Ray Pepe's life are simply told.

Raymond V. Pepe was born on February 9, 1912, in New York City. He graduated from Columbia University and served Mayor Fiorello La Guardia's administration in the Office of the Comptroller of New York City.

During World War II, Pepe attained the rank of Major in the U.S. Army. He was vice-president in charge of marketing with J. B. Lansing, for two consecutive terms was president of the Institute of High Fidelity, and has since been chairman of the IHF board of directors.

He died on Saturday, August 15th, following a heart attack termed "mild." Memorial services were held August 18th. He is survived by his wife,

Karla, and daughter, Lori.

The facts, however, suggest little of the personality, as anyone who knew him will testify—and there may have been no one better known to the high fidelity industry than Ray Pepe. His energy seemed to carry him everywhere. His interest in politics was, for example, well known.

That energy has made itself felt in many ways in the industry. Among the efforts that seemed to mean the most to him was his long-term campaign to bring an air of professionalism into the business of disseminating fine audio equipment. He insisted on the concept of the specialist. It had been a policy of J. B. Lansing, but he carried it to the industry as a whole.

His efforts in Excise Tax repeal and his urging that IHF members submit all their products to Underwriters Laboratories for listing are among his other campaigns. Most recently, he was negotiating with representatives of the U. S. Department of Commerce for a proposed show of American high fidelity products in Milan—a show similar to the one he personally did so much to make a success in Frankfurt last spring. The development of foreign markets for products was, in fact, a possibility he urged at every opportunity.

The San Francisco show has absorbed a lot of his energy in the last few months. At the request of a San Francisco delegation, he went there following the Los Angeles show last

ONLY PICTURES can convey anything of Ray Pepe's personality. The cover photograph was taken by Saul Marantz a few years ago at a Los Angeles show. On the facing page, he is caught, characteristically, in the middle of an earnest talk with a dealer (in this case, Bob Rorer of Portland, Ore.). As a representative of the industry, Ray Pepe seems to have been just about everywhere: the bowl goes to New York's Mayor Robert Wagner; the "morning glory" is demonstrated in Frankfurt last spring. And, wherever he could, he spoke about high fidelity.



spring. The results of that trip and the inquiry into possible Golden Gate sites for a hi-fi show were his presentation of the case before the IHF meeting in Chicago in May and the Institute vote for sponsorship.

A complex man like Ray Pepe, who knows as many different people he has did, will, of necessity, leave many different impressions on those who knew him. If he was sometimes the focus of divergent opinions, it may be that no man at once so complex and so vital could have stayed in calmer waters. There was too much activity around him, always, for calm waters to collect. That activity, we know, will have lasting influence among us.



WE GET LETTERS ➡ YOU GET LEADS



You bet we get letters! More than 55,000 of them. And they all want two things. The nearest dealer's name and a brochure on the Incomparable Concertone 800. Why? Because the Concertone 800 is the hottest recorder on the market. And rightly so. Only the incomparable 800 has double Reverse-o-matic® (automatic reversing at each end of the tape) and six heads. You can *record and play* in both directions automatically without reel turnover for as long as you wish. Also, the Concertone 800 has more

exclusive features than any recorder available today. Portable or tape deck, it starts at \$379.95. ■ More inquiries are pouring in every day for this unique recorder. Write now and ask about a profit protected Concertone dealership. We can start sending inquiries to you right away. Write to Mr. Paul Abbey, Vice President of Concertone, a division of Astro-Science Corporation, 9731 Factorial Way, So. El Monte, Calif.

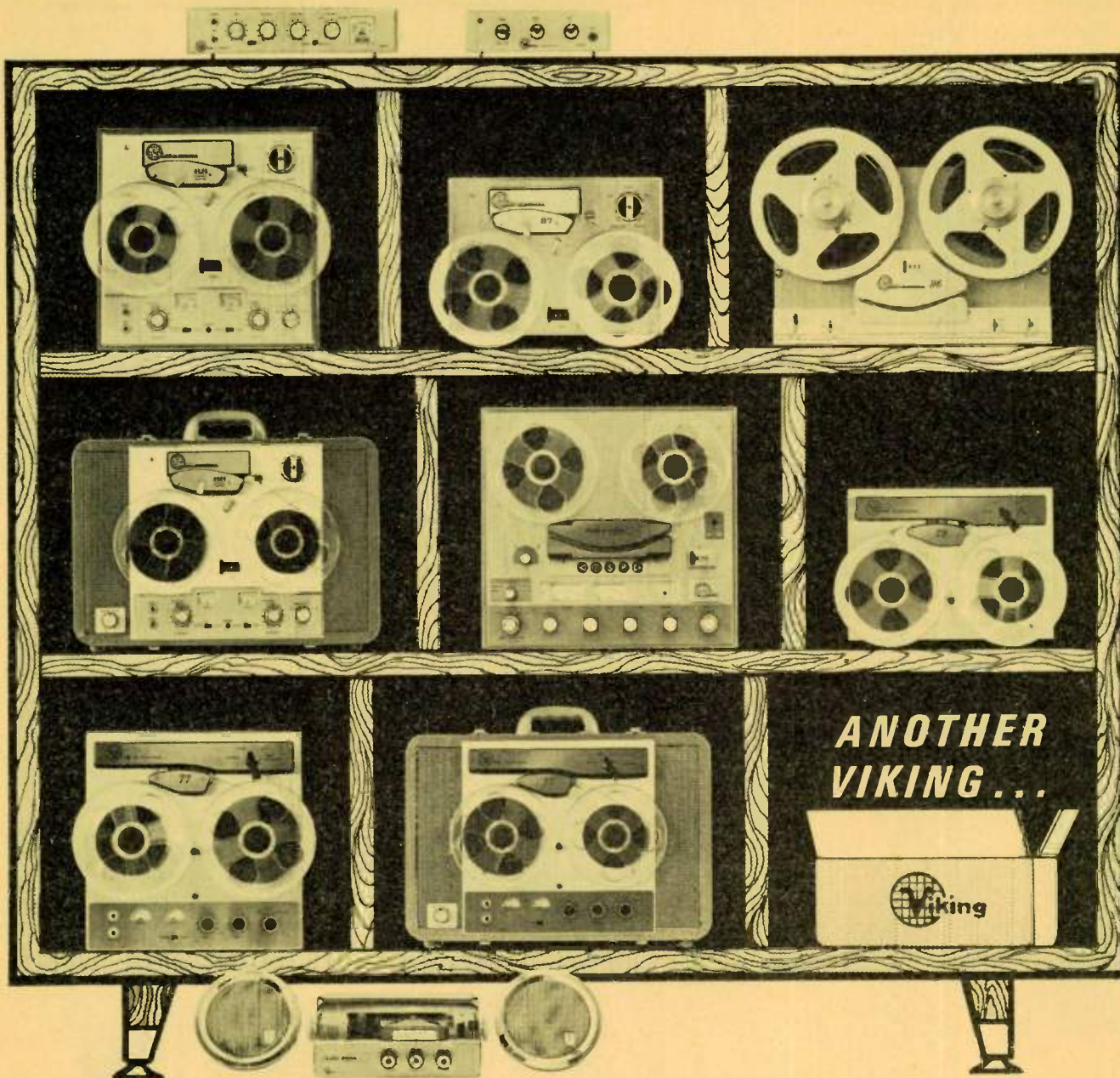
CONCERTONE 

apm



apm





AND ANOTHER...

ever felt confused about adding tape to your music system?

It's really quite simple. Jaunt over to your Viking dealer. He'll cheerfully explain the virtues of tape recording. And he'll show you a Viking model designed to play tape, or to record and

play, or to play forward and reverse — automatically.

Then you pick the Viking model you like best with complete confidence because you know that each is **MADE BY SKILLED AMERICAN CRAFTSMEN.**

RP83 Amplifier PA94 Amplifier
88 Stereo Compact 87 Tape Transport Studio 96
880 Portable Stereo Compact Retro-Matic 220 78 Tape Transport
77 Stereo Compact 770 Portable Stereo Compact
Auto-Tape 500



Viking OF MINNEAPOLIS, INC.

9600 Aldrich Avenue So., Minneapolis, Minn. 55420

Choosing a tape recorder was never a simple matter. But now, with the sudden increase in makes, models and features, the task is monumental. Adding to the general confusion is the lack of standardization in terminology employed by tape manufacturers in their descriptive literature. For example, most tape recorders today offer some type of recording level indicator. There are three types: the VU (a meter dial with needle indicator that reacts to sound level), the neon light (a flashing light) or the electric eye (an eye-like affair that expands or contracts as sound level increases or decreases).

Frequency response claims, in particular, tend to confuse the home tape recordist. And even engineers discount them unless they include specific \pm db deviation limits. In this directory we simply quote the frequency response for the highest speed, and all other specifications, just as they have been furnished to us by the manufacturers.

On most machines, the radio-phono input refers to signals from a radio, tuner, TV, or crystal or ceramic cartridge, or from a magnetic cartridge after preamplification-equalization.

In this guide, we've simplified the terminology and provided a ready means for narrowing choice to manageable proportions. A few machines have no tape counter provision, but these are mainly in the battery-operated portable class.

One of the major considerations in buying a tape recorder should be the manner in which you plan to use it. Are you planning to travel around with it? Then, weight may be an important consideration. Do you plan to incorporate it into an existing high fidelity system? In that case, you may be more interested in a tape deck than a machine complete with amplifiers and speakers. If you are a photographer, slide sync may be a consideration.

Machines classified under Home Tape Recorders are complete record and playback units. Those listed under Tape Decks have recording facilities (with the exception of transport only units), but must be joined with an external amplifier and speaker or fitted into an existing high fidelity system for playback. Battery-operated Portables are listed separately.

Within these headings are tape machines that meet every need from casual monophonic to serious stereo recording and listening. While there are many machines in the below \$100 range, we've placed a \$100 floor on the tape recorders listed. Most of the machines under that price are rather limited in operation.

—MYRON A. MATZKIN

Home Tape Recorders

AMERICAN CONCERTONE 801



Tape speeds — $3\frac{3}{4}$ and $7\frac{1}{2}$ ips. Heads — six. Motors — three. Record — 4-track mono, 4-track stereo. Playback — 4-track mono, 4-track stereo. Frequency response — 30-18,000 cps. Meter — VU. Weight — 47 lb. Other features — 2 microphone and 2 radio-phono inputs; 2 preamplifier and 2 stereo headphone outputs; automatic reverse record and play; echo effects; sound-on-sound; built-in speakers. Price — \$449.95.

AMPEX UST-4



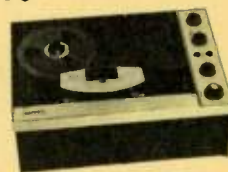
Tape speeds — $3\frac{3}{4}$ and $7\frac{1}{2}$ ips. Heads — two. Motors — one. Record — 4-track mono and 4-track stereo. Playback — 2 and 4-track mono and 4-track stereo. Frequency response — 50-15,000 cps. Meter — VU-type (switched for either channel). Weight — 34 lb. Other features — self-contained carrying case; 2 microphone and 2 radio-phono inputs; 2 preamplifier and 2 external speaker outputs; built-in speakers. Price — \$299.

AMPEX 1070



Tape speeds — $1\frac{1}{2}$, $3\frac{3}{4}$ and $7\frac{1}{2}$ ips. Heads — three. Motors — one. Record — 4-track mono and 4-track stereo. Playback — full, 2- and 4-track mono and 4-track stereo. Frequency response — 40 to 17,000 cps. Meters — two neon lights. Weight — 39 lb. Other features — self-contained carrying case; 2 microphone and 2 radio-phono inputs; 2 preamplifier and 3 speaker outputs. Semi-automatic reverse play. Automatic cutoff switch; and built-in speakers. Price — less than \$399. Available as deck, \$349 to \$369.

AMPEX 2070



Tape speeds — $1\frac{1}{2}$, $3\frac{3}{4}$ and $7\frac{1}{2}$ ips. Heads — three. Motors — one. Record — 4-track mono and 4-track stereo. Playback — full, 2- and 4-track mono and 4-track stereo. Frequency response — 30 to 18,000 cps. Meters — two neon lights. Weight — 39 lb. Other features — self-contained carrying case; 2 microphone and 2 radio-phono inputs; 3 speaker and 2 preamplifier outputs; automatic 20 cps tone operated, reverse play; automatic take-up reel threading; automatic cut off switch; slide projector sync using external sync device; 2 built-in speakers. Price — less than \$499. Available as deck from \$439 to \$469.

AMPEX MODEL F-4470



Tape speeds — $3\frac{3}{4}$ and $7\frac{1}{2}$ ips. Heads — three. Motors — one. Record — 4-track mono and 4-track stereo. Playback — full, 2 and 4-track mono and 4-track stereo. Frequency response — 50-15,000 cps. Meters — Two VU-type. Weight — 48 lb. Other features — self-contained carrying case; 2 microphones, 2 radio-phono inputs; 2 external speaker outputs; automatic shutoff; sound-on-sound; built-in speakers. Price — \$695. Model 4460, same as above but without speakers \$595; with playback volume control, no speaker, \$579.50. Model F-4452, unmounted for use with component system, no volume control, \$549.50.

BELL RT 360



Tape speeds — $3\frac{3}{4}$ and $7\frac{1}{2}$ ips. Heads — three. Motors — three. Record — 4-track mono and 4-track stereo. Playback — 4-track mono and 4-track stereo. Frequency response — 40-16,000 cps. Meters — two VU. Weight — 48 lb. Other features — self-contained carrying case; 2 microphone, 2-radio-phono and 2 magnetic cartridge inputs; 2 preamplifier, 2 external speaker and stereo headphone outputs; sound-on-sound; tape dup-

indicating without additional deck or amplifier with DK-1 accessory motor kit; speakers in split cover of carrying case. Price — \$449.95. Also available as deck, \$369.95.

BRYAN TK7



Tape speeds — 1½, 3¾ and 7½ ips. Heads — two. Motors — one. Record — 4-track mono and 4-track stereo. Playback — 2- and 4-track mono and 4-track stereo. Frequency response — 80-15,000 cps. Meters — two electric eyes. Weight — 29 lb. Other features — self-contained carrying case; 2 microphone and 2 radio-phono inputs; 2 preamplifier and 2 external speaker outputs; built-in speakers. Price — \$199.95.

CIPHER I

Tape speeds — 1½, 3¾ and 7½ ips. Heads — three. Motors — one. Record — 2-track mono. Playback — 2-track mono. Frequency response — 70-13,000 cps. Meter — neon light. Weight — 26 lb. Other features — self-contained carrying case; microphone and radio-phono inputs; earphone and external speaker outputs; built-in speaker. Price — \$139.95.

CIPHER VII



Tape speeds — 1½, 3¾ and 7½ ips. Heads — three. Motors — one. Record — 2- and 4-track mono and 2 and 4-track stereo. Playback — 2 and 4-track mono and 2 and 4-track stereo. Frequency response — 35-15,000 cps. Meters — 2 VU-type. Weight — 45 lb. Other features — self-contained carrying case; 2 microphone, 2 radio, and 2 phono inputs; 2 preamplifier, 2 external speaker, and headphone outputs; sound-on-sound; speakers in carrying case covers. Price — \$274.95. Also available as deck, \$199.95.

CIPHER 800



Tape speeds — 3¾ and 7½ ips. Heads — two. Motors — three. Record — 4-track mono (optional 2-track), 4-track stereo. Playback — 4-track mono and 4-track stereo (optional 2-track). Frequency response — 50-15,000 cps. Meters — 2 VU. Weight — 50 lb. Other features — 2 microphone and 2 radio-phono inputs; 2 preamplifier and headphone outputs; monitoring; plug-in sound heads; reel end shutoff; sound-on-sound. Price — \$449.95.

CONCORD 104

Tape speeds — 3¾ and 7½ ips. Heads — two. Motors — one. Record — 2-track mono. Playback — 2-track mono. Frequency response — 40-12,000 cps. Meter — electric eye. Weight — 11 lb. Other features — self-contained carrying case; microphone and radio-phono inputs; extension speaker output; and built-in speaker. Price — under \$100.

CONCORD 220



Tape speeds — 1½, 3¾ and 7½ ips. Heads — three. Motors — one. Record — 2-track mono. Playback — 2-track mono. Frequency response — 40-15,000 cps. Meter — electric eye. Weight — 22 lb. Other features — self-contained carrying case; microphone and radio-phono inputs; extension speaker output; built-in speaker; provision for using Syncrol (slows down or speeds up tape travel) for movies; built-in speaker. Price — Under \$150.

CONCORD 440



Tape Speeds — 1½, 3¾ and 7½ ips. Heads — two. Motors — one. Record — 4-track mono and 4-track stereo. Playback — 4-track mono and 4-track stereo. Frequency response — 50-15,000 cps. Meters — 2 neon lights. Weight — 34 lb. Other features — 2 microphone and 2 radio-phono inputs; 2 preamplifier, and 2 external speaker outputs; sound-with-sound; sound-on-sound; one speaker built into machine, one speaker built into carrying case cover. Price — Under \$240.

CONCORD 550-4

Tape speeds — 1½, 3¾ and 7½ ips. Heads — two. Motors — one. Records — 4-track mono and 4-track stereo. Playback — 4-track

mono and 4-track stereo. Meters — 2 VU-type. Weight — 44 lb. Other features — self-contained carrying case; 2 microphone and 2 radio-phono inputs; 2 preamplifier and 2 external speaker outputs; sound-on-sound; one speaker built into machine, one in carrying case cover. Price — under \$320.

CONCORD 884



Tape speeds — 1½ and 7½ ips. Heads — three. Motors — one. Record — 4-track mono and 4-track stereo. Playback — 4-track mono and 4-track stereo. Frequency response — 30-20,000 cps. Meters — two VU. Weight — 43 lb. Other features — self-contained carrying case; 2 microphone and 2 radio-phono inputs; 2 preamplifier, 2 external speaker, and headphone outputs; sound-on-sound; monitoring; automatic shutoff; one speaker built into machine and second into carrying case cover. Price \$450.

CONCORD R-1100



Tape speeds — 3¾ and 7½ ips. Heads — four. Motors — three. Record — 4-track mono and 4-track stereo. Playback — 4-track mono and 4-track stereo. Frequency response — 50-15,000 cps. Meters — 2 VU-type. Weight — 46 lb. Other features — 2 microphone and 2 radio-phono inputs; 2 preamplifier, 2 speaker and headphone outputs; sound-on-sound; two speakers in split carrying case cover. Also available as deck.

CONTINENTAL TP877



Tape speeds — 3¾ and 7½ ips. Heads — two. Motors — one. Record — 2-track mono. Playback — 2-track mono. Frequency response — 100-10,000 cps. Meter — VU-type. Weight — 9 lb. Other features — self-contained carrying case; microphone and radio-phono inputs; monitor and external speaker outputs; built-in speaker. Price — \$99; in attache case \$110.95.



Can you recognize these three great stars?

The first two are obvious to movie goers: Rock Hudson and Doris Day starring in Universal's new comedy, "Send Me No Flowers." The third is ours and it's on the table. It's the Incomparable Concertone 800. This unique stereo tape recorder plays a vital role in this hilarious new movie. When the script called for a tape recorder, Universal Pictures wanted the finest, most modern machine available. That's why they selected the Concertone 800 to appear. It's as modern and sophisticated as the live stars of the movie. □ The

Concertone 800 is the only stereo tape recorder with double Reverse-o-matic® and six heads—allowing you to record and play continuously without reel turnover. The 800 (portable or tape deck) is priced realistically and provides an exclusive combination of features. It starts as low as \$379.95. Send for a free Concertone 800 brochure and the name of your nearest dealer. Write to Concertone, Box 3246, South El Monte, Calif.

CONCERTONE



ROCK HUDSON and DORIS DAY star in "SEND ME NO FLOWERS"

EMERSON MM 316

Tape speeds — 15/16, 1 $\frac{1}{8}$, 3 $\frac{3}{4}$ and 7 $\frac{1}{2}$ ips. Heads — two. Motors — one. Record — 2-track mono. Playback — 2-track mono. Frequency response — 50-13,000 cps. Meter — neon light. Weight — 18 lb. Other features — microphone input; external speaker output; built-in speaker. Price — \$99.95.

EMERSON MM 317



Tape speeds — 15/16, 1 $\frac{1}{8}$, 3 $\frac{3}{4}$ and 7 $\frac{1}{2}$ ips. Heads — two. Motors — one. Record — 2-track mono. Playback — 2-track mono. Frequency response — 50-15,000 cps. Meter — VU-type. Weight — 21 lb. Other features — microphone input; external speaker output; built-in speaker. Price — \$129.95.

