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April 1963



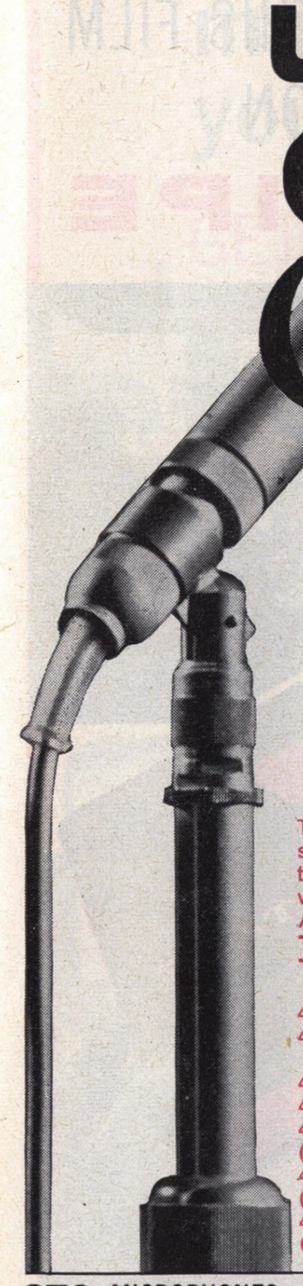
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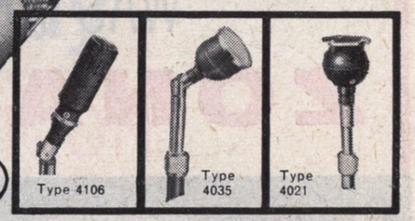
DEMONSTRATION ROOM No. 442

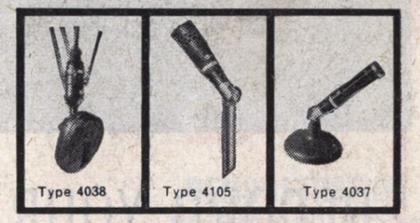
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