EMERSON SS-333



Tape speeds — 15/16, 1 $\frac{1}{8}$, 3 $\frac{3}{4}$ and 7 $\frac{1}{2}$ ips. Heads — two. Motor — one. Record — 4-track mono and 4-track stereo. Playback — 4-track mono and 4-track stereo. Frequency response — 35-18,000 cps. Meter — VU type. Weight — 26 lb. Other features — 2 microphone and 2 radio-phono inputs; 2 preamplifier and 2 external speaker outputs; sound-on-sound; monitoring; 2 built-in speakers. Price — \$199.95.

ESTEY MODEL 20

Tape speeds — 3 $\frac{3}{4}$ and 7 $\frac{1}{2}$ ips. Heads — two. Motors — one. Record — 2-track mono. Playback — 2-track mono. Frequency response — 50-12,000 cps. Meter — neon light. Weight — 21 lb. Other features — self-contained carrying case; microphone input; built-in speaker. Price — \$99.95.

ESTEY MODEL 30



Tape speeds — 3 $\frac{3}{4}$ and 7 $\frac{1}{2}$ ips. Heads — two. Motors — one. Record — 2-track mono. Playback — 2-track mono. Frequency response — 100-12,000 cps. Meter — neon light. Weight — 21 lb. Other features — self-contained carrying case; microphone input; built-in speaker. Price — \$99.95.

tained carrying case; microphone input; external speaker output; high and low impedance switch (for using microphone input for radio-phono); built-in speaker. Price—\$129.95.

ESTEY MODEL 50



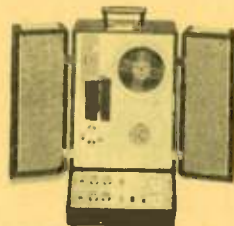
Tape speeds — 3 $\frac{3}{4}$ and 7 $\frac{1}{2}$ ips. Heads — two. Motors — one. Record — 2-track mono and 2 and 4-track stereo. Playback — 2 and 4-track mono and 2 and 4-track stereo. Frequency response — 60-12,000 cps. Meters — two neon light. Weight — 23 lb. Other features — self-contained carrying case; 2 microphone inputs; 2 external speaker outputs; high-low impedance switch (for using microphone input for radio-phono); sound-on-sound; sound-with-sound; monitoring; two speakers in split carrying case cover. Price — \$249.95.

ESTEY MODEL 70



Tape speeds — 3 $\frac{3}{4}$ and 7 $\frac{1}{2}$ ips. Heads — three. Motors — one. Record — 2 and 4-track mono and 4-track stereo. Playback — 2 and 4-track mono and 4-track stereo. Frequency response — 50-16,000 cps. Meters — two VU. Weight — 24 lb. Other features — self-contained carrying case; 2 microphone inputs; two external speaker outputs; high-low switch (for using microphone inputs for radio-phono); sound-with-sound; sound-on-sound; automatic shut off; two speakers in detachable wing carrying case covers. Price — \$349.95.

ESTEY T-91



Tape speeds — 1 $\frac{1}{8}$, 3 $\frac{3}{4}$ and 7 $\frac{1}{2}$ ips. Heads — three. Motors — one. Record — 4-track mono and 4-track stereo. Playback — 2 and 4-track mono and 4-track stereo. Frequency response — 40-18,000 cps. Meters — 2 VU. Weight — 29 lb. Other features — self-contained carrying case; 2 microphone and 2 radio-phono inputs; 2 preamplifier and 2 external speaker outputs; automatic shutoff; sound-on-sound; sound-with-sound; monitoring; 2 speakers built into split carrying case cover. Price — \$499.95.

FANON-MASCO FTR-404

Tape speeds — 3 $\frac{3}{4}$ and 7 $\frac{1}{2}$ ips. Heads — two. Motors — one. Record — 2-track mono. Playback — 2-track mono. Frequency response — 100-12,000 cps. Meter — VU-type. Weight — 22 lb. Other features — microphone and radio-phono inputs; speaker and headphone outputs; built-in speaker. Price — \$109.95.

FANON-MASCO FTR-409



Tape speeds — 1 $\frac{1}{8}$, 3 $\frac{3}{4}$ and 7 $\frac{1}{2}$. Heads — two. Motor — one. Record — 4-track mono and 4-track stereo. Playback — 4-track mono and 4-track stereo. Frequency response — 40-14,000 cps. Meters — two VU-type. Weight — 39 lb. Other features — 2 microphone and 2 radio-phono inputs; 2 preamplifier and 2 external speaker outputs; sound-with-sound; sound-on-sound; built-in speakers. Price — \$229.95.

FERROGRAPH 5/AN

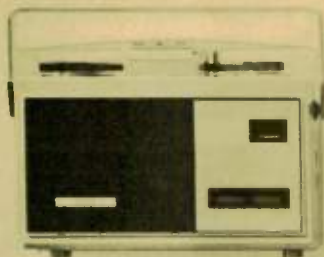


Tape speeds — 3 $\frac{3}{4}$ and 7 $\frac{1}{2}$ ips. Heads — two. Motors — three. Record — 2-track mono. Playback — 2-track mono. Frequency response — 50-15,000. Meter — VU. Weight — 49 lb. Other features — self-contained carrying case; microphone and radio-phono inputs; preamplifier and speaker outputs; built-in speaker. Price — \$425.

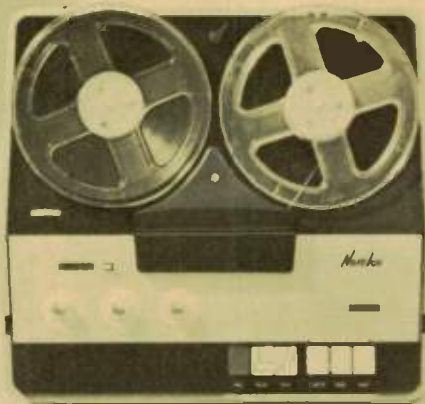
FERROGRAPH 5/424



Tape speeds — 3 $\frac{3}{4}$ and 7 $\frac{1}{2}$ ips. Heads — three. Motors — three. Record — 2 and 4-track mono and 2-track stereo. Playback — 2 and 4-track mono and 2 and 4-track stereo. Frequency response — 30-15,000 cps. Meter — VU (switched). Weight — 48 lb. Other features — recording and playback preamplifiers; self-contained carrying case; 2 microphone and 2 radio-phono inputs; 2 preamplifier and stereo headphone outputs; sound-on-sound; echo effects; monitoring. Price — \$595.

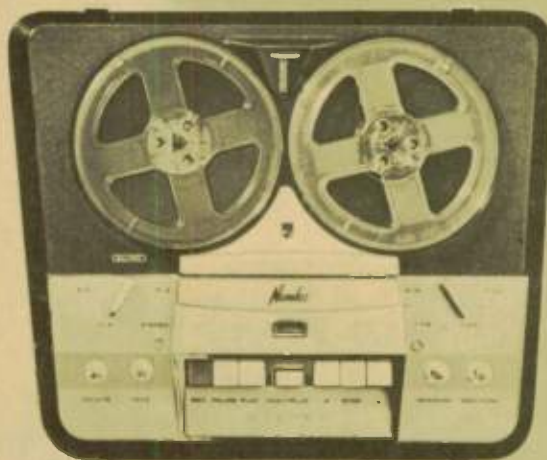


◀ **Continental '101'** 100% transistorized cordless portable (only 7 lbs.) ... big machine record/playback quality ... self-contained loudspeaker ... constant speed motor and capstan drive ... dynamic microphone ... records/plays back up to 3 hours on a single tape ... 11"x3½"x8".



▲ **Continental '201'** 2-speed (7½ and 3¾ ips) 4-track mono record/playback ... dual hi-fi preamps for stereo playback thru any external amplifier and speaker ... portable P.A. ... 15¾" x 13¾" x 6¾"; weighs 18 lbs. (available, late '64)

▼ **Continental '301'** 100% transistorized 4-speed, 4-track mono record/playback ... Plus stereo playback with any external amplifier and speaker ... recording stand-by facility; mixing; monitoring; dynamic microphone ... 16½" x 15½" x 8¾"; weighs 29 lbs.



▲ **Continental '401'** 100% transistorized professional quality 4-track stereo/mono/record/playback ... 4 speeds (7½, 3¾, 1½ and ¾ ips) ... completely self-contained ... dual hi-fi preamps, power amps, speakers and dynamic stereo microphone ... 18¾" x 15" x 10"; weighs 38 lbs.



Garry-Corder '150' Revolutionary new cartridge tape recorder provides ultimate in convenience, simplicity, reliability ... Pocket-size (weighs only 3 lbs.) ... Cordless ... Gives full hour of high quality recording/playback per cartridge (cartridge change takes less than 3 seconds) ... Capstan drive and constant speed motor ... Comes complete with 4 cartridges; dynamic microphone; fitted carrying cases; patch cord ... 7¾" x 4½" x 2¼"

There's a Norelco quality tape recorder to suit the needs of every one of your customers!

Norelco means business! We'll set you up as tape headquarters in your community and we'll maintain your leadership with: a quality recorder for every purse and purpose; up to 100% Norelco-paid local advertising; the biggest line of accessories in the business; plus a national ad campaign for you to tie in with. Write: North American Philips Company, Inc., 100 East 42nd Street, New York, N. Y. 10017

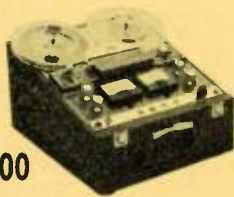
Norelco

FREEMAN 600



Tape speeds — 3¾, 7½ and 15 ips. Heads — three. Motors — one. Record — 2 and 4-track mono and 2 and 4-track stereo. Playback — 2 and 4-track mono and 2 and 4-track stereo. Frequency response — 40-15,000 cps. Meters — 2 VU. Weight — 46 lb. Other features — 2 microphone and 2 radio-phono inputs; 2 preamplifier, 2 external speaker, stereo headphone outputs; sound-with-sound; automatic shutoff; built-in speakers. Price — \$449.50.

FREEMAN 800



Tape speeds — 1½, 3¾ and 7½ ips. Heads — two. Motors — one. Record — 4-track mono; Playback — 4-track mono and 4-track stereo. Frequency response — 40-16,000 cps. Meters — two VU. Weight — 26 lb. Other features — self-contained carrying case; 2 microphone and 2 radio-phono inputs; 2 preamplifier, 2 external speaker; 3 stereo headphone outputs; sound-on-sound; and built-in speakers. Price — \$299.50 (also available as deck, 800D) \$99.50.

GELOSO G 257

Tape speeds — 1½ ips. Heads — two. Motors — one. Record — 2-track mono. Frequency response — 80-7,500 cps. Meter — electric eye. Weight — 6 lb. Other features — self-contained carrying case; remote control microphone and radio-phono inputs; external speaker output; built-in speaker. Price — \$139.95.

GELOSO 258A



Tape speeds — 15/16, 1½ and 3¾ ips. Heads — two. Motors — one. Record — 2-track mono. Playback — 2-track mono. Frequency response — 50-12,000 cps. Meter — electric eye. Weight — 13 lb. Other features — microphone and radio-phono inputs; external speaker output; built-in speaker. Price — \$109.95.

GRAETZ



Tape speeds — 3¾ and 7½ ips. Heads — two. Motors — one. Record — 4-track mono and 4-track stereo. Playback — 4-track mono and 4-track stereo (with accessory speaker). Frequency response — 40-20,000 cps. Meter — electric eye. Weight — 23 lb. Other features — self-contained carrying case; 1 microphone and 2 radio-phono inputs; 2 preamplifier and 2 external speaker outputs; adapter available for sound-on-sound or sound-with-sound; one built-in speaker with ability to play two stereo channels when adapter cord is used. Price — \$399.

GRUNDIG TK46

Tape speeds — 1½, 3¾ and 7½ ips. Heads — three. Motors — one. Record — 4-track mono and 4-track stereo. Playback — 4-track mono and 4-track stereo. Frequency response — 40-18,000 cps. Meter — electric eye. Weight — 33 lb. Other features — self-contained carrying case; 2 microphone and 2 radio-phono inputs; 2 preamplifier and 2 external speaker outputs; sound-on-sound; sound-with-sound; echo; built-in speakers. Also available as deck. (Model TK45.)

GRUNDIG TK42

Tape speeds — 1½, 3¾ and 7½ ips. Heads — three. Motors — one. Record — 4-track mono. Playback — 4-track mono and 4-track stereo. Frequency response — 40-18,000 cps. Meter — electric eye. Weight — 28 lb. Other features — self-contained carrying case; microphone and radio-phono inputs; preamplifier and external speaker outputs; sound-on-sound; echo effects; built-in speaker. Model TK40, without stereo playback.

GRUNDIG TK400



Tape speeds — 3¾ and 7½ ips. Heads — three. Motors — one. Record — 4-track mono. Playback — 4-track mono. Frequency response — 40-18,000 cps. Meter — none. Weight — 18 lb. Other features — self-contained carrying case; automatic volume control on record; microphone and radio-phono inputs; preamplifier and external speaker outputs; sound-with-sound (with external amplifier); built-in speaker.

HEATH AD-72A

Tape speeds — 3¾ and 7½ ips. Heads — two. Motors — one. Record — 4-track mono

and 4-track stereo. Playback — 4-track mono and 4-track stereo. Frequency response — 50-15,000 cps. Meters — two electric eye. Weight — 43 lb. Other features — self-contained carrying case; microphone and radio-phono inputs; 2 external speaker headphone outputs; speakers built into split cover carrying case. Price — Semi-kit, \$159.95.

KALIMAR 1600

Tape speeds — 3¾ and 7½ ips. Heads — two. Motors — one. Record — 2-track mono. Playback — 2-track mono. Frequency response — 100-15,000 cps. Meter — VU-type. Weight — 16 lb. 9 oz. Other features — self-contained carrying case; microphone and radio-phono inputs; external speaker output. Price — \$99.50.

KORTING 2000

Tape speeds — 3¾ and 7½ ips. Heads — two. Motors — one. Record — 4-track mono. Playback — 2- and 4-track mono (4-track stereo with external preamplifier and amplifier). Frequency response — 30-20,000 cps. Meter — electric eye. Weight — 29 lb. Other features — self-contained carrying case; low impedance, radio-phono and magnetic cartridge inputs; 2 stereo head outputs; 2 preamplifier and external speaker output; built-in speaker. Price — \$199.95.

KORTING TR-3000



Tape speeds — 3¾ and 7½ ips. Heads — two. Motors — one. Record — 4-track mono and 4-track stereo. Playback — 2 and 4-track mono and 2 and 4-track stereo. Frequency response — 30-20,000 cps. Meter — electric eye. Weight — 30 lb. Other features — self-contained carrying case; 2 microphone, 2 radio-phono, and two magnetic cartridge inputs; 2 tape head, 2 preamplifier, external speaker, and headphone outputs; motor; sound-on-sound; provision for slide projector sync; 2 built-in speakers. Price — \$299.95.

KORTING 4000



Tape speeds — 1½, 3¾ and 7½ ips. Heads — three. Motors — one. Record — 4-track mono and 4-track stereo. Playback — 2 and 4-track mono and 2 and 4-track stereo. Frequency response — 30-20,000. Meters — two electric eyes. Weight — 33 lb. Other features — self-contained carrying case; 2

impedance microphone, 2 radio-phono and 2 magnetic cartridge inputs; 2 tape head, 2 external speaker, 2 preamplifier, 2 European radio and headphone outputs; monitor; sound-on-sound; echo; provision for slide projector sync; sound-with-sound; tape duplication; built-in speakers. Price \$399.95.

LAFAYETTE RK-600A



Tape speeds — $3\frac{3}{4}$ and $7\frac{1}{2}$ ips. Heads — two. Motors — one. Record — 4-track mono and 4-track stereo. Playback — 2 and 4-track mono and 2 and 4-track stereo. Frequency response — 40-15,000 cps. Meter — 2 neon lights. Weight — 31 lb. Other features — self-contained carrying case; 2 microphone and 2 radio-phono inputs; 2 preamplifier and headphone outputs; monitoring; sound-with-sound; built-in speakers. Price—\$129.50.

LAFAYETTE RK-675



Tape speeds — $3\frac{3}{4}$ and $7\frac{1}{2}$ ips. Heads — two. Motors — one. Record — 4-track mono and 4-track stereo. Playback — 4-track mono and 4-track stereo. Frequency response — 40-18,000 cps. Meter — VU. Weight — 35 lb. Other features — self-contained carrying case; 2 microphone and 2 radio phono inputs; 2 preamplifier and headphone outputs; built-in speakers. Price — \$179.95.

LAFAYETTE 1000



Tape speeds — $1\frac{1}{8}$, $3\frac{3}{4}$ and $7\frac{1}{2}$ ips. Heads two. Motors — one. Record — 4-track mono and 4-track stereo. Playback — 2 and 4-track mono and 2 and 4-track stereo. Frequency response — 50-15,000 cps. Meters — 2 VU. Weight — 43 lb. Other features — teakwood cabinet; 2 microphone and 2 radio-phono inputs, 2 preamplifier and 2 external speaker outputs; built-in speakers. Price — \$199.50.

LEXINGTON 66

Tape speeds — $1\frac{1}{8}$, $3\frac{3}{4}$ and $7\frac{1}{2}$ ips. Heads — two. Motors — one. Record — 4-track

mono and 4-track stereo. Playback — 4-track mono and 4-track stereo. Frequency response — 20-16,000 cps. Meters — 2 VU. Weight — 36 lb. Other features — 2 microphone and 2 radio-phono inputs; 2 preamplifier, 2 external speaker and headphone outputs; sound-on-sound; two speakers built into split carrying case cover. Price — \$239.50.

LEXINGTON 77



Tape speeds — $1\frac{1}{8}$, $3\frac{3}{4}$ and $7\frac{1}{2}$ ips. Heads two. Motors — one. Record — 4-track mono and 4-track stereo. Playback — 4-track mono and 4-track stereo. Frequency response — 20-20,000 cps. Meters — 2 VU. Weight — 51 lb. Other features — self-contained carrying case; 2 microphone and 2 radio-phono, and 2 auxiliary inputs; 2 preamplifier, 2 external speaker and headphone outputs; sound-on-sound; automatic shut-off; one speaker built into machine and two in split carrying case. Price — \$299.50.

LUCOR 561B

Tape speeds — $3\frac{3}{4}$ and $7\frac{1}{2}$ ips. Heads — two. Motors — one. Record — 2-track mono. Playback — 2-track mono. Frequency response — not available. Meter — VU-type. Weight — $17\frac{1}{2}$ lbs. Other features — microphone, radio-phono inputs; external speaker output; built-in speaker. Price — \$99.50.

LUCOR 751



Tape speeds — $3\frac{3}{4}$ and $7\frac{1}{2}$ ips. Heads — two. Motors — one. Record — 2-track mono. Playback — 2-track mono. Frequency response — not available. Meter — VU-type. Weight — 22 lb. Other features — microphone and radio-phono inputs; external speaker and earphone outputs; built-in speaker. Price — \$119.95.

LUCOR 1250



Tape speeds — $3\frac{3}{4}$ and $7\frac{1}{2}$ ips. Heads — two. Motors — one. Record — 4-track mono

An audio engineer reports on Cross Field Concept

By Cliff Whenmouth, President
Magnetic Tape Duplicators

A year of exhaustive testing—in studios, home sound systems and in the field—proves the Cross Field concept, as applied by Roberts Electronics in their Cross Field Model 770 4-track stereo tape recorder, solves the problems of head wear and loss of high frequency response at slow speed. The performance of this remarkable instrument may very well set a new standard for the entire tape industry!

With a frequency response of 40-22K at $7\frac{1}{2}$ IPS, the Cross Field 770 opens a new octave in the high frequency spectrum never before captured on tape. With a frequency response of 40-13K at $1\frac{1}{8}$ IPS, the Cross Field 770 advances tape recording technique into the realm of long-play stereo.

Recording 4-track stereo at $1\frac{1}{8}$ IPS, the equivalent of 18 stereo tape cartridges—or up to 8 hours of stereo—may be recorded on one 7" reel of tape! Cross Field LP stereo is brilliant, with crisp lows, stiletto-sharp highs.

This sophisticated instrument, with a wide range of professional features, is priced at \$499.95 (slightly higher in Canada). The world's first stereo 6-hour tape (music by famous artists reproduced on new MTD Bionic Duplicator) free with purchase.



See and hear the Cross Field 770 demonstration at all Roberts Dealers throughout the United States and Canada. Or write direct to the plant for complete information.

Roberts Electronics, Division of Rheem Mfg. Co., 5922 Bowcroft St., L. A., Calif. 90016. Dept. 1

In Canada: J. M. Nelson Electronics, Ltd., 2149 Commercial Drive, Vancouver 12, B. C.

ROBERTS 

and 4-track stereo. Playback — 4-track mono and 4-track stereo. Frequency response — 30-20,000 cps. Meters — three VU-type. Weight — 36 lb. Other features — 2 microphone, and 2 radio-phono inputs; 2 external speaker and headphone outputs; built-in speakers. Price — \$249.95.

MASTERWORK M-800

Tape speeds — 1½, 3¾ and 7½ ips. Heads — two. Record — 2-track mono. Playback — 2-track mono. Frequency response — 100-10,000 cps. Meter — VU-type. Weight — 22 lb. Other features — self-contained carrying case; microphone and radio-phono inputs; external speaker and earphone outputs; monitoring; built-in speaker. Price — \$99.95.

MIRANDA NOCTURNE

Tape speeds — 1½, 3¾ and 7½ ips. Heads — two. Motors — one. Record — 4-track mono and 4-track stereo. Playback — 4-track mono and 4-track stereo. Frequency response — 40-18,000 cps. Meters — 2 VU-type. Weight — 29 lb. Other features — self-contained wood case; 2 microphone and 2 radio-phono inputs; 2 external speaker outputs; 2 built-in speakers. Price — \$249.95.

MIRANDA SORRENTO



Tape speeds — 3¾ and 7½ ips. Heads — two. Motors — three. Record — 4-track mono and 4-track stereo. Playback — 4-track mono and 4-track stereo. Frequency response — 30-18,000 cps. Meters — 2 VU-type. Weight — 38 lb. Other features — wood case; 2 microphone and 2 radio-phono inputs; 2 preamplifier and 2 external speaker outputs; sound-on-sound; provision for remote control; two built-in speakers. Price — \$399.95.

NORELCO 200



Tape speeds — 7½ ips. Heads — two. Motors — one. Record — 4-track mono. Playback — 4-track mono (4-track stereo with external preamplifier and amplifier). Frequency response — 50-14,000 cps. Meter — electric eye. Weight — 18 lb. Other features — self-contained carrying case; microphone and radio-phono inputs; preamplifier, external speaker, and tape head outputs; sound-on-sound; built-in speaker.

NORELCO 301



Tape speeds — 15/16, 1½, 3¾ and 7½ ips. Heads — two. Motors — one. Record — 4-track mono. Playback — 4-track mono (4-track stereo with external amplifier). Frequency response — 50-18,000 cps. Meter — neon light. Weight — 29 lb. Other features — self-contained carrying case; two preamplifiers and one amplifier; microphone and radio-phono inputs; 2 preamplifier, speaker, headphone outputs; monitoring; automatic tape transport stop; built-in speaker.

NORELCO 401



Tape speeds — 15/16, 1½, 3¾ and 7½ ips. Heads — two. Motors — one. Record — 4-track mono and 4-track stereo. Playback — 4-track mono and 4-track stereo. Frequency response — 50-18,000 cps. Meter — neon light. Weight — 39 lb. Other features — self-contained carrying case; microphone and radio-phono inputs. 2 preamplifier and 2 external speaker outputs; sound-on-sound; automatic shutoff; monitoring; 2 built-in speakers.

OKI 111



Tape speeds — 3¾ and 7½ ips. Heads — two. Motors — one. Record — 2-track mono. Playback — 2-track mono. Frequency response — 60-13,000 cps. Meter — VU-type. Weight — 13.2 lb. Other features — self-contained carrying case; microphone and radio-phono inputs; preamplifier output; built-in speaker. Price — Less than \$130.

OKI 222



Tape speeds — 3¾ and 7½ ips. Heads — two. Motors — one. Record — 4-track mono. Playback — 4-track mono and 4-track stereo (with external preamplifier and amplifier). Frequency response — 50-15,000 cps. Meter — VU. Weight — 15½ lb. Other features — self-contained carrying case; microphone and radio-phono inputs; preamplifier and tape head outputs; sound-on-sound; sound-with-sound; built-in speaker. Price — less than \$190.

OKI 333



Tape speeds — 3¾ and 7½ ips. Heads — two. Motors — one. Records — 4-track mono and 4-track stereo. Playback — 4-track mono and 4-track stereo. Frequency response — 50-15,000 cps. Meters — two VU. Weight — 22 lb. Other features — 2 microphone and 2 radio-phono inputs; 2 external speaker outputs; sound-on-sound; sound-with-sound; speakers built into separate carrying case cover wings. Price — Less than \$300.

OKI 555



Tape speeds — 3¾ and 7½ ips. Heads — two. Motors — one. Record — 4-track mono and 4-track stereo. Playback — 4-track mono and 4-track stereo. Frequency response — 20-22,000 cps. Meters — two VU. Weight — 24½ lb. Other features — self-contained carrying case; 2 microphone and 2 radio-phono inputs; 2 preamplifier and 2 speaker outputs; automatic shutoff; sound-on-sound; speakers built into separate carrying case cover wings. Price — Less than \$370.

PANASONIC RQ-555

Tape speeds — 1½ and 3¾ ips. Heads — two. Motors — one. Record — 2-track mono. Playback — 2-track mono. Frequency response — 70-7000 cps. Meter — VU-type. Weight — 7¾ lb. Other features — self-contained carrying case; microphone and radio-phono inputs; phone monitoring output; built-in speaker. Price — \$99.95.

PANASONIC RQ-700

Tape speeds — 3¾ and 7½ ips. Heads — two. Motors — one. Record — 2-track mono. Playback — 2-track mono. Frequency response —

— 70-12,000 cps. Meter — VU-type. Weight — 18 lb. Other features — self-contained carrying case; microphone and radio-phono inputs; headphone output; built-in speaker. Price — \$129.95.

PENTRON PRESIDENT



Tape speeds — $3\frac{3}{4}$ and $7\frac{1}{2}$ ips. Heads — two. Motors — one. Record — 4-track mono and 4-track stereo. Playback — 4-track mono and 4-track stereo. Frequency response — 20-15,000 cps. Meters — 2 electric eyes. Weight — 32 lb. Other features — self-contained carrying case; 2 microphone and 2 radio-phono inputs; 2 external speaker outputs; voice activated recording; built-in sync pulse for slide projector sync; automatic tape transport stop; sound-with-sound, hinged side boards for beaming sound; built-in speakers. Price — \$199.95.

RCA VICTOR 1YB1

Tape speeds $1\frac{1}{8}$ and $3\frac{3}{4}$ ips. Heads — one. Motor — one. Record — 4-track mono. Playback — 4-track mono. Frequency response — 50-15,000 cps. Meter — neon light. Weight — $13\frac{1}{4}$ lb. Other features — tape cartridge loading; self-contained carrying case; microphone and radio-phono inputs; pre-amplifier output; built-in speaker. Price — \$99.95.

RCA VICTOR 1YB29A



Tape speeds — $1\frac{1}{8}$ and $3\frac{3}{4}$ ips. Heads — one. Motors — one. Record — 4-track mono. Playback — 4-track mono. Meter — electric eye. Weight — $13\frac{1}{4}$ lb. Other features — tape cartridge loading machine; self-contained carrying case; remote control microphone and radio-phono inputs; preamplifier and headphone outputs; built-in speaker. Price — not available.

RCA VICTOR 1YC1



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☐ Model 660 Sr. Stereophones

WHEN IN LOS ANGELES, BE SURE TO VISIT THE FREEMAN RECORDER SALON 733 N. HIGHLAND

Tape speeds — 1½ and 3¾ ips. Heads — one. Motors — one. Record — 4-track mono and 4-track stereo. Playback — 4-track mono and 4-track stereo. Frequency response — 40-15,000 cps. Meter — electric eye. Weight — 13¼ lb. Other features — tape cartridge loading; self-contained carrying case; microphones and radio-phono inputs; preamplifier output; built-in speakers. Price — \$169.95.

RCA VICTOR 3YD1



Tape speeds — 1½ and 3¾ ips. Heads — one. Motors — one. Record — 4-track mono, 4-track stereo. Playback — 4-track mono, 4-track stereo. Frequency response — 50-15,000 cps. Meter — electric eye. Weight — 17½ lb. Other features — tape cartridge loading; self-contained carrying case; 2 microphone and 2 radio-phono inputs; 2 preamplifier outputs; built-in speakers. Price — \$199.95.

REVERE- WOLLENSAK M2



Tape speeds — 1½ ips. Heads — two. Motors — one. Record — 2-track mono and 2-track stereo. Playback — 2-track mono and 2-track stereo. Frequency response — 40-15,000 cps. Meters — 2 neon lights. Weight — 32 lb. Other features — self-contained carrying case; Revere-Wollensak automatic tape cartridge loading with special ¼-in. tape; 2 microphone and 2 radio-phono inputs; 2 preamplifier and 2 external speaker outputs; built-in speakers. Price — \$399. M30, playback only and without amplifiers or speakers, \$269. M3, playback, preamplifiers and amplifiers, \$329. M-20, with record and playback preamplifiers only, \$339.

REVERE- WOLLENSAK M4



Tape speeds — 1½ ips. Heads — two. Motors — one. Record — 2-track stereo. Playback — 2-track stereo. Meters — 2 neon lights. Weight — 43½ lb. Other features — Revere-Wollensak automatic tape cartridge

loading with special ¼-in. tape; wood case; 2 microphone and 2 radio-phono inputs; 2 preamplifier and 2 external speaker outputs; 2 external speakers; Price — \$459.

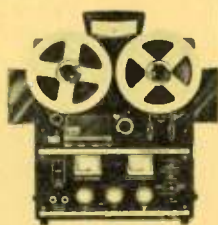
ROBERTS 192

Tape speeds — 3¾ or 7½ ips. Heads — two. Motors — one. Record — 2 or full-track mono (by interchanging heads). Playback — 2- or full-track mono. Frequency response — 40-15,000 cps. Meter — VU. Weight — 28 lb. Other features — self-contained carrying case; microphone and radio-phono inputs; tape head, external speaker, headphone outputs; microphone impedance switch; built-in speaker. Price — \$349.50.

ROBERTS 400

Tape speeds — 3¾ and 7½ (15 optional) ips. Heads — three. Motors — three. Record — 4-track mono and 4-track stereo. Playback — 4-track mono and 4-track stereo. Frequency response — 40-18,000 cps. Meters — two VU. Weight — not available. Other features — self-contained carrying case; 2 microphone and 2 radio-phono inputs; 2 preamplifier, 2 external speaker and headphone outputs; sound-on-sound; sound-with-sound; automatic reverse and repeat; built-in speakers. Price — \$699.95. Also available as deck, Model 4000-D, \$599.95.

ROBERTS 330



Tape speeds — 3¾ and 7½ (15 optional) ips. Heads — three. Motors — one. Record — 4-track mono and 4-track stereo. Playback — 4-track mono and 4-track stereo. Frequency response — 40-15,000 cps. Meters — 2 VU. Weight — 27 lb. Other features — self-contained carrying case; 2 microphones and 2 radio-phono inputs; 2 preamplifier and 2 external speaker outputs; sound-on-sound; sound-with-sound; automatic stop; built-in speakers. Price — \$349.95.

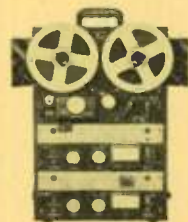
ROBERTS 455



Tape speeds — 1½, 3¾ and 7½ (15 optional) ips. Heads — three. Motors — one. Record — 4-track mono and 4-track stereo. Playback — 2 and 4-track mono and 2 and 4-track stereo. Frequency response — 40-17,000 cps. Meters — 2 VU. Weight — 64 lb. Other features — self-contained carrying case;

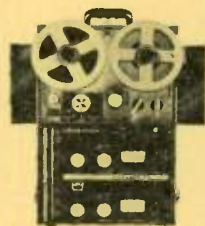
2 microphone, 2 radio-phono inputs; 2 preamplifier, 2 external speaker and headphone outputs; sound-on-sound; provision for remote control with optional accessory; automatic stop; built-in speakers. Price — \$599.95.

ROBERTS 720



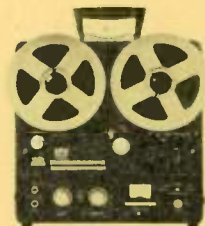
Tape speeds — 1½, 3¾ and 7½ (15 optional) ips. Heads — two. Motors — one. Record — 4-track mono and 4-track stereo. Playback — 2 and 4-track mono and 2 and 4-track stereo. Frequency response — 40-15,000 cps. Meters — 2 VU. Weight — 46½ lb. Other features — 2 microphone and 2 radio-phono inputs; 2 tape head, 2 preamplifier, and 2 external speaker outputs; sound-with-sound; automatic tape transport stop; built-in speakers. Price — \$399.95.

ROBERTS 770



Tape speeds — 1½, 3¾ and 7½ (15 optional) ips. Heads — three. Motors — one. Record — 4-track mono and 4-track stereo. Playback — 2 and 4-track mono and 2 and 4-track stereo. Frequency response — 40-22,000 cps. Meters — 2 VU. Weight — 49 lb. Other features — self-contained carrying case; 2 microphone and 2 radio-phono inputs; 2 tape head, 2 preamplifier, 2 external speaker and headphone outputs; cross field recording head for increased frequency response at 1½ and 3¾ ips.; monitor; automatic shutoff; built-in speakers. Price — \$499.95.

ROBERTS 1055



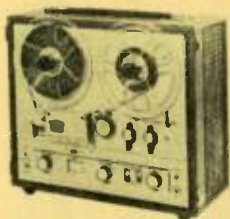
Tape speeds — 3¾ and 7½ (15 optional) ips. Heads — two. Motors — one. Record — 4-track mono and 4-track stereo. Playback — 4-track mono and 4-track stereo. Frequency response — 50-15,000 cps. Meter — VU. (switched for two channels.) Weight — 25 lb. Other features — 2 microphone and 2 radio-phono inputs; 2 preamplifier outputs; built-in speakers. Price — \$199.95.

ROBERTS 1600



Tape speeds — 1½, 3¾ and 7½ ips. Heads two. Motors — one. Record — 2-track mono. Playback — 2-track mono. Frequency response — 50-15,000 cps. Meter — VU-type. Weight — 22 lb. Other features — microphone and radio-phono inputs; external speaker output; built-in speaker. Price — \$169.95.

ROBERTS 1640



Tape Speeds — 3¾ and 7½ (15 optional) ips. Heads — two. Motors — one. Record — 4-track mono and 4-track stereo. Playback — 4-track mono and 4-track stereo. Frequency response — 40-18,000 cps. Meter — VU. (switched for either channel). Weight — 25 lb. Other features — self-contained carrying case; 2 microphone and 2 radio-phono inputs; 2 preamplifier and 2 external speaker outputs; automatic stop; sound-with-sound; built-in speakers. Price — \$259.95.

ROBERTS 1650



Tape speeds — 3¾ and 7½ (15 optional) ips. Heads — two. Motors — one. Record — 4-track mono and 4-track stereo. Playback — 4-track mono and 4-track stereo. Frequency response — 40-18,000 cps. Meters — 2 VU. Weight — 27 lb. Other features — self-contained carrying case; 2 microphone and 2 radio-phono inputs; 2 preamplifier and 2 external speaker outputs; monitoring; sound-with-sound; automatic stop; built-in speakers. Price — \$299.95. Also available with wing speakers (Model 1670), \$359.95.

SONY 102

Tape speeds — 3¾ and 7½ ips. Heads — two. Motors — one. Record — 2-track mono. Playback — 2-track mono. Frequency response — 50-12,000 cps. Meter — VU-type. Weight — 18 lb. Other features — self-contained carrying case; microphone and radio-phono inputs; preamplifier and external speaker outputs; built-in speaker. Price — less than \$129.50.

SONY 200



Tape speeds — 3¾ and 7½ ips. Heads — two. Motors — one. Record — 4-track mono and 4-track stereo. Playback — 4-track mono and 4-track stereo. Frequency response — 50-14,000 cps. Meters — and two VU-type. Weight — 27 lb. Other features — self-contained carrying case; 2 microphone and 2 radio-phono

inputs; 2 preamplifier and 2 external speaker outputs; sound-on-sound; two speakers in split carrying case cover. Price — less than \$239.50. Sony 200A, built-in speakers, less than \$170.

SONY 211TS

Tape speeds — 1½ and 3¾ ips. Heads — two. Motors — one. Record — 2-track mono. Playback — 2-track mono. Frequency response 70-8000 cps. Meter — VU-type. Weight — 10 lb. Other features — self-contained carrying case; microphone and radio-phono input; external speaker and headphone outputs; built-in pulse system synchronization for slide projector; sound-on-sound; sound-with-sound; built-in speaker. Price — less than \$139.50.



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SONY 500



Tape speeds — $3\frac{3}{4}$ and $7\frac{1}{2}$ ips. Heads — two. Motors — one. Record — 4-track mono and 4-track stereo. Playback — 4-track mono and 4-track stereo. Frequency response — 30-18,000 cps. Meters — two VU-type. Weight — 56 lb. Other features — self-contained carrying case; 2 microphone and 2 radio-phono inputs; 2 preamplifier and 2 external speaker outputs; sound-on-sound; automatic shut-off; and two speakers built into split carrying case cover. Price — less than \$399.50.

SONY 600



Tape speeds — $3\frac{3}{4}$ and $7\frac{1}{2}$ ips. Heads — three. Motors — one. Record — 4-track mono and 4-track stereo. Playback — 4-track mono and 4-track stereo. Frequency response — 30-18,000 cps. Meters — two VU-type. Weight — 44 lb. Other features — self-contained carrying case; 2 record and playback preamplifiers; 2 microphone (or magnetic cartridge) and 2 radio-phono inputs; 2 preamplifier and headphone outputs; sound-on-sound; automatic shut-off; and monitoring. Price — less than \$450.

SONY 464-SL



Tape speeds — $3\frac{3}{4}$ and $7\frac{1}{2}$ ips. Heads — two. Motors — one. Record — 4-track mono and 4-track stereo. Playback — 4-track mono and 4-track stereo (with external amplifier and speaker). Frequency response — 40-15,000 cps. Meter — two electric eyes. Weight — 25 lb. Other features — self-contained carrying case; 2 microphone and 2 radio-phono inputs; 2 preamplifier and external speaker outputs; sound-on-sound; sound-with-sound; and built-in speaker. Price — less than \$219.50. Available as deck (464-D), less than \$199.50.

STAR-LITE 700

Tape speeds — $1\frac{1}{2}$, $3\frac{3}{4}$ and $7\frac{1}{2}$ ips. Heads — two. Motors — one. Record — 2-track mono; Playback — 2-track mono. Frequency

response — 80-13,000 cps. Meter — neon light. Weight — 18 lb. Other features — microphone and radio-phono inputs; preamplifier external speaker and outputs; built-in speaker. Price — \$99.95.

STAR-LITE 900

Tape Speeds — $1\frac{1}{2}$, $3\frac{3}{4}$ and $7\frac{1}{2}$ ips. Heads — two. Motors — three. Record — 4-track mono. Playback — 4-track mono (4-track stereo with external amplifier). Frequency response — 80-13,000 cps. Meter — neon. Weight — 14 lb. Other features — self-contained carrying case; microphone and radio-phono inputs; preamplifier and external speaker outputs; built-in speaker. Price — \$139.95.

SYMPHONIC S4R09

Tape speeds — $1\frac{1}{2}$, $3\frac{3}{4}$ and $7\frac{1}{2}$ ips. Heads — two. Motors — one. Record — 4-track mono and 4-track stereo. Playback — 4-track mono and 4-track stereo. Frequency response — 40-16,000 cps. Meter — electric eye. Weight — 42 lb. Other features — self-contained carrying case; 2 microphone and 2 radio-phono inputs; 4 external speaker outputs; sound-on-sound; sound-with-sound; monitoring; built-in speakers. Price — \$219.95.

SYMPHONIC R507

Tape speeds — $1\frac{1}{2}$, $3\frac{3}{4}$ and $7\frac{1}{2}$ ips. Heads — two. Motors — one. Record — 4-track mono and 4-track stereo. Playback — 4-track mono and 4-track stereo. Frequency response — 50-15,000 cps. Meters — two VU-type. Weight — 30 lb. Other features — self-contained carrying case; microphone and radio-phono inputs; built-in speaker. Price — \$179.95.

TANDBERG 74B

Tape speeds — $1\frac{1}{2}$, $3\frac{3}{4}$ and $7\frac{1}{2}$ ips. Heads — three. Motors — one. Record — 4-track mono and 4-track stereo. Playback — 4-track mono and 4-track stereo. Frequency response — 30-20,000 cps. Meters — two electric eyes. Weight — 27 lb. Other features — wood base, 2 microphone and 2 radio-phono inputs; 2 preamplifier and 2 external speaker outputs; sound-on-sound monitor; built-in speakers. Price — \$449.50.

TANDBERG 841F



Tape speeds — $1\frac{1}{2}$ and $3\frac{3}{4}$ ips. Heads — two. Motors — one. Record — 4-track mono. Playback — 2 and 4-track mono. Frequency response — 20-13,000 cps. Meter — electric eye. Weight — 21 lb. Other features — wood base; microphone and radio-phono inputs; speaker output; remote control; built-in

speaker. Price \$312. Other models, 2 and 4-track mono, from \$219.50.

TANDBERG 92F



Tape speeds — $1\frac{1}{2}$, $3\frac{3}{4}$ and $7\frac{1}{2}$ ips. Heads — two. Motors — one. Record — 2-track mono. Playback — 2-track mono. Frequency response — 30-20,000 cps. Meter — electric eye. Weight — 22 lb. Other features — microphone and radio-phono inputs; speaker output; remote control; built-in speaker. Price — \$344.50; without remote control and remote control foot pedal, \$269.50.

TELEFUNKEN MAGNETOPHON 85

Tape speeds — $3\frac{3}{4}$ and $7\frac{1}{2}$ ips. Heads — two. Motors — one. Record — 2-track mono. Playback — 2-track mono. Frequency response — 30-20,000 cps. Meter — electric eye. Weight — 32 lb. Other features — microphone and radio-phono inputs; preamplifier, earphone and external speaker outputs; provision for accessory slide synchronizer; remote control; sound-on-sound; built-in speaker. Price — \$299.95.

TELEFUNKEN MAGNETOPHON 97



Tape speeds — $1\frac{1}{2}$, $3\frac{3}{4}$ and $7\frac{1}{2}$ ips. Heads — two. Motors — one. Record — 4-track mono and 4-track stereo. Playback — 4-track mono and 4-track stereo. Frequency response — 30-18,000 cps. Meter — electric eye. Weight — $26\frac{1}{2}$ lb. Other features — self-contained carrying case; 2 microphone and 2 radio-phono inputs; 2 preamplifier, 2 external speaker and headphone outputs; sound-on-sound; sound-with-sound; provision for external slide synchronizer; one speaker built-in, one in carrying case cover. Price — \$279.95. Model 96, 2-track mono record and 2-track mono and 4-track stereo playback. \$249.95.

TRUVOX PD-100



Tape speeds — 1 $\frac{1}{8}$, 3 $\frac{3}{4}$ and 7 $\frac{1}{2}$ ips. Heads — three. Motors — three. Record — 4-track mono and 4-track stereo. Playback — 2 and 4-track mono and 4-track stereo. Frequency response — 30-20,000 cps. Meters — 2 VU type. Weight — 40 lb. Other features — 2 record and playback preamplifiers; 2 microphone and 2 radio-phono inputs; preamplifier output; monitoring; sound-on-sound; echo effects; automatic shutoff; built-in splicing plate. Price — \$399.50.

UHER 5000



Tape speeds — 1 $\frac{1}{8}$, 3 $\frac{3}{4}$ and 7 $\frac{1}{2}$ ips. Heads — two. Motors — one. Record — 2-track mono. Playback — 2-track mono. Frequency response — 40-16,000 cps. Meter — VU-type. Weight — 17 lb. Other features — remote control microphone, radio-phono and low impedance inputs; preamplifier and external speaker outputs; slide projector sync provision; built-in speaker. Price — \$329.95.

UHER 8000S

Tape speeds — 15/16, 1 $\frac{1}{8}$, 3 $\frac{3}{4}$ and 7 $\frac{1}{2}$ ips. Heads — four. Motors — one. Record — 4-track mono and 4-track stereo. Playback — 4-track mono and 4-track stereo. Frequency response — 50-20,000 cps. Meters — two VU. Weight — 23 lb. Other features — self-contained carrying case; 3 microphone, radio and phono inputs; preamplifier and external speaker outputs; sound-on-sound; sound-with-sound; echo effects; slide projector sync; monitoring; voice operation relay available. Price — \$419.95.

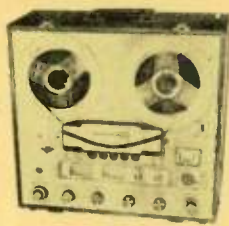
UNITED AUDIO-DUAL TG 12A

Tape speeds — 1 $\frac{1}{8}$, 3 $\frac{3}{4}$ and 7 $\frac{1}{2}$ ips. Heads — two. Motors — one. Record — 4-track mono and 4-track stereo. Playback — 4-track mono and 4-track stereo. Frequency response — 40-20,000 cps. Meters — 2 electric eyes. Weight — 32 lb. Other features — self-contained carrying case; 2 microphone and radio-phono inputs; 2 preamplifier and 2 external speaker outputs; automatic tape transport stop; sound-on-sound; built-in speakers. Price — \$349.95. Available as deck, \$245.

VERNON 47/26

Tape speeds — 3 $\frac{3}{4}$ and 7 $\frac{1}{2}$ ips. Heads — three. Motors — three. Record — 4-track mono, 4-track stereo. Playback — 2 and 4-track mono and 2 and 4-track stereo. Frequency response — 50-15,000 cps. Meters — 2 VU. Weight — 44 lb. Other features — self-contained carrying case; 2 microphone, 2 radio and 2 phono inputs; 2 preamplifier and 2 external speaker outputs; monitoring; remote control; automatic reverse play; built-in speakers. Price — Less than \$399.50.

VIKING 220



Tape speeds — 3 $\frac{3}{4}$ and 7 $\frac{1}{2}$ ips. Heads — four. Motors — three. Record — 4-track mono and 4-track stereo. Playback — 4-track mono and 4-track stereo. Frequency response — 20-25,000 cps. Meters — 2 VU. Weight

— 45 lb. Other features — 2 microphone and 2 radio-phono inputs; 2 preamplifier, 2 external speaker, and headphone outputs; automatic tape reverse playback; remote control; sound-with-sound; automatic shutoff. Price — \$860.

VIKING 770

Tape speeds — 3 $\frac{3}{4}$ and 7 $\frac{1}{2}$ ips. Heads — two. Motors — one. Record — 4-track mono and 4-track stereo. Playback — 2 and 4-track mono and 4-track stereo. Frequency response — 50-16,000 cps. Meters — two VU. Weight — not available. Other features — self-contained carrying case; 2 micro-

“Practically any use imaginable is possible with the Uher 8000 by Martel,” reported Audio Magazine.



The Uher Royal Stereo 8000 represents one of the finest and most versatile tape recorders to be offered in this country.

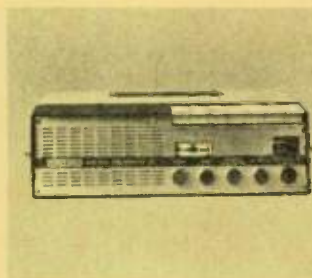
Utilizing all solid-state circuitry, it features: 4 speeds, 4 heads, 4 track stereo and 4 track mono recording and playback, synchronous sound with sound recording, multiplay sound on sound, slide projector synchronizer and echo effect offer a wide range of capabilities unlike any tape recorder or tape deck presently available.

Plus the exclusive “Akustomat” — you speak, the machine starts — you stop, the machine stops. No wasted tape. No wonder Audio Magazine used 1,457 words to describe it.

The new Uher 4000-S

“Magic in a matchbox,” stated Audio Magazine.

... combines the qualities of the finest AC operated recorders with the portability of battery operated, transistorized circuitry. The 4000-S boasts frequency response to 22,000 cps., operates in any position, illuminated VU-meter with expanded scale, rechargeable battery, 4 speed keyboard control and separate controls for recording level and long-life narrow-gap sound heads and “Akustomat” for voice-operated control. A truly professional recorder used by 125 radio stations across the country.



The new Martel 301

weighs only 12 $\frac{1}{2}$ lbs., stands one foot high and will probably make most recorders seem overpriced.

4 speeds, 3 heads, a portable recorder with full range frequency response, 8 hours of playing time, tone control for boosting frequency response at low speeds, pause control for editing tape, built-in AC converter with indicator light, dynamic remote control microphone, can be played in either horizontal or vertical position because of its positive action reel locks.

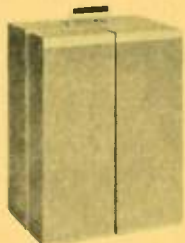


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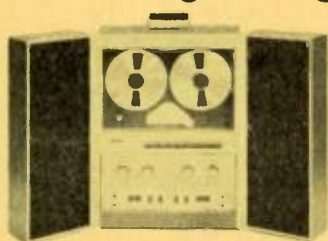
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Amplification and power supply all in one handsome, portable carrying case . . . professionally oriented keyboard control and tilt-out control panel . . . sophisticated computer-type reels and two graceful and separate detachable "stereo-supreme" speaker wings. Thank CGY for the most elegant and professional looking tape recorder you'll ever see—the Webcor Professional.

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phone and 2 radio-phonos inputs; 2 preamplifier and 2 external outputs; built-in speakers. Price — \$325. Available as deck (Model 77), \$239.

VIKING 880

Tape speeds — 3¼ and 7½ ips. Heads — three. Motors — two. Record — 2 or 4-track mono and 2 or 4-track stereo. Playback — 2 and 4-track mono and 2 and 4-track stereo. Frequency response — 30-18,000 cps. Meters — 2 VU. Weight — 45 lb. Other features — self-contained carrying case (recorder removable for custom installation); 2 microphone and 2 radio-phonos inputs; 2 preamplifier and 2 external speaker outputs; monitoring; automatic transport stop; built-in speakers. Price — \$425. Available as deck (model 88) \$339.95.

VISTA TM70

Tape speeds — 1½ and 3¼ ips. Heads — two. Motors — one. Record — 4 track mono and 4-track stereo. Playback — 4 track mono and 4-track stereo. Frequency response — 50-12,000 cps. Meter — VU-type. Weight — 19½ lb. Other features — 2 microphone inputs; 2 external speaker outputs. Price — \$159.95.

V-M 725

Tape speeds — 1½, 3¼ and 7½ ips. Heads — one. Motors — one. Record — 4-track mono. Playback — 4-track mono. Frequency response — 50-15,000 cps. Meter — none. Weight — 15 lb. Other features — self-contained carrying case; microphone input; external speaker output; sound-with-sound; built-in speaker. Price \$109.95.

V-M 730

Tape speeds — 1½, 3¼ and 7½ ips. Heads — one. Motors — one. Record — 2-track mono. Playback — 2-track mono. Frequency response — 50-15,000 cps. Meter — neon light. Weight — 21 lb. Other features — self-contained carrying case; microphone and radio-phonos inputs; preamplifier and external speaker outputs; slide projector sync provision; monitoring; built-in speaker. Price — \$169.95.

V-M 735

Tape speeds — 1½, 3¼ and 7½ ips. Heads — two. Motors — one. Record — 4-track mono. Playback — 4-track mono and 4-track stereo (with external amplifier). Frequency response — 50-15,000 cps. Meter — neon light. Weight — 22 lb. Other features — self-contained carrying case; microphone and radio-phonos inputs; 2 preamplifier, external speaker, and headphone outputs; slide projector sync; sound-on-sound; built-in speaker. Price — \$199.95. Model 736, with remote control, \$225.

V-M 738

Tape speeds — 1½, 3¼ and 7½ ips. Heads — two. Motors — one. Record — 4-track mono

and 4-track stereo. Playback — 4-track mono and 4-track stereo. Frequency response — 50-15,000 cps. Meter — neon light. Weight — 25 lb. Other features — self-contained carrying case; 2 microphone and 2 radio-phonos inputs; 2 preamplifier and 2 external speaker outputs; slide projector sync; sound-on-sound; built-in speakers. Price — \$199.95.

V-M 740

Tape speeds — 1½, 3¼ and 7½ ips. Heads — one. Motors — one. Record — 4-track mono and 4-track stereo. Playback — 4-track mono and 4-track stereo. Frequency response — 50-15,000 cps. Meter — 2 neon lights. Weight — 22 lb. Other features — self-contained carrying case; 2 microphone and combination microphone and radio-phonos inputs; 2 preamplifier, 2 external speaker, and headphone outputs; monitoring; slide projector sync; sound-on-sound. Price — \$269.95. Also available as deck (1471), \$179.95.

**WEBCOR
2500**



Tape speeds — 3¼ and 7½ ips. Heads — two. Motors — one. Record — 2-track mono. Playback — 2-track mono. Frequency response — 300-7,000 cps. Meter — none. Weight — 15 lb. Other features — self-contained carrying case; microphone input; external speaker output; built-in speaker. Price — \$109.95.

WEBCOR 2502

Tape speeds — 3¼ and 7½ ips. Heads — two. Motors — one. Record — 2-track mono. Playback — 2-track mono. Frequency response — 150-12,000 cps. Meter — none. Weight — 19 lb. Other features — self-contained carrying case; microphone input; preamplifier output; external slide projector synchronization provision; built-in speaker. Price — \$109.95.

**WEBCOR
2503**



Tape speeds — 1½, 3¼ and 7½ ips. Heads — three. Motors — one. Record — 4-track mono. Playback — 4-track mono. Frequency response — 100-15,000 cps. Meter — VU-type. Weight — 21 lb. Other features — self-contained carrying case; microphone and radio-phonos inputs; preamplifier and external speaker outputs; built-in speakers. Price — \$159.95.

WEBCOR 2520

Tape speeds — $3\frac{3}{4}$ and $7\frac{1}{2}$ ips. Heads — one. Motors — one. Record — 4-track mono and 4-track stereo. Playback — 4-track mono and 4-track stereo. Frequency response — 100-15,000 cps. Meter — neon light. Weight — 27 lb. Other features — self-contained carrying case; 2 microphone inputs; 2 external speaker outputs; 2 built-in speakers. Price — \$199.95.

WEBCOR 2522

Tape speeds — $3\frac{3}{4}$ and $7\frac{1}{2}$ ips. Heads — two. Motors — one. Record — 4-track mono and 4-track stereo. Playback — 2 and 4-track mono and 2 and 4-track stereo. Frequency response — 50-15,000 cps. Meter — 2 VU. Weight — 34 lb. Other features — self-contained carrying case; 2 microphone and radio-phono inputs; 2 preamplifier and 2 external speaker outputs; sound-with-sound; automatic shut-off; built-in speakers. Price — \$259.95.

WEBCOR PROFESSIONAL



Tape speeds — $1\frac{1}{8}$, $3\frac{3}{4}$ and $7\frac{1}{2}$ ips. Heads — two. Motors — one. Record — 4-track mono and 4-track stereo. Playback — 4-track mono and 4-track stereo. Frequency response — 40-18,000 cps. Meters — 2 VU-type. Weight 45 lb. Other features — self-contained carrying case; 2 microphone and 2 radio-phono inputs; 2 preamplifier and 2 external speaker outputs; sound-with-sound; sound-on-sound; reverse play; speakers in wing carrying case covers. Price — Under \$500.

WOLLENSAK 1220



Tape speeds — $3\frac{3}{4}$ and $7\frac{1}{2}$ ips. Heads — two. Motors — one. Record — 2 and 4-track mono. Playback — 2 and 4-track mono. Frequency response — 50-17,000 cps. Meter — VU. Weight — $27\frac{1}{2}$ lb. Other features — self-contained carrying case; microphone and radio-phono inputs; built-in speaker. Price — \$129.

WOLLENSAK 1280

Tape speeds — $3\frac{3}{4}$ and $7\frac{1}{2}$ ips. Heads — two. Motors — one. Record — 4-track mono and 4-track stereo. Playback — 4-track mono and 4-track stereo. Frequency response — 50-

17,000 cps. Meters — 2 VU. Weight — 30 lb. Other features — built-in carrying case; 2 microphone and 2 radio-phono inputs; preamplifier and external speaker outputs; monitoring; 2 speakers built into split carrying cover. Price — \$199. Also available as deck, \$169.

WOLLENSAK 1400



Tape speeds — $3\frac{3}{4}$ and $7\frac{1}{2}$ ips. Heads — two. Motors — one. Record — 2-track mono. Frequency response — 40-13,000 cps. Meter — neon light. Weight — 20 lb. Other features — self-contained carrying case; microphone and radio-phono inputs; preamplifier and external speaker outputs; built-in speaker. Price — \$149.

WOLLENSAK 1500



Tape speeds — $3\frac{3}{4}$, $7\frac{1}{2}$ ips. Heads — two. Motors — one. Record — 2-track mono. Playback — 2-track mono. Frequency response — 40-15,000 cps. Meter — neon light. Weight — 20 lb. Other features — self-contained carrying case; microphone and radio-phono inputs; preamplifier and external speaker outputs; built-in speaker. Price — \$179.

WOLLENSAK 1515

Tape speeds — $3\frac{3}{4}$ and $7\frac{1}{2}$ ips. Heads — two. Motors — one. Record — 2 and 4-track mono. Playback — 2 and 4-track mono and 2 and 4-track stereo (with external amplifier). Frequency response — 40-17,000 cps. Meter — neon light. Weight — 20 lb. Other features — self-contained carrying case; two preamplifiers and one amplifier; 2 microphone and 2 radio-phono inputs; 2 preamplifier (one for external amplifier needed for stereo) external speaker outputs; built-in speaker. Price — \$199.

WOLLENSAK 1580

Tape speeds — $3\frac{3}{4}$ and $7\frac{1}{2}$ ips. Heads — two. Motors — one. Record — 2 and 4-track mono and 2 and 4-track stereo. Playback — 2 and 4-track mono and 2 and 4-track stereo. Frequency response — 40-18,000 cps. Meters — 2 neon lights. Weight — 26 lb. Other features — self-contained carrying case; 2 microphone and 2 radio-phono inputs; 2 preamplifier and 2 external speaker outputs; sound-with-sound; monitoring; built-in speakers. Price — \$319. Available as deck (model 1780) \$269.

64

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WOLLENSAK 1980



Tape speeds — 3¾ and 7½ ips. Heads — two. Motors — one. Record — 2 and 4-track mono and 2 and 4-track stereo. Playback — 2 and 4-track mono and 2 and 4-track stereo. Frequency response — 40-18,000 cps. Meters — 2 VU. Weight — 42 lb. Other features — self-contained carrying case; 2 microphone and 2 radio-phono inputs; 2 preamplifier and 2 external speaker outputs; sound-with-sound; monitoring; built-in speakers. Price — \$379. Also available without speaker (Model 1981), \$340.

Tape Decks

BELL T-347

Tape speeds — 3¾ and 7½ ips. Heads — three. Motors — three. Record — 4-track mono and 4-track stereo. Playback — 4-track mono and 4-track stereo. Frequency range — 40-16,000 cps. Meters — 2 VU. Weight — 35 lb. Other features — Record and playback preamplifiers; 2 microphone and 2 radio-phono inputs; 2 preamplifier, and headphone outputs; sound-on-sound; echo effects. Price — \$319.95.

CONCORD R-2000

Tape speeds — 3¾ and 7½ ips. Heads — four. Motors — three. Record — 4-track mono and 4-track stereo. Playback — 4-track mono and 4-track stereo. Frequency response — 50-15,000 cps. Meters — 2 VU. Weight — 46 lb. Other features — record and playback preamplifiers; 2 microphone and 2 radio-phono inputs; 2 preamplifier outputs; sound-on-sound.

CROWN 714C

Tape speeds — 3¾, 7½ and 15 ips. Heads — two. Motors — three. Record — 4-track mono and 4-track stereo. Playback — 2 and 4-track mono and 2 and 4-track stereo. Frequency response — 50 to 28,000 cps. Meters — two. Weight — 50 lb. Other features — recording and playback preamplifiers, microphone and/or radio-phono input; 2 preamplifier outputs. Price — \$795. Available in 2 and 4-track mono and 2 and 4-track stereo record and playback versions.

CROWN 801

Tape speeds — 3¾, 7½ and 15 ips. Heads — three. Motors — three. Record — full-track mono. Playback — full-track mono.

Frequency responses — 30-30,000 cps. Meter — VU. Weight — 50 lb. Other features — record preamplifier; microphone or radio-phono 2-channel input; preamplifier and headphone outputs. Price — \$945. Available as 2 or 4-track stereo from \$855 to \$1,160.

CROWN SS824

Tape speeds — 1½, 3¾ and 7½ ips. Heads — three. Motors — three. Record — 4-track mono and 4-track stereo. Playback — 4-track mono and 4-track stereo. Frequency response — 50-30,000 cps. Meters — two VU. Weight — 60 lb. Other features — 2 record and playback preamplifiers; microphone or radio-phono 2-channel input; preamplifier and headphone output. Price — \$1,175; 2-track stereo version, \$1,220.

EICO RP100

Tape speeds — 3¾ and 7½ ips. Heads — three. Motors — three. Record — 4-track mono and 4-track stereo. Playback — 2 and 4-track mono and 2 and 4-track stereo. Frequency response — 25-18,000 cps. Meters — two VU. Weight — 48 lb. Other features — record and playback preamplifiers; 2 microphone, 2 radio and 2 phono inputs; 2 preamplifier and headphone outputs; sound-on-sound. Price — \$450, wired; in semi-kit form, \$299.95.

EICO 2400

Tape speeds — 3¾ and 7½ ips. Heads — two. Motors — three. Record — 4-track mono and 4-track stereo. Playback — 4-track mono and 4-track stereo. Frequency response — 30-15,000 cps. Meters — two electric eyes. Weight — 34 lb. Other features — record and playback preamplifiers; 2 microphone and 2 radio-phono inputs; 2 preamplifier and headphone outputs; sound-on-sound. Price — \$269. Semi-kit, \$119.95.

FREEMAN 200DPA

Tape speeds — 3¾ and 7½ ips. Heads — four. Motors — three. Record — 4-track mono and 4-track stereo. Playback — 4-track mono and 4-track stereo. Frequency response — 35-16,000 cps. Meters — two VU. Weight — 55 lb. Other features — record and playback preamplifiers; 2 microphone and 2 radio-phono inputs; 2 preamplifier outputs; automatic reverse; continuous play; sound-on-sound; and sound-with-sound; and echo chamber effects. Price — \$499.50.

HEATH AD-22

Tape speeds — 3¾ and 7½ ips. Heads — two. Motors — one. Record — 4-track mono and 4-track stereo. Playback — 2 and 4-track mono and 4-track stereo. Frequency response — 40-15,000 cps. Meters — two VU. Weight — 23 lb. Other features — record and playback preamplifiers; 2 microphone and 2 radio-phono inputs; 2 preamplifier outputs. Price — Kit, \$159.95.

KNIGHT KN 400A

Tape speeds — 3¾ and 7½ ips. Heads — three. Motors — three. Record — 4-track mono and 4-track stereo. Frequency response — 40-17,000 cps. Meters — none. Weight — 20 lb. Other features — tape transport only designed for use with Knight KN-4003 preamplifier; automatic shutoff. Price — \$129.95.

KNIGHT KN-4401

Tape speeds — 3¾ and 7½ ips. Heads — two. Motors — one. Record — 4-track mono and 4-track stereo. Playback — 4-track mono and 4-track stereo. Frequency response — 30-18,000 cps. Meters — two VU. Weight — 31 lb. Other features — record and playback preamplifiers; 2 microphone and 2 radio-phono inputs; 2 preamplifier outputs. Price — \$169.95.

MAGNECORD 1021

Tape speeds — 3¾ and 7½ ips. Heads — three. Record — full track mono. Playback — full and 2-track mono. Frequency response — 45-18,000 cps. Meter — VU. Weight — 47 lb. Other features — record and playback preamplifier; low impedance microphone, balanced bridge, unbalanced bridge, mixing bridge and auxiliary inputs; preamplifier, speaker, headphone and 150/600 ohm balanced outputs; sound-on-sound; monitoring speaker. Price \$659.

MAGNECORD 1022

Tape speeds — 7½ and 15 ips. Heads — four. Motors — three. Record — 2-track mono and 2-track stereo. Frequency response 35-22,000 cps. Meters — two VU. Weight — 47 lb. Other features — record and playback preamplifiers; 2 low impedance microphone, 2 bridging, 2 balanced or unbalanced, and 2 auxiliary inputs; 4 preamplifier and headphone outputs; sound-on-sound. Price — \$739.

MAGNECORD 1024

Tape speeds — 3¾ and 7½ ips. Heads — four. Motors — three. Record — 4-track mono and 4-track stereo. Playback — 4-track mono and 4-track stereo. Frequency response — 45-18,000 cps. Meters — two VU. Weight — 47 lb. Other features — record and playback preamplifiers; 2 microphone, 2 radio-phono and 2 auxiliary inputs; 4 preamplifier and headphone outputs; remote control. Price — \$595.

MAGNECORD 1028

Tape speeds — 7½ and 15 ips. Heads — four. Motors — three. Record — 2-track mono and 2-track stereo. Playback — full and 2-track mono and 2-track stereo. Frequency response — 35-18,000 cps. Meters — two VU. Weight — 47 lb. Other features — two playback preamplifiers and two monitoring amplifiers; 2 microphone and 2 radio-phono

inputs; 2 preamplifier outputs; automatic tape transport stop; sound-on-sound. Price — \$995.

MAGNECORD 1048

Tape speeds — 3¾ and 7½ ips. Heads — four. Motors — three. Record — 4-track mono and 4-track stereo. Frequency response — 40-16,000 cps. Meters — two VU. Weight — 47 lb. Other features — record and playback preamplifiers; 2 microphone and 2 radio-phono inputs; 2 preamplifier outputs. Price — \$995. Also available in 2-track mono and stereo version.

NEWCOMB TX10

Tape speeds — 3¾ and 7½ ips. Heads — three. Motors — one. Record — 4-track mono and 4-track stereo. Playback — 2 and 4-track mono and 2 and 4-track stereo. Frequency response — 30-18,000 cps. Meters — 2 VU. Weight — 36½ lb. Other features — 2 recording and playback preamplifiers; 2 microphone and 2 radio-phono inputs; 2 preamplifier outputs; sound-on-sound; monitoring; automatic shutoff. Price — \$750 (unmounted). Available as 2-track stereo record and playback with 7½ and 15 ips, \$825.

ROBERTS 1660-D

Tape Speeds — 3¾ and 7½ ips. Heads — two. Motors — one. Record — 4-track mono and 4-track stereo. Playback — 4-track mono and 4-track stereo. Frequency response — 30-15,000 cps. Meters — 2 VU. Weight — 25 lb. Other features — record and playback preamplifiers; 2 microphone, 2 radio-phono inputs; 2 preamplifier outputs; sound-on-sound; sound-with-sound. Price — \$249.95.

SONY 250

Tape speeds — 3¾ and 7½ ips. Heads — two. Motors — one. Record — 4-track mono and 4-track stereo. Playback — 4-track mono and 4-track stereo. Frequency response — 50-14,000 cps. Meters — two VU. Weight — not available. Other features — walnut base; 2 record and playback preamplifiers; 2 preamplifier outputs; automatic shutoff. Price — \$119.50.

SONY 263-D

Tape speeds — 3¾ and 7½ ips. Heads — three. Motors — one. Record — 4-track mono and 4-track stereo. Playback — 4-track mono and 4-track stereo. Frequency response — 20-20,000 cps. (head capability). Meters — none. Weight — 12 lb. Other features — transport mechanism only; designed for use with Sony Amplifier (SRA-2L). Price — less than \$119.50.

SONY 777S-2

Tape speeds — 3¾ and 7½ ips. Heads — three. Motors — three. Record — 2-track mono and 2-track stereo. Playback — 2-track mono and 2 and 4-track stereo. Frequency re-

sponse — 30-18,000 cps. Meters — two VU. Weight — 43 lb. Other features — record and playback preamplifiers (unit designed for use with SSA-777 amplifier/speaker combinations); self-contained carrying case; 2 microphone and 2 radio-phono inputs; 2 preamplifier and headphone outputs; monitoring; sound-on-sound; remote control. Price — less than \$695. Also available in 4-track mono and stereo record and 2 and 4-track mono and stereo playback (777S-4).

TANDBERG MODEL 64

Tape speeds — 1½, 3¾ and 7½ ips. Heads — three. Motors — one. Record — 4-track mono and 4-track stereo. Playback — 4-track mono and 4-track stereo. Frequency response — 30-20,000 cps. Meters — two electric eyes. Weight — 22 lb. Other features — wood base, recording and playback preamplifier; 2 microphone, 2 radio and 2 magnetic phono cartridge inputs; 2 preamplifier outputs; sound-on-sound; monitoring; remote control. Price — \$498. Also available in 2-track stereo version.

VIKING 87 SUPER PRO

Tape speeds — 3¾ and 7½ ips. Heads — three. Motors — two. Record — 2 and 4-track mono. Playback — 2- and 4-track mono and 2- and 4-track stereo. Frequency response — 30-16,000 cps. Meters — 2 VU. Weight — 40 lb. Other features — 2 record and playback preamplifiers; 2 microphone and 2 radio-phono inputs; 2 preamplifier and 2 headphone outputs; sound-on-sound; sound-with-sound; transport mechanism and amplifiers may be purchased separately; choice of number of recording tracks depends on model. Price — from \$382 to \$414. Transport only, \$138 to \$185.

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CORP. OF
AMERICA
312A-312E



Tape speeds — 15/16, 1½, 3¾, 7½ or 15 ips, depending on model. Heads — two. Motors — two. Record — full or 2-track mono depending on model. Playback — full or 2-track mono depending on model. Frequency response — 50-15,000 cps. Meter — VU. Weight — 8 lb. Other features — powered by 6 mercury batteries, car battery, or AC; microphone input. Preamplifier and headphone output; designed for audio visual and broadcasting applications. Price — from \$488 to \$644 depending on case, tape speed (or speeds), and number of recording tracks.

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Record nature sounds. Set on auto operation. Sound starts and stops it automatically.

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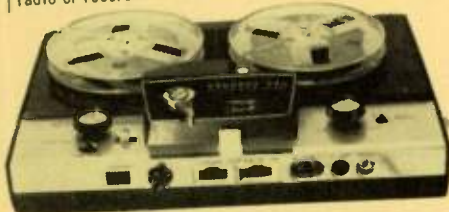


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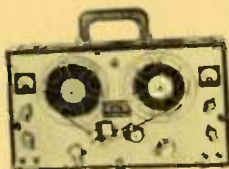
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314A-314E



Tape speeds — 15/16, 1 7/8, 3 3/4, 7 1/2 and 15 ips, depending on model. Heads — two. Record — 2-track stereo. Playback — 2-track stereo. Frequency response — 50-15,000 cps. Meters — two VU. Weight — 12 lb. Other features — powered by 6 mercury batteries; 2 microphone inputs; 2 preamplifier and headset outputs; all units available as single or dual speed models; designed for broadcasting and motion picture applications. Price — \$624 to \$644 depending on tape speed.

BUTOBA MT-5

Tape speeds — 1 7/8 and 3 3/4 ips. Heads — two. Motors — two. Record — 2-track mono. Playback — 2-track mono. Frequency response — 50-13,000 cps. Meter — electric eye. Weight — 12 lbs. Other features — powered by 8 1 1/2-volt batteries or AC with adapter, microphone and radio-phono inputs; preamplifier, speaker, and head-phone outputs; built-in speaker. Price — \$199.95.

BUTOBA MT-7



Tape speeds — 1 7/8 and 3 3/4 ips. Heads — two. Motors — two. Record — 2-track mono. Playback — 2-track mono. Frequency response — 50-13,000 cps. Meter — electric eye; Weight — 4 lb. Other features — powered by 4 penlight batteries (can be converted to either AC or automobile battery operation); microphone and radio-phono inputs; external speaker and earphone outputs; built-in speaker. Price — \$99.95 (MT-7F with remote control mike, \$109.95).

CHANNEL
MASTER 6545



Tape speeds — 1 7/8, 3 3/4 ips. Heads — two. Motors — one. Record — 2-track mono. Playback — 2-track mono. Frequency response — 150-7000 cps. Meter — VU-type. Weight — not available. Other features — powered by 6 C-cell batteries; remote con-

trol microphone and radio-phono inputs; earphone output; built-in speaker. Price — \$129.95.

CONCORD 330



Tape speeds — 1 7/8 and 3 3/4 ips. Heads — two. Motors — one. Record — 2-track mono. Playback — 2-track mono. Frequency response — 50-10,000 cps. Meter — VU-type. Weight — 6 lb. Other features — powered by 6 D-cell batteries or AC adapter; remote control microphone input; external speaker output; voice actuated recording; slide sync; manual tape speed control for movies. Price — less than \$200.

COURIER TRANSCORDER DA 101

Tape speeds — 1 7/8 and 3 3/4 ips. Heads — two. Motors — one. Record — 2-track mono. Playback — 2-track mono. Frequency response — 150-7000 cps. Meter — VU-type. Weight — 8 lb. Frequency response — 150-7,000 cps. Other features — powered by 6 penlight batteries or with AC adapter; remote control microphone input; external speaker and earphone outputs. Price — less than \$110.

CRAIG TR403

Tape speeds — 1 7/8 and 3 3/4 ips. Heads — two. Motors — one. Record — 2-track mono. Playback — 2-track mono. Frequency response — 150-6000 cps. Meter — VU-type. Weight — 5 lb. Other features — powered by 10 penlight batteries; microphone input; external speaker output; built-in speaker. Price — \$134.95.

CRAIG TR505

Tape speeds — 1 7/8 and 3 3/4 ips. Heads — two. Motors — one. Record — 2-track mono. Playback — 2-track mono. Frequency response — 150-7500. Meter — VU-type. Weight — 10 lb. Other features — powered by 6 D-cell batteries and built-in adapter. Remote control microphone; radio-phono inputs; external speaker output; built-in speaker. Price — \$159.95.

CRAIG TR306

Tape speeds — 15/16, 1 7/8 and 3 3/4 ips. Heads — two. Motors — one. Record — 4-track mono. Playback — 4-track mono and 4-track stereo (with external amplifier). Frequency response — 100-10,000 cps. Meter — VU-type. Weight — 7 1/2 lb. Other features — powered by 6 penlight batteries or built-in AC adapter; remote control microphone, radio-phono inputs; preamplifier and external speaker outputs; built-in speaker; foot switch. Price — \$199.95.

FANON-MASCO 402

Tape speeds — 1½ and 3¾ ips. Heads — two. Motor — one. Record — 2-track mono. Playback — 2-track mono. Frequency response — 150-8000 cps. Meter — VU-type. Weight — 6 lb. Other features — powered by 6 D-cell batteries; remote control microphone and radio-phono inputs; external speaker output; built-in speaker. Price — \$99.95.

FANON-MASCO FTR-406



Tape speeds — 1½ and 3¾ ips. Heads — two. Motors — one. Record — 2-track mono. Playback — 2-track mono. Frequency response — 100-8000 cps. Meter — VU-type. Weight — 9 lb. Other features — powered by 6 C-cell batteries or with built-in AC adapter; remote control microphone and radio-phono inputs; external speaker output; built-in speaker. Price — \$114.95.

FI-CORD 202



Tape Speeds — 3¾ and 7½ ips. Heads — two. Motors — one. Record — 2-track mono. Playback — 2-track mono. Frequency response — 50-12,000 cps. Meter — VU. Weight — 6¾ lb. Other features — powered by 7 1.4-volt mercury batteries, or AC or car battery with accessory adapters; 2 microphone inputs; preamplifier and external speaker outputs; remote control; built-in speaker. Price — \$339.

FREEMAN 550 SENIOR



Tape speeds — 1½, 3¾ and 7½ ips. (with optional capstan bushing and pinch wheel kit). Heads — two. Motors — one. Record — 2-track mono. Playback — 2-track mono. Frequency response — 65-12,000 cps. Meter — VU-type. Weight — 5½ lb. Other features — powered by 6 penlight batteries or AC with adapter; remote control microphone and radio-phono inputs; earphone and external speaker outputs; built-in speaker. Price — \$159.50.

FREEMAN 660 SENIOR

Tape speeds — 1½ (with special capstan sleeve) 3¾ and 7½ ips. Heads — two. Motors — one. Record — 2-track mono; Playback — 2-track mono. Frequency response — 65-15,000 cps. Meter — VU-type. Weight — 8½ lb. Other features — powered by six penlight batteries or AC with built-in adapter; remote control microphone and radio-phono inputs; preamplifier and external speaker outputs; stroboscope control 3¾ and 7½ ips; and built-in speaker. Price — \$199.50.

GELOSO UNICORDER 61



Tape speeds — 1½ and 3¾ ips. Heads — two. Motors — one. Record — 2-track mono. Playback — 2-track mono. Frequency response — 80-8000 cps. Meter — electric eye. Weight — 13 lb. Other features — powered by 10 penlight batteries or AC; remote control microphone and radio-phono inputs; extension speaker output; built-in speaker; and strobe disc for manually controlled sync with 8mm projector. Price — \$149.95.

KOWA 700

Tape speeds — 1½ and 3¾ ips. Heads — one. Motor — one. Record — 2-track mono. Playback — 2-track mono. Frequency response — 150-7000 cps. Meter — VU-type. Weight — 4½ lb. Other features — powered by 6 penlight batteries and one 9-volt battery or AC with adapter; remote control microphone inputs, earphone monitor and external speaker outputs; built-in speaker. Price — \$109.

MARTEL 301



Tape speed — 15/16, 1½, 3¾ and 7½ ips. Heads — three. Motors — one. Record — 2-track mono. Playback — 2-track mono. Frequency response — 60-15,000 cps. Meter — VU-type. Weight — 12 lb. Other features — powered by 6 D-cell batteries or AC with built-in adapter; remote control microphone and radio-phono inputs; preamplifier and head-phone monitor outputs; built-in speaker. Price — \$199.95.

MIRANDA MIRANDETTE

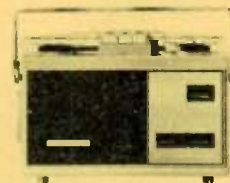
Tape speeds — 1½ and 3¾ ips. Heads — two. Motors — one. Record — 2-track mono. Playback — 2-tracks mono. Frequency response

— 200-6,000 cps. Meter — VU-type. Weight — 7¼ lb. Other features — powered by 4 D-cell batteries or AC; remote control microphone and extension speaker output; built-in speaker. Price — \$169.95.

NAGRA III

Tape speeds — 3¾, 7½ and 15 ips. Heads — four. Motors — one. Record — full track mono. Playback — full track mono. Frequency response — 30-18,000 cps. Meters — VU, battery, and Pilotone (movie sync). Weight — 15 lb. Other features — powered by 12 D-cell batteries; 4 microphone inputs; preamplifier output; monitor; neo-pilot for motion picture sync (4th head) driven by camera generator. Price — \$1,049.60.

NORELCO 101



Tape speeds — 1½ ips. Heads — two. Motors — one. Record — 2-track mono. Playback — 2-track mono. Frequency response — 80-8000 cps. Meter — VU-type. Weight — 7 lb. Other features — powered by 6 D-cell batteries or AC with adapter; microphone and radio-phono inputs; preamplifier output; remote control provision; built-in speaker.

NORELCO 150

Tape speeds — 1½ ips. Heads — two. Motors — one. Record — 2-track mono. Playback — 2-track mono. Frequency response 120-6000 cps. Meter — VU-type. Weight — 3 lb. Other features — powered by 5 C-cell batteries or AC with adapter; uses special Norelco tape cartridge; remote control microphone input; external speaker output; remote unit may be separated from microphone; built-in speaker.

OLYMPUS PENCORDER 524-D

Tape speeds — 1½ and 3¾ ips. Heads — two. Motors — one. Record — 2-track mono. Playback — 2-track mono. Frequency response — 00-00,000. Meter — VU-type. Weight — 5¼ lb. Other features — powered by 6 C-cell batteries or AC with adapter; remote control microphone and radio-phono inputs; earphone output; built-in speaker. Price — \$159.95. 524-F, without counter, \$139.95; 524, without fast forward, \$119.95.

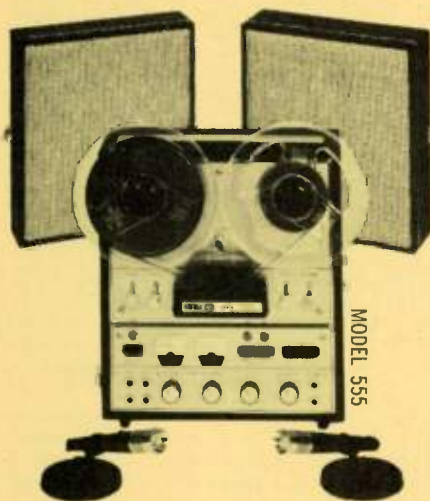
PANASONIC RQ-115

Tape speeds — 1½ and 3¾ ips. Heads — two. Motors — one. Record — 2-track mono. Playback — 2-track mono. Frequency response — 100-7000 cps. Meter — VU-type. Weight — 4½ lb. Other features — powered by 12 penlight batteries or AC with adapter; remote

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MODEL 555 Stereophonic record and playback (solid state)*. Less than \$370.00

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CITY STATE ZIP

control microphone input; earphone output; built-in speaker. Price — \$99.50.

PHONO TRIX 88B



Tape Speed — 1 7/8 ips. Heads — two. Motors — one. Record — 2-track mono. Playback — 2-track mono. Frequency response — 100-6000 cps. Meter — none. Weight — 2 3/4 lb. Other features — powered by 3 C-cell and 3 penlight batteries; microphone input; earphone output; remote control. Price — \$149.95.

RICOH COMMENTATOR



Tape speeds — 1 7/8 and 3 3/4 ips. Heads — one. Motors — one. Record — two-track mono. Playback — two-track mono. Frequency response — 150-6000 cps. Meter — VU-type. Weight — 5 lb. Other features — powered by 6 penlight batteries; microphone and radio-phono inputs; earphone output; built-in speaker. Price — \$109.95.

SONY 801-A



Tape speeds — 1 7/8 and 3 3/4 ips. Heads — two. Motors — one. Record — 2-track mono. Playback — 2-track mono. Frequency response — 90-9500 cps. Meter — VU-type. Weight — 13 lb. Other features — powered by 6 D-cell batteries or AC with adapter; remote control microphone and radio-phono inputs; external speaker and earphone outputs; built-in speaker. Price — less than \$250.

SOUTHERN PRECISION 2548



Tape speeds — 1 7/8 and 3 3/4 ips. Heads — two. Record — 2-track mono. Playback — 2-track mono. Frequency response — no available. Meter — VU-type. Weight — 7 1/4 lb. Other features — powered by 6 penlight batteries; microphone and radio inputs extension speaker output; remote control telephone pick-up; built-in speaker. Price — \$119.50.

TELEFUNKEN MAGNET- OPHON 300



Tape speeds — 3 3/4 ips. Heads — two. Motors — one. Record — 2-track mono. Playback — 2-track mono. Frequency response — 40-14,000 cps. Meter — VU-type. Weight — 7 1/2 lb. Other features — powered by 5 D-cell batteries or rechargeable nickel cadmium battery or AC (with battery charger); microphone and radio-phono and high impedance inputs amplifier, preamplifier, and earphone outputs built-in speaker. Price \$169.95.

UHER 4000S



Tape speeds — 15/16, 1 7/8, 3 3/4 and 7 1/2 ips. Heads — two. Motors — one. Record — 2-track mono. Playback — 2-track mono. Frequency response — 50-22,000 cps. Meter — VU-type. Weight — 7 lb. 6 1/2 oz. Other features — powered by 5 nickel cadmium batteries, or 5 D-cell, or rechargeable storage battery or AC (with combination power and recharger unit); remote control microphone and radio-phono inputs; preamplifier and external speaker outputs; provision for slide sync accessory; provision for voice controller operation; built-in speaker. Price — \$419.95.

WOLLENSAK 600



Tape speeds — 1 7/8 and 3 3/4 ips. Heads — two. Motors — one. Record — 2-track mono. Playback — 2-track mono. Frequency response — 250-5000 cps. Meter — VU type. Weight — 4 1/2 lb. Other features — powered by 6 penlight batteries and one 9-volt battery or AC; microphone input; extension speaker output; remote control; built-in speaker. Price — \$119.



Cordon Bleu, 3YD1



PLACE RCA CARTRIDGE IN POSITION
... So simple a child can do it.

SNAP CARTRIDGE IN PLACE
... Your hands do not touch the tape!!

YOU'RE READY TO RECORD OR PLAY
... within seconds!

RCA Victor "Instantape" The "all-in-one" Stereo Tape Cartridge Recorder!

No reels to thread! Just insert cartridge and start! Each cartridge contains 600 ft. of Mylar tape 1 mil thick. Records Stereo up to 1 hr. at $3\frac{3}{4}$ ips, up to 2 hrs. at $1\frac{7}{8}$ ips... Mono up to 2 hrs. at $3\frac{3}{4}$ ips, up to 4 hrs. at $1\frac{7}{8}$ ips. As little as $3\frac{1}{2}$ seconds to change cartridges! Case safeguards valuable recordings.

Two speakers deliver excellent stereo reproduction on home recordings and pre-recorded tape... with sound separation up to 10 ft.!

Ideal as a tape deck! Plug-in jack

lets you record and play back Stereo and Mono through properly equipped Stereo hi-fi, TV or radio.

Plus these added features! Dual high-impedance ceramic mikes; digital tape counter; dual ray recording monitor; erase-proof interlock; 4-pole motor with bearings sealed in oil for life; automatic shut-off.

Pre-recorded cartridges available by top artists in classical, popular, jazz and leading musicals.

You can own an RCA Victor "Instantape" Cartridge Recorder for only

\$99.95* for the Prompter, monaural. The Cordon Bleu, shown above, is priced at \$199.95*.

*Manufacturer's nationally advertised prices, optional with dealer. All prices, specifications subject to change.

See Walt Disney's "Wonderful World of Color," Sundays, NBC-TV Network.



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Free, at many dealers, "How to" tape recorder booklet and Tape Cartridge offer with purchase.

IF YOU'RE LOOKING FOR: AUTOMATIC TAPE CHANGING, THE BEST IN REEL-TO-REEL, SOLID-STATE, LOW-COST, EXTRA-LONG PLAYING TIME, EXTENDED SPEAKERS, PROFESSIONAL FEATURES, DECORATOR STYLING, TAPE DECKS, PUSH-BUTTON OPERATION, TRUE PORTABILITY....



WHAT YOU WANT IS A REVERE-WOLLENSAK!

Whether you're a sound-on-tape "pro" or even if you can't tell a capstan from a cable, there is just one brand name you need to know. Revere-Wollensak. The most comprehensive, the most unique line of tape recorders in the world. Everything from reel-to-reel of every shape, size and description to the world's only self-changing tape systems. Whatever your taste in tape . . . What You Want Is Revere-Wollensak! Pick the one that's just right for you. Now. At your nearest Revere-Wollensak dealer.

3M
COMPANY

Products from 82

Superex goes lightweight

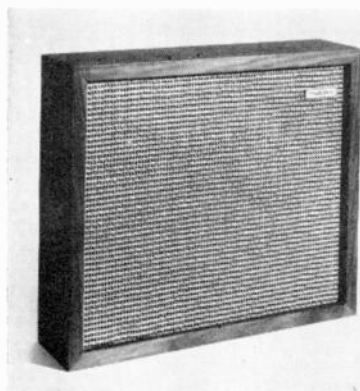
Superex Electronics has a new model, lightweight Sterophone, Model SX-800. The slim-line design uses a specially designed sound capsule. It is housed in high-impact



plastic ear cups with high-density poly-foam cushions to shut out background noise and provide comfortable listening even for those who wear glasses. Fully adjustable head band and separate adjustment centers are designed to give a custom fit for high quality sound reproduction. Phones weigh 6 ounces. Frequency response is listed as 30 to 15,000 cps. Strain-relieved cord and standard stereo-plug termination are included. Selling price is listed as \$21.95.

Trusonic starts new line

Trusonic's Lyra is first of new line of packaged speakers. The new unit is compact, measuring only 14" x 16" x 4". This small size was planned to fit it into table-top, wall-hung, or other applications demanding a compact speaker unit that still delivered high



quality sound. Within each cabinet are two speakers of a new type, CR-50. They will take over 25 watts of power with ease, according to Trusonic, who report them smooth from 25 20,000 cps.

Trusonic's engineers and designers state that by placing the CR-50 in a walnut cabinet engineered to their characteristics, Trusonic has achieved the "live-presence" upon which they consider the company built its reputation. The cabinet, they believe, is of an appearance sure to meet wide family, as well as audiophile, acceptance. Wood in the cabinet is select walnut. A black hairline is set into the sides to enhance the Italian finish. Also featured is Trusonic's lifetime renewable warranty. For further information, write Trusonic, 389 Fair Oaks Ave., Pasadena, Calif.

Recorder fits pocket

A real pocket tape recorder has come from Channel Master Corp. The 23-ounce, transistorized miniature features a "double-decker" tape cartridge for instant loading. The unique cartridge design of the Lodestar Model 6546 eliminates tape threading. At the end of one side, the cartridge is



simply slid out, reversed, and slid back. The recorder can be reloaded while in its leather carrying case.

The Lodestar has a design similar to that of a 35-mm camera. The satin finish die-cast aluminum housing measures 6½" x 3½" x 1⅝".

All controls are at the top of the unit for easy access and simple operation. The user can do everything "from the hip"—even change tapes. A simple knob controls all operating functions: Record, Rewind, Stop, Payback. An indicator meter reads recording level; in conjunction with the speed regulator, it assures constant tape speed even when batteries get weaker. It also provides a check on the condition of the batteries.

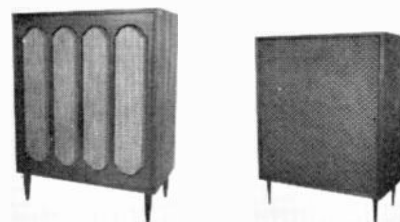
The cartridge features a window that indicates the remaining tape

running time. It is visible even with the carrying case on.

The mike has a clip for use on a pocket, belt, etc. Or it will stand on a flat surface. Other accessories include a private earphone.

Hartley ships new models

The Mark III and Mark IV Concertmasters, two full-size loudspeaker systems with exceptional bass response have been placed on sale by the Hartley Products Company. The two new speaker systems are identical in size, measuring 38 inches high by 29 wide by 16 inches deep. The Hartley-Luth Mark III is housed in a mod-

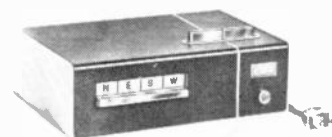


ern oiled walnut enclosure and sells for \$495. The Mark IV Concertmaster, styled in traditional rubbed oiled walnut, is priced at \$525.

Bass is provided by the Hartley 218MS speaker, an 18-inch woofer with a response down to 16 cps. Middle and high frequencies are handled by the new 220MS speaker, an improved version of Hartley's widely used and highly regarded full-range 10-inch speaker, which is used for the first time in the Concertmaster series. Both speakers employ the Hartley-Luth magnetic suspension principle in their design and tri-polymer plastic cone construction. The crossover network, which provides a droop of 12 db per octave, has been set at 250 cycles.

C-D styles control

Cornell-Dubilier Electronics has just announced a newly designed antenna rotor control system. Known as the TR-2C, the trim control box was designed by Raymond Loewy/William Snaith, Inc., to enhance any living



room. By depressing the finger touch control lever either to the left or right, the antenna is rotated and its position monitored, by a series of compass lights.



Chief Keith E. Klinger always carries his own Midget Tape.

Sound is going to blazes

Tape playbacks help Los Angeles fire department double-check on effectiveness of commands delivered under stress at the scene of fires.

"COMMAND DECISION!"

That's not only a movie title, but the guts of any disciplined battle—whether against human foes or spectacular fires raging through dry growth or doomed structures. And the Los Angeles County Fire Department—biggest or near biggest in many respects—is using tape recorders in its never-ending battles on the fire line, not only in connection with command, but also in training and in public education.

Chief Keith Klinger (firemen always say *Chief Engineer*) even carries his own Mohawk Midgetape with him. He certainly can't take his office and secretary with him when he rolls from one end of his 2,165-square mile territory to the other on major conflagrations.

Chief Klinger uses his tape recorder to "jot down" ideas at the fire scene or while his driver pushes his sirening red car through Southern California traffic. Sometimes he dictates routine letters when the ride is more prosaic.

"I find plenty of uses for it," said the fire fighter, whose personnel number 2224 as this was written.

Actually, of course, the huge department's Public Information Office

finds many other uses for recorders. The PIO had a Berlant-Concertone studio type, two RCA Portable EDT Type 3s and was getting an Ekotape Model 310 when HFTN visited the training center in East Los Angeles.

Capt. Arthur Clensay, a training officer, explained about the "Command Decision" aspect of tape's use.

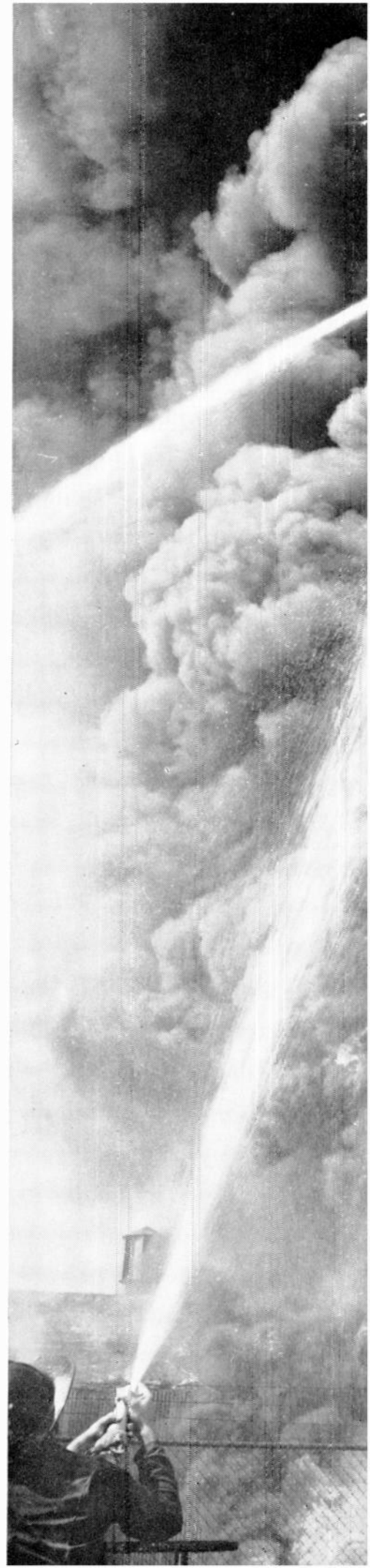
"As part of our in-training program, for instance, we will have four or five engine companies engaged in a simulated fire situation—involving brush, timber or structures," he said.

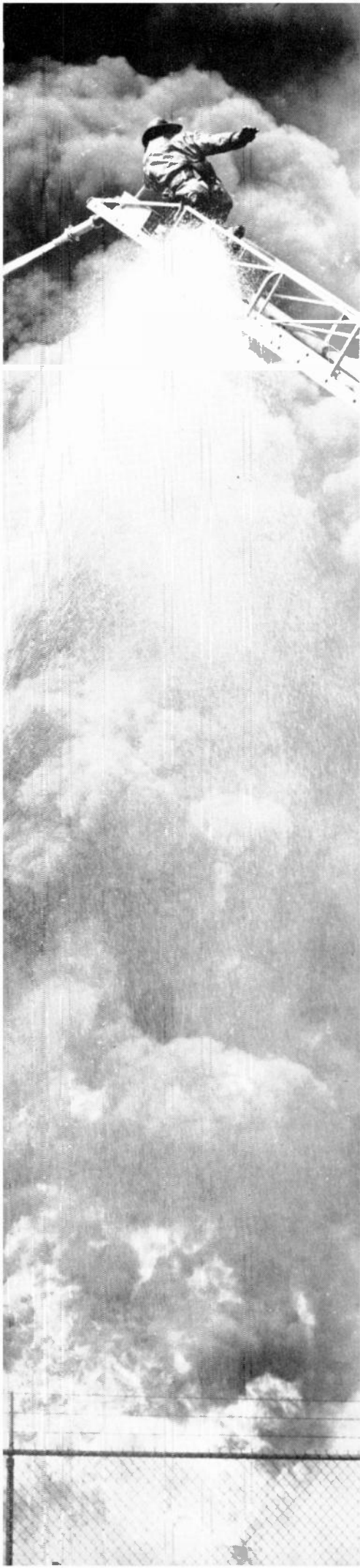
"First chief on the scene after I say 'Go' becomes officer-in-charge of the fire. Every order he gives, whether over the air or shouted, goes on a tape.

"After the exercise, the officers gather in a class-room and discuss

(Continued on page 120)

SIGNALLING from the ladder top, a fireman directs his colleague on the ground, who covers him. Instant communications are essential when the chips are down. For that reason, the Los Angeles department places heavy emphasis on training. But that's only one use they find for their audio-visual equipment.





The massed voices of the Salt Lake Mormon Tabernacle Choir have been thrilling Americans via network radio for 35 years.

Big sounds come from Utah

Fitting these 375 voices (and 11,000 organ pipes) into a microphone has provided puzzles for nearly three generations of recording and radio engineers.

THIRTY-FIVE YEARS AGO, with the first broadcast of the Salt Lake City Tabernacle Choir over KSL, began what may be the longest unbroken series of broadcasts on record, and certainly is a major institution in bringing the unique sound into the American living room.

For countless Americans of two generations, these broadcasts have been an introduction to sound that is thrilling for its own sake—sound that adds an extra dimension to the music that composes it. In this sense—and it is a very real sense—the choir has helped to lay the ground work for hi-fi.

It has helped in other ways, as well. The challenge presented by so large a choir was tackled by the Columbia Phonograph Co. as early as 1910. Victor included it among those first electricals of 1927. In 1940, the choir did a series of recordings for Dr. Harvey Fletcher of Bell Labs, in his pioneer program for the development of three-track stereo. This was followed up in 1952 by the work on the soundtrack for the original issue of Cinerama.

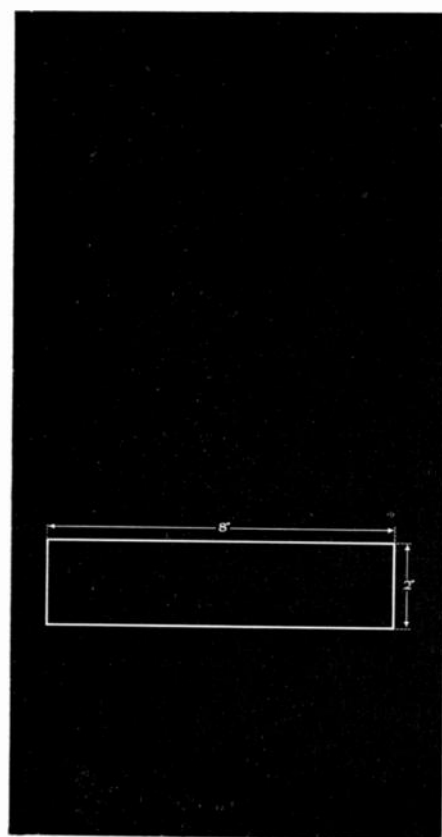
It wasn't easy. Anyone who has sat through rehearsals for a choir of even

fifty singers knows how easily restlessness and inattention creep in. With the endless experimentation in developing the miking and recording techniques for so large a group in so unusual a building, the patience required of its members is truly extraordinary.

The *Desert News* of September 2, 1910, printed an account of the first recording sessions. The horns were "suspended from a rope stretched across from gallery to gallery." The singers had to be assembled "in the shape of a wedge" to project properly into the horns. The ladies were asked to remove their hats, not to allow better view of the choirmaster, but to keep from absorbing any precious drop of sound. In order to be heard above the rest, the soloists were required to put their "faces inside one of the horns."

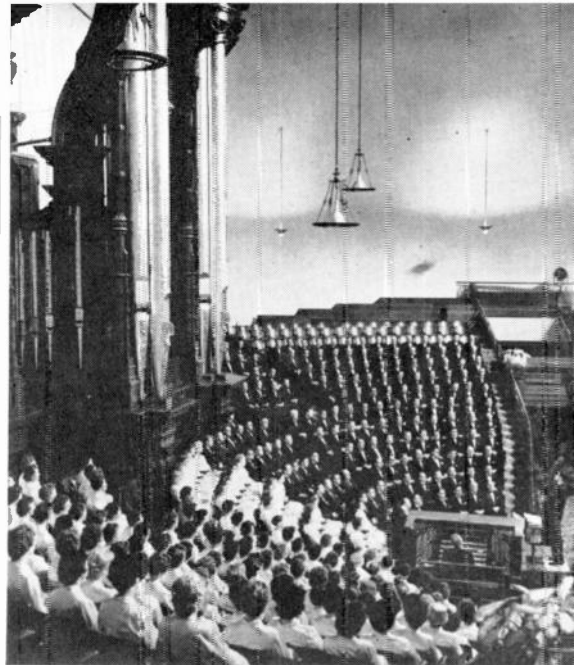
Among those first sides were the "Soldiers' Chorus" from *Faust* and *The Star Spangled Banner*. There were also a few sides for organ solo. For the most part, the auditors seem to have expressed satisfaction with the ability of the technique to render these Olympian tones. One small cavil—

(Continued on next page)



How hi-fi component dealers can get a bigger share of package profits

see powerful ad promotion
breaking in consumer magazines



THE SIZE of the choir and the organ (which has 11,000 pipes and 5 manuals) is not the only problem for the engineer. The Tabernacle's curved dome, built rather like an umbrella, can play tricks.

the "lack of heavy pedal tones" on organ recordings! (And 54 years later, we're still listening the same way.)

When Victor took over in 1927, they applied a technique most famous for its use in Symphony Hall, Boston. There, to simulate absorbent, audience acoustics with a live, empty hall, engineers had hung curtains halfway down. In Salt Lake City, too, curtains were needed to prevent echo in the huge space. Curtains were also used in early broadcasts.

The first KSL broadcast used but one microphone—basically the same single-mike technique used by Bob Fine with a U-47 for Mercury Records in the '50s. The mike was, in fact described as an "old condenser" mike by the announcer, Ted Kimball, the organist's son and a student at the time. He sat at the top of a stepladder, in order to be as close to the mike as possible.

At the time of that first network broadcast, on July 15, 1929, KSL was an NBC affiliate. In September, 1932, it went with CBS Radio, where it has been ever since. And when recording engineers returned, they came from Columbia Records.

In the thirties, Dr. Harvey Fletcher of Bell Labs helped to set up a multiple-mike technique to improve the bal-

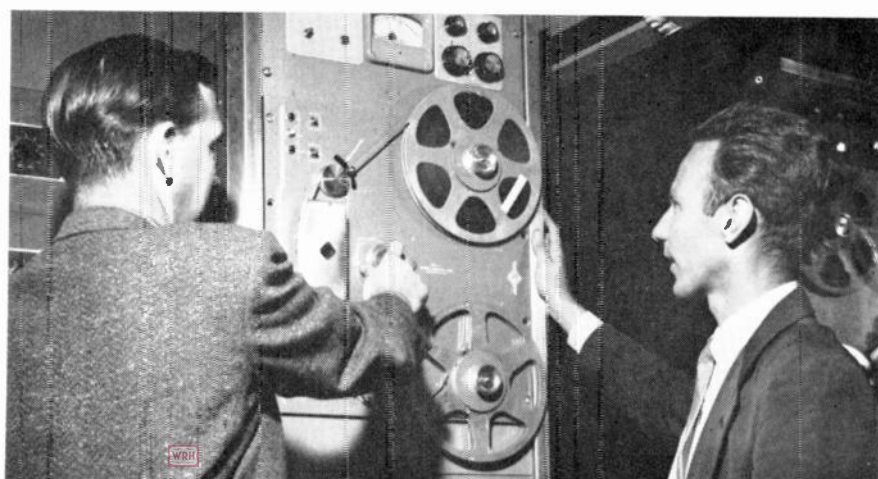
ance of the choir. Some of the early experiments proved worse than the single mike, but hard work yielded results. Using a group of eight singers as Guinea Pigs, Dr. Fletcher tried one possibility after another. The eventual setup used one mike overall plus what choir director J. Spencer Cornwall, calls "intimate" mikes.

When Columbia Records showed up for their first recording session, they began, as had the radio engineers, with a single mike. They soon found, however, that the KSL engineers had gone a lot farther toward mastery of their problems than the men from Bridgeport were likely to do in a short time. So the radio miking was adopted for recording.

The stereo recording project with Dr. Fletcher was one of several he made with various artists for presentation in Town Hall in New York. It used three tracks: right, left and middle (where the "hole" was to be in so many early 2-track setups). This number was doubled by Cinerama, where speakers were mounted in back of the audience, as well as behind the projection screens.

By now, it's a tradition: the Tabernacle Choir can probably expect to be around for many more firsts (and lots more hard work).

KSL TECHNICIANS Ray Loveless and Richard Welch record show.





**This is the size of the 36-watt
stereo amplifier we developed.
Guess what we did with it?**



**We fitted it under the Miracord 10,
put a really compact cabinet
around it, and named it
the Benjamin Stereo 200.
Sound good?**

Sounds great!

And why shouldn't it sound great? Look at the components. The Miracord? You know its reputation. The amplifier? The specs speak for themselves. We designed it from scratch — and are we proud. It's solid state throughout. And we'll match its performance with the best of them. Here are some of the specs: 18 watts per channel IHFM; distortion less than $\frac{1}{2}\%$ at rated output;

frequency response 10 cps to 22 kc ± 1 db; 30 cps to 12 kc power bandwidth at 1% distortion; separate bass, treble, volume and balance controls, mode selector; auxiliary inputs for tuner or tape; tape output jacks. The Stereo 200 will drive any pair of quality speakers with medium to high efficiency, though we strongly recommend the matched Benjamin 208s for

optimum performance. Benjamin Stereo 200 price: \$229.50 includes stereo magnetic diamond cartridge and oil-rubbed walnut enclosure with lucite lift cover. Benjamin 208 speakers are extra, \$49.50 each. Stereo 200 cabinet measures only $18\frac{1}{2} \times 16 \times 9\frac{1}{2}$ ", no larger than would be required for the Miracord alone. See your high fidelity dealer for further details, or write:

BENJAMIN ELECTRONIC SOUND CORP., 80 SWALM ST., WESTBURY, N.Y. SOLE U.S. DISTRIBUTOR FOR MIRACORD TURNTABLES, ELAC CARTRIDGES AND TRUVOX TAPE RECORDERS

Lease, no loss from 81 wear and tear excepted." This is fair, but you will have a better lease if you include this addition: "damage by fire and other unavoidable accidents also excepted."

10. Keep advance small

Paying the last six months rent in advance to obtain a choice location may sound fair enough. But, remember that the landlord has the use of your money for the full term of the lease and the interest on six month's rent for ten years can add up to a tidy sum. Try to get this as low as possible to keep your dollars working for you in your business instead of for your landlord.

11. Include option to buy

One of the profit possibilities of a good lease is to include an option to buy. Normally, this is set at one hundred times the monthly rental. For instance, a rent of \$200 a month should set the purchase price at \$20,000. However, you may find in your negotiations for the option to buy that your landlord feels that a fair price should be \$30,000.

Including this as a part of the lease doesn't cost you anything or obligate you in any way unless you exercise the option. If property values increase to where the value is about \$40,000 by the time your lease expires, you can be sure that your next lease will be written for the \$400 a month rent. If you can buy the property for \$30,000 and turn around and sell it for \$40,000, you will have a capital gain of \$1,000. Then, you can negotiate a new lease with the person to whom you sell the property.

12. Consult a good lawyer

It is sound business advice to see a lawyer before you sign any legal document. However, just seeing a lawyer will not solve the complete problem. Before you visit your lawyer, be sure you have all of the details you want incorporated in your lease in mind. Your lawyer can help you—but only if he knows exactly what you want in your lease.

Little things count in leases . . . little clauses that are added . . . or omitted . . . from your lease. They can make all the difference between a profit and a loss. Check your lease for any profit pitfalls.

ERA dealer seminar booked for Phila.

THE MIDATLANTIC AND CHESAPEAKE chapters of the Electronic Representatives Association will jointly host a dealer seminar in Philadelphia.

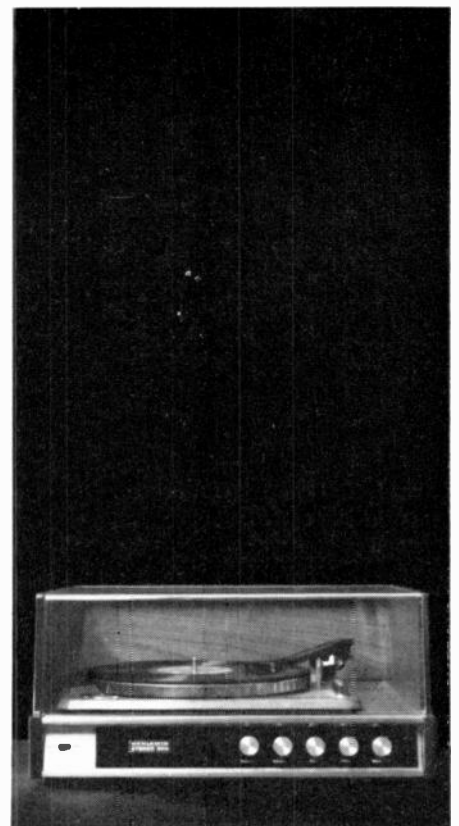
Following the success of last year's joint venture, three Monday evenings, September 14, 21 and 28, have been booked in the Marriott Motor Hotel at City Line Avenue and Monument Road in Philadelphia for similar seminars this year. The focus of this year's sessions will be the maintenance of profits in the face of changing marketing patterns, particularly with respect to the interest being shown by

package manufacturers in the components area.

The first session will be conducted by a Dale Carnegie representative. The third will deal with telephone contact situations.

In between will fall a panel discussion concentrated on the specific problems faced by the hi-fi dealer. One of the panelists will be TRADE NEWS marketing director, Ken Nelson. IHF president Walter Stanton has also agreed to participate, but the final list of participants was not yet announced at press time.

AMONG PANELISTS are Ken Nelson and Walter Stanton.



Benjamin Stereo 200 gives hi-fi component dealers bigger share of package profits

See your Benjamin rep, or write direct.

pros and cons of how the situation was handled. Then we play back the tape recording. It's our most effective tool."

Groans of despair are heard as an officer cries: "Did I say *that*? What I meant to say was so-and-so . . ." Many an officer subsequently uses department recorders or his own to practice saying what he means to say, so it will come easy under stress.

Capt. Clensay also noted that tape recorders are used in similar manner at the department's annual "Brush Fire School"—definitely a top echelon "command decision" exercise important to Southern California's tinder-dry hills and mountains.

Public Education Films

The Public Information Office's own ingenuity, plus the cooperation of local radio stations and Coast network outlets, has resulted in some

COMMANDS ARE RECORDED in Los Angeles County Fire Department's in-service training program. Tapes played back after drill sessions help to point out flaws, breed habits of command that pay off when they're up against the real thing.

MANY RECORDER TYPES are used by the department. Others are owned by the men. Shown is the Photo & A-V Section.



Every fire department is a prospect

Every dealer may not have an organization as large as the Los Angeles County Fire Department as a potential prospect—but every fire department, regular or volunteer, can be a prospect.

Capt. Robert C. Singleton, Public Information Officer, and his photography expert Capt. Dick Bird, who helped **HIGH FIDELITY TRADE NEWS** with the accompanying article, both said:

"We're able to tell you only about the official tape recorders and sound gear of the Department. But we know that scores of individual officers have their own recorders to use in ways that aid training at the station level—or help in public education."

In addition to sprawling unincorporated areas holding more than a million people, the L.A. County Fire Department serves 27 incorporated cities with about 600,000 population on a contract basis.

From the mountains to the sea, some 105 stations are involved.

fantastically successful public-education and indoctrination films or slide-and-tape narrations.

The catastrophic Malibu fire of 1956 has become a fight-fire message heard and seen by groups all over the world—including behind the Iron Curtain.

It started when it was noticed in 1957 the CBS's Radio Workshop had a sound tape of much of the action—complete with orchestral background. Could the County Fire Department's motion picture footage be used with the tape in some way?

Because of the public service nature of the subject matter, clearance was obtained through the myriad unions, guilds and professional associations involved. The results were the dramatically effective *Fire at Malibu*.

"We never could have afforded to shoot a sound movie of the same subject matter," explained a public information officer. The photo section does have numerous still and movie cameras which shoot action shots for the record—and to aid media unable to reach isolated and too-dangerous hot spots.

Documentary On Tape

More recently, Radio KLAC—very much tape-minded itself—compiled a taped audio account of the voices and sounds in the Verdugo Hills fire, where many homes were lost. It used it as a Sunday special—"The Hills of Hell." The fire laddies now are working on a hoped-for matching of their photography and tape again.

Meanwhile, the synchronized sound & slide approach also is being used for less spectacular, but equally important, training and public education presentations on all phases of fire fighting and fire prevention. A

taped narrative is added to a series of slides, which is synchronized and activated by inaudible tone signals, using Dukane equipment.

And even the department's "speakers bureau" uses tape recorders to play back rehearsals of important educational speeches.

Vega control changes

COMPUTER EQUIPMENT Corp., Los Angeles, has acquired controlling interest in Vega Electronics Corp., Santa Clara, Calif. according to Philip L. Gundy, Vega president.

The purchase was made from Electronic Capital Corp. in exchange for Computer Equipment stock and convertible debentures, announced Gundy, who is also vice president of the Los Angeles firm.

Vega, which developed and manufactures the Vega-Mike wireless microphone, will continue to operate autonomously from its Santa Clara headquarters, he said. James I. Stultz, Vega general manager for the past two years, has been named vice president and general manager.

Gundy is a former vice president of Ampex Corp., where he directed the activities of three divisions, including the development of the Videotape television recorder.

Ken Petersen resigns

KEN PETERSEN has resigned as marketing manager of Thompson Ramo Wooldridge's Columbus Division.

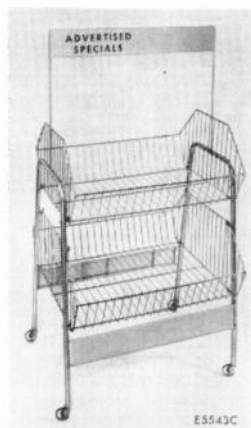
He had been responsible for all Columbus marketing activities, including Bell Sound hi-fi equipment, tape recorders and public address equipment and TRW language lab products.

He announced that he has no immediate future plans.

Help sell from 76

Baskets display specials

A Roll-Around wire basket merchandiser recently developed by Reflector Hardware Corporation is intended for the mass-merchandising approach to a wide range of dump or bulk merchandise. The feature unit is the No. E5543C, a light-weight, port-



able island unit that can be rolled to a high-traffic location for impulse buyer exposure.

The unit features a prepared metal sign with copy reading "Advertised Specials," plus two metal bottom panels for additional signs. The complete unit sells for \$33.60 each. A similar unit without casters, No. E5543, sells for \$31.86. Both units measure 27" wide x 23½" deep x 52½" high overall, and are available through Reflector Hardware Corp., Dept. FP 3, 1400 N. 25th Ave., Melrose Park, Ill.

Vega plays peekaboo

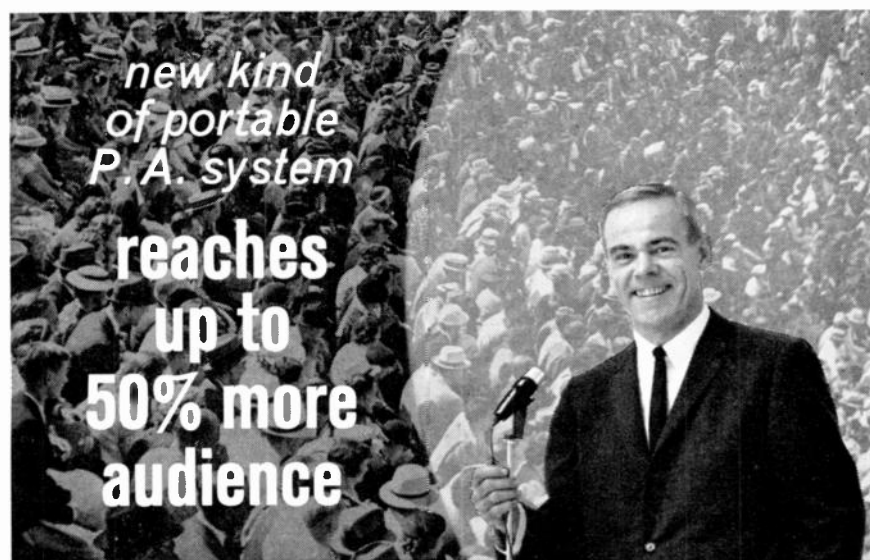
An extensive new merchandising program for the Vega-Mike wireless microphone includes this novel counter display "guaranteed to get the product into the prospect's hands," according to Vega. "Who could resist



the urge to life the mike for a look underneath?" The compact display piece, 21" high, 22" wide and 3" deep, uses a minimum of counter space. Room is provided in front for a sales folder describing the many applications of the cordless microphone system. Lithographed in blue and black on heavy weight paper board, the display reproduces the Vega microphone receiver actual size and color. The small microphone itself is a real case minus the electronics. Vega Electronics Corporation is located at 1161 Richard Ave., Santa Clara, Calif.

Sonotone releases catalog

Sonotone's Electronic Application Division is distributing its new audio product catalog, covering the firm's OEM, distributor and consumer products in the hi-fi and electronic field. The 16-page catalog (SAH-76) illustrates, in detail, Sonotone's complete line of ceramic and crystal cartridges, replacement needles, tonearms, ceramic microphones (including low-impedance types) and learning lab headset/microphone units. It also shows the Sonotone speakers and new speaker enclosure systems.



uses revolutionary "focused" sound principle, provides absolute speech clarity in any location.

- Features fabulous Argos Sound Column speaker system that "focuses" sound directly to the audience.
- Reproduces speech with absolute clarity because focusing prevents troublesome echoes.
- Covers gatherings of up to 700, indoors or out.
- Operates up to 400-hours on long-life flashlight batteries.
- Contains everything in a trim 27 lb., package . . . transistor amplifier, microphone, stand, and sound column speaker system.

Argos
VOICE
DIRECTOR
PORTABLE
PUBLIC ADDRESS
SYSTEM

shouldn't you be selling this new concept in portable sound?

Now being advertised to schools, churches, institutions, camps . . . perfect for entertainers, lecturers, public speakers.

Ask your Argos representative for a demonstration, or write direct.

Argos
PRODUCTS COMPANY

Dept. D, 600 So. Sycamore St., Genoa, Illinois 60135

Carter from 32

ways, of course. Some of Carter's tape or recorder customers decide they want Mullen to make a platter from some favorite taped bit they own.

Recording Center offers little pre-recorded tape, emphasizing "strictly equipment," according to the enthusiastic owner. He mentioned Ampex, Audio Devices, Inc. and Scotch in speaking of the *raw* tape he sells in abundance.

Science and research?

San Diego, in addition to being a metropolis practically on the Mexican border, is headquarters of the 11th Naval District and various fleet units. So when the Navy wanted tape recorders for the deep-diving *Trieste* and the "Flip-Ship," Charles Carter was the man contacted. University of California actually does the research on the Flip-Ship—the one that stands on its end—if we understood carter correctly.

San Diego State College also came to him for a recorder for a study of wild life in Mexico. Frog sounds were recorded at a distance by a sound activated relay.

Carter is accustomed to providing battery-powered units for all types of boats. He also is getting more and more into industrial applications. He provided a 7-channel instrumentation recorder to Ryan Electronics to test and evaluate vibration effects in their own equipment. For various firms he has provided special-purpose tape for sophisticated instrumentation in computers.

Back to "minding the store," however.

Recording Center has another asset—its location in the Hillcrest Shopping District of San Diego. Famed Balboa Park and the San Diego Zoo are close by. And major freeways give easy access from the city's many areas.

Marantz gets UL nod

ALL MODELS of the Marantz line of high fidelity sound components have been awarded permission to carry the Underwriters' Laboratories, Inc., Seal of Approval. Saul Marantz has announced. The four models are: Model 7 stereo preamplifier, Model 8B stereo power amplifier, Model 9 mono power amplifier, and Model 10B, the new stereo FM tuner.

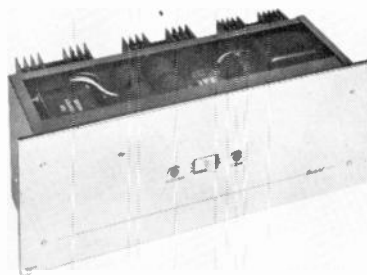
As Marantz's Marantz puts it, "The UL tag was the only thing our instruments lacked. Now they have everything."

COMMERCIAL SOUND:

Products for profits

Trans. power rack amp

Rauland-Borg Corporation has announced the new Model TA100 All-Transistorized 100-Watt Amplifier, designed for continuous-duty service

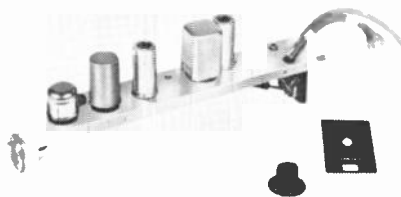


in commercial and industrial applications. Companion Model TA50, a 50-watt solid-state amplifier, is also available.

The amplifier features 100 watts RMS (200 watts peak output); a thermostatically controlled protective relay; back-up fast-acting overload protective relay; low power consumption; approximately 75% less heat generation than in tube amplifiers; a frequency response listed as ± 1.5 db, 50-15,000 cps; distortion less than 5% at rated output (less than 3% at 80 watts); noise level, 80 db below rated output. The unit is designed for use in auditoriums, theatres, music halls, etc. Rauland-Borg is at 3535 W. Addison St., Chicago.

H-K unit rides own gain

A major improvement in the performance of sound systems that are required to operate under high and varying ambient noise levels is claimed for Harman-Kardon's "sensing/expander" module for use with the company's Galaxy Series commer-

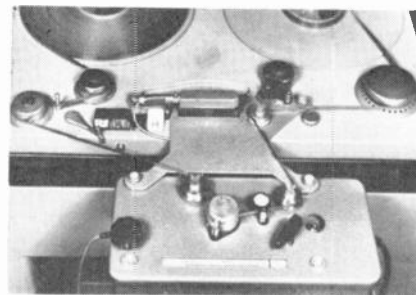


cial-industrial amplifiers. In addition to a normal mike preamplification, the new model M-8 Module incorporates a special expander section which, when operating with a "sensing" microphone, is designed to adjust the output level of the entire sound system automatically in proportion to a rise or fall in ambient noise.

The Module M-8 will help solve the kind of problems that have long frustrated engineers and installers working with racetracks, airports, factories in heavy industry, arenas, etc., where, once sound system levels are set, the sound output is frequently and unpredictably either too loud or too low as operating conditions change. It can also be employed, instead, to respond to a potentiometer, located to serve as a remote master volume control for the sound system.

Varies pitch or tempo

A unique device capable of changing the tempo of a tape recording without affecting its pitch and, conversely, changing the pitch without affecting the tempo, has been introduced to the market under the name of Eltro. The Model MLR 38/15 was briefly available in this country



some five years ago and in the meantime has changed manufacturers and been re-engineered throughout.

The device, an invention of Dr. Anton Springer of West Germany, is placed in front of any professional tape recorder, using its wind motors and playback amplifier(s). It features a unique rotating head assembly and variable speed capstan drive which permit a tempo range from 50-

180% of normal speed without change of pitch, and similarly, a pitch change without change of tempo. The unit is available on special order for stereo, three track and four track tape with widths up to one inch.

Applications for the unit include speech analysis, production of spot commercials, talking books for the blind (compressing speech without loss of intelligibility), and a wide variety of special recording effects for phonograph records and motion picture film. Radio news using the device can contain 30% more items in the same segment with little apparent increase in speed of delivery. It is available from Gotham Audio Corp., 2 West 46th St., New York, N.Y. 10036, import agents.

Oxford shows PA design

According to Oxford Transducer Corp., their OP-6 and OP-8, weatherproof paging and talkback speakers have a new design that assures high efficiency and penetration in high ambient noise level areas. They feature an integral close coupled inner horn and diaphragm that eliminate convention phasing plugs and insure a perfect impedance match to the

outer bell. The outer bell has a true exponential flair, which is credited with greatly reduced distortion.

The magnetic structure of the OP series feature heavy Alnico V center



pole magnets and a heat sink to protect the units' high power-handling capacity. Both models are molded from "Implex A," a modern high impact material that is practically indestructible as well as being impervious to weather, salt water, oil, acids and temperature extremes. Using 1/4" wall sections of "Implex A" assures a bell without sympathetic vibrations,

common in spun metal and thin-wall plastic shells.

The OP-6 and OP-8 are available as standard stock units with built-in 70 or 25 volt constant voltage transformers with a 45-ohm tap. Both models are also available without transformers but with standard transformer mounting brackets incorporated within the rear enclosure. Oxford's "Lever-Lock" mounting bracket will allow the horn to be adjusted 360° horizontally and 180° vertically. Once in place, the unit can be securely locked without tools or disassembling.

Altec features preamp

A highly reliable, fully solid-state plug-in preamplifier designed for audio control consoles used by professional recording, broadcasting, and telecasting studios, together with first-line sound system applications is now available from Altec Lansing. Designated as the Altec 470A Solid-State Preamplifier and its associated 550A Power Supply, the new audio unit has low heat generation and extremely low noise level and is small enough

(Continued on page 124)

Don't let a "STEREO-DEAF" FM Stereo Antenna Spoil Your FM Stereo Enjoyment

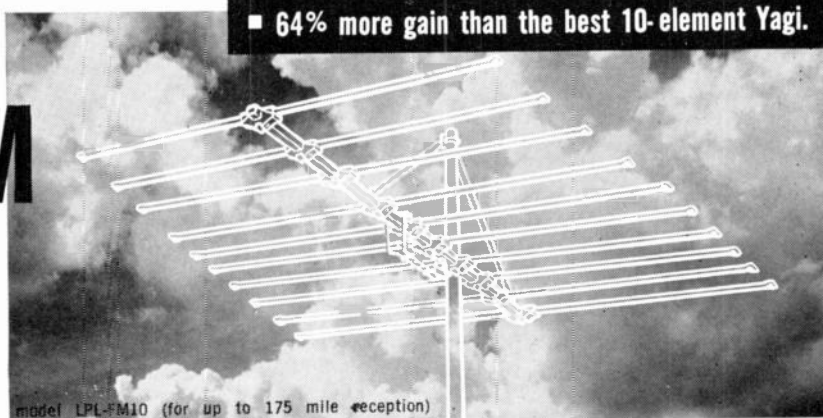
Install the New
Stereo-Engineered

JFD LPL-FM LOG PERIODIC ANTENNA

- features full-wave log-periodic L-dipole system.
- derived from the powerful logarithmic periodic array used to track America's missiles and satellites through space—discovered by the Antenna Research Laboratories of the University of Illinois.

The all-new JFD LPL-FM antenna is log-periodic engineered to give you the clean gain, directional selectivity, and wideband response your system needs for fidelity FM stereo or mono performance.

The secret is in the full-wave log periodic L-dipole cells that work with amazing frequency-independent efficiency and directivity over the entire 88-108 mc. FM/FM stereo range. Result: the purest FM sound your system has ever reproduced—on every station—up to 175 miles away!



■ 64% more gain than the best 10-element Yagi.

model LPL-FM10 (for up to 175 mile reception)

—AND FOR THE ULTIMATE IN MULTI-FM SYSTEM LISTENING...



model FT-1 \$34.95, list
Consists of transistorized
Amplifier and Power Supply

Install the new JFD FM Antenna Distribution-Amplifier, FT-1, and feed two stereo or mono receivers with sparkling FM. Space-age all-transistor circuitry gives you up to 18 db. of amplification without overloading. No controls or adjustments. Uses standard 117 V.A.C.

Write for the technical specs, charts, patterns and data that tell all.

FOUR LPL-FM ANTENNAS TO CHOOSE FROM

model	range (up to)	list
LPL-FM10 (illustrated)	to 175 miles	\$49.95
LPL-FM8	to 150 miles	\$39.95
LPL-FM6	to 125 miles	\$29.95
LPL-FM4	to 75 miles	\$19.95

HAVE YOU HEARD ABOUT THE NEW JFD TV/FM SIGNAL SEPARATOR MODEL SS-TVFM?

It electronically combines your present TV antenna lead-in with the JFD FM Log Periodic lead-in—so only one down-lead is needed. Also—it separates the TV/FM signal of the new combination TV/FM antennas for input to TV set and FM system.

only \$5.95, list

JFD ELECTRONICS CORPORATION
15th Avenue at 62nd Street, Brooklyn, N. Y. 11219

Products from 123

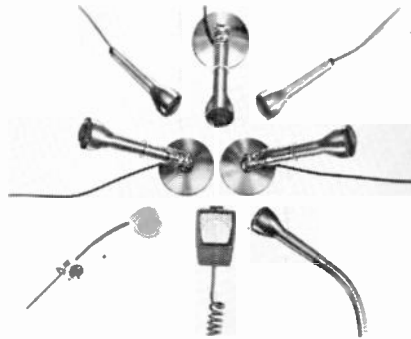
to allow the mounting of eight units, side by side, on a standard 19" rack.

Circuitry and design of the 470A is such that the unit may be used not only as a preamplifier but as a line amplifier, booster amplifier, or program amplifier without internal wiring changes. The inputs and outputs of two 470A's may be connected in parallel to obtain double power output or provide "fail safe" circuitry, whereby the failure of a single amplifier will not disrupt service but merely reduce the total power output by 3 db.

The 800 rack mounting frame is designed to hold eight 470A Amplifiers or six amplifiers, plus a 550A Power Supply in 3½" of rack space. Some pertinent specs read: Gain 45 db; Power output (max.) +27 dbm, 20-20,000 cps; Frequency response, ±0.5 db, 20-20,000 cps; Less than 1% THD, 20,20,000 cps; Noise level below -127 dbm.

Sonotone ceramic mikes

A new line of ceramic microphones in low-impedance versions, for broader usage than possible before, is now available from Sonotone Corporation. Especially designed for transistorized



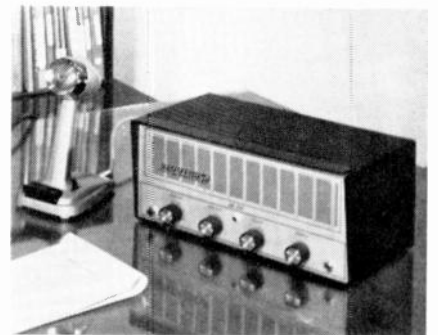
applications, the mikes match the low-impedance characteristics of many of the mass-produced communications products now on the market, as well as those anticipated in the future.

Sonotone ceramic microphones now cover a range of input impedances (low and high) from 10,000 ohms through 5 megohms. Frequency responses of 200 cps to 9,000 cps for speech and 50 cps to 12,000 cps for music pickup are available. Open circuit sensitivity up to -49 db re 1-volt per microcar can be realized, according to Sonotone, who list among applications: CB use, PA systems, tape recorders (including factory-matched pairs for stereo) and low-impedance boom and flex mikes for learning labs. Available are slim die-

cast hand and table models and rugged high impact plastic models for CB use and tape recorders. All mikes come complete with necessary hardware.

Base controller shown

The Hammarlund Manufacturing Company has a new Citizens Band Base Controller, the CB-6-BC. The new unit has been designed to mate with the Hammarlund CB-6 mobile transceiver. It features six crystal controlled transmit and receive channels, a dual conversion super-het receiver with 0.5 microvolt sensitivity

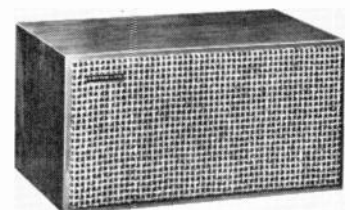


and excellent adjacent channel selectivity, 5-watt audio output to the built-in speaker and 3-watt minimum RF power to the antenna.

The CB-6-BC is supplied complete with built-in AC power supply and a high quality "push-to-talk" desk microphone. The unit has been specifically designed to meet the demanding requirements of commercial and industrial use and features a unique vernier tuning control for receive channels and a desensitization rating that is described as up to 1000 times better than comparable-quality units.

Tiny case speaks big

The Goodmans Maximum I has been announced by the UTC Sound Division. Designed, developed, and produced by Goodmans of England, the super-small bookshelf speaker measures only 10½" wide, 5½" high, and 7¼" deep. Despite this unusually small size, the performance is quite "big," providing a frequency response listed at 45 to 20,000 cps, and a power handling capability of 15 watts.



the Corsairs have landed!





Corsair I



Corsair II

There's a Treasure-Trove of new, exciting entertainment awaiting you. ... unsurpassed naturalism
... individual instrumentation
... symphonic reproduction

Boil it down to midget size and you have the remarkable performance of the "Corsairs"... the best of the smallest.

Corsair I - 30 to 15,000 cycles \$119.95
 Corsair II - 30 to 17,000 cycles \$129.95
 Dimensions: 11⅞" x 11⅞" x 2⅜"
 Finish: Oil Walnut. Cane fabric grille.

Don't miss the treasure of hearing vivid realism... write



INCORPORATED

2649 BRENNER DRIVE / DALLAS, TEXAS / 75220

Impedance is 8-16 ohms. In order to achieve such unusual performance in a small enclosure, Goodmans instituted a program of basic research into diaphragm behavior and electro-magnetic phenomena.

The cabinet is finished in oiled walnut on all sides. This enables vertical or horizontal mounting without having to give special consideration to cabinet finish. The compact size lends itself to a variety of installations.

Frequency response versus power curves show an absence of severe peaks or valleys. Roll-off at the high and low ends is unusually smooth. These are among the reasons why the sound is, according to the manufacturer, unlike that of any other loud-speaker system in its class. The woofer, especially developed for this system, contains an exceptionally large magnet to assure high acoustic efficiency, and high power handling capability. A unique crossover L-C network transfers power at 1900 cps to a new-design backloaded midrange/high-frequency unit.

Add to AKG D-19's

AKG of America has announced a new addition to its line of condenser and dynamic microphones. The D-119CS is a new member of the well-known AKG D-19 group of dy-



amic cardioid microphones. It has a frequency range listed as 40 to 16,000 cps within ± 3 db. The true cardioid characteristics of this microphone give an effective front-to-back discrimination of approximately 15db. The sensitivity is listed as 0.18 mV/Microbar (-75 db) (1 v/dyne/cm^2). The unit is provided with such features as bass attenuation switch (-10 db at 50 cps) and a noiseless on-off switch. Delivered with matching connector, stand adaptor, 15 foot cable and wind protector bag. Impedance is listed as 200 ohms. A high impedance transformer (AKG U-212) is available.

Polio victim uses tape recorder to get his doctorate

A 475-PAGE THESIS has won a Los Angeles polio victim his UCLA doctorate in geology—thanks to a tape recorder.

Dr. John (Jeff) Johnson dictated material to his recorder. His hard-working wife, Miriam, did the typing between duties as a nurse and taking care of the couple's four children.

Value of tape recorders to the handicapped is evidenced by the fact that Johnson's radius of wheelchair travel is governed by the 5-ft hose connected to his 70-lb. portable iron lung.

The new Ph. D., a victim of polio in 1959, is a recognized expert on marine fossils of the Devonian Age. He continues his research at California Institute of Technology—although "officially" 100% disabled.

**NOW...PERFECT FM
ELIMINATE
FM**

INTERFERENCE!
With the Sensational
New! **FINCO**
FM BAND PASS FILTER



Get only pure FM signals. Use a Finco FM Band Pass Filter to stop interference and block out unwanted signals from T.V., Citizens Band and Amateur transmitters, motors, autos and fluorescent lamps. Size: $4\frac{1}{4}'' \times 2'' \times 1\frac{1}{2}''$. Available at your Finco Hi-Fi dealer. Satisfaction guaranteed!
Model 3007 Only \$6.95 List

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Insertion rate: \$15 per inch, one time; progressive rates available. Includes blind box if desired.

Address orders and inquiries to Classified Section, High Fidelity Trade News, 25 West 45th Street, N. Y. 36, N. Y.

REPRESENTATIVES WANTED

Many territories open for terrific new, highly accepted, growing high fidelity speaker system line. Going National. Excellent opportunity for qualified reps.

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Do you need a SAM* Executive?

Successful Manufacturers' Rep would like to use his sales talents, his intelligence and his unbounded energy for ONE manufacturer. A thorough knowledge of advertising, graphic arts and sales promotion comes in one package. Send for resume or appointment. Box B, TRADE NEWS, 25 W. 45th St., N.Y.C.

*Sales-Advertising-Marketing

REPS WANTED

Qualified sales representative to sell quality products, tape recorders, tuner/amplifiers, FM-AM radios. Many models price protected. Several exclusive territories open.

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2356 South Cotner Avenue
Los Angeles, Calif. 90064

TOP

Sales Communications Engineer seeks new challenge. Over 30 years' experience with "Ma Bell".

**Write Box G, HiFi Trade News
25 W. 45th St., N. Y. C. 10036**

ATTENTION MANUFACTURERS!!

If Southern California doesn't represent at least 30% of your national sales, you need us. We can give you saturation in the fastest-growing market in the country. Our Rep firm is seeking additional lines and can guarantee immediate results. All inquiries held in strict confidence. Box SC, TRADE NEWS, 25 W. 45th St., N.Y.C.

.....

An item in the May Trade News concerning the self-merchandising display cartons used by Electro-Voice for their speaker enclosure kits has resulted in a number of inquiries for the name of the carton manufacturer. The combination shipper-display cartons are made by Stone Container Corp.

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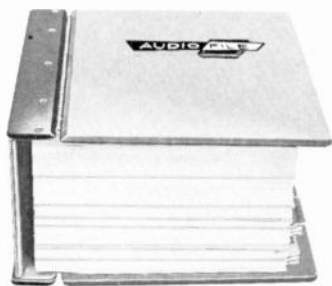
How Audio-File cuts the cost of doing hi-fi business...

KEEPS CUSTOMERS FROM WALKING

Substitution selling can be easy when the salesman can convince the customer that an item you stock is equal to, or better than, the brand the customer specified.

Audio-File catalogs high fidelity components, accessories and packages—the products of more than 260 manufacturers. It's no trick to compare product features, specifications, prices. Just another way Audio-File helps reduce the cost of doing business.

FREE 30-DAY TRIAL, WRITE:



AUDIO-FILE

645 Stewart Avenue, Garden City, N. Y.

Tapes from 81

MOZART: Divertimento No. 2, K. 131; Symphony No. 33, K. 316. Szell, Cleveland Orch. Epic EC 837, \$7.95.

The delightful six-movement Divertimento, a newcomer to tape, has four horns, flute, oboe, and bassoon—and you can hear 'em all variously combined in the three trios of the first minuet (296). The recording is strong-bassed, generously spread. That little 33rd Symphony, short and sweet enough to be heard at pops concerts, is crisply done but falls short of the ultimate gracefulness. The only other tape version, the recent London under Kersesz, is a warmer performance. Say, is that noise we hear Szell beat-stamping at various times in both works?

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Rancho from 32

"I finally offered to go to work for him for nothing, but I don't think he believed me," Turley recalled. "Anyway, I finally got my resources together and opened my own store. The 'Rancho' name here was a coincidence—based on the *Rancho Center* name which they promptly changed after I was legally labeled Rancho Sound Co."

Hi-Fi Rancho covers 4000 square feet, with additional storage space outside. This whopper space is divided into eight rooms—none of them small and most of them separated by conventional walls, as against mere partial partitions.

The luxurious rooms devoted to furniture and to demonstration of speakers and systems are as lovely as any you'll find, complete with wall to wall carpeting and attractive lighting. Other rooms' floors are covered with linoleum or are plain cement, depending on their functions.

Turley keeps four people permanently on the payroll. He does commercial installations, too, but considers his custom work a specialty. A specially designed stereo cabinet was being fitted with an entire sound system while we were there—for shipment to a San Diego customer!

"We also feature tape," Turley said. "We have 1800 selections—the largest in San Gabriel Valley. I'm sure. I never send a number back just because it doesn't move right away. Sooner or later it's going to be just what someone is seeking."

"We also handle a complete line of accessories. I feel that if we sell a system, our customers should be able to get their other needs from us. I consider it part and parcel of good business."

Hi-Fi Rancho does *not* handle records, but the tapes embrace everything from kid stuff to whole operas. There are some TVs in the store, but unobtrusively. The feeling definitely is that of a fine components studio, which it is.

"I've never worked so hard in my life—for less," Jack Turley smiled at one point in his exclusive interview with *TRADE NEWS*. "But I've never enjoyed myself so much."

As noted above, the store definitely is a financial success now: "We've grown by reputation," Turley said, "but there were days at the start when I went without lunch—so I'd have change in the till in case I made a sale. Now that the critical period is over, I find I've got more credit than I need."

"It seems they like you when you pay your bills."

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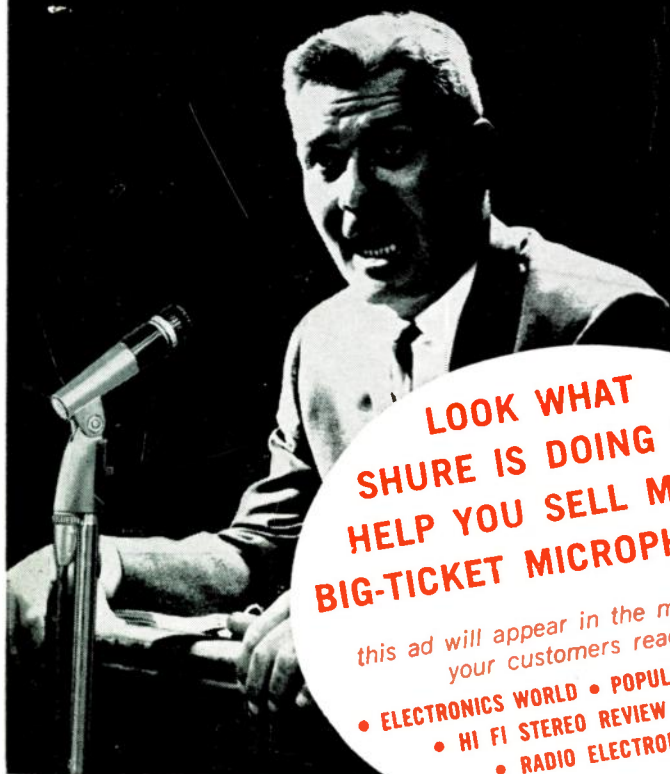
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That's all there is to do. Your microphone will be sent to you post paid. Sorry, no C.O.D.s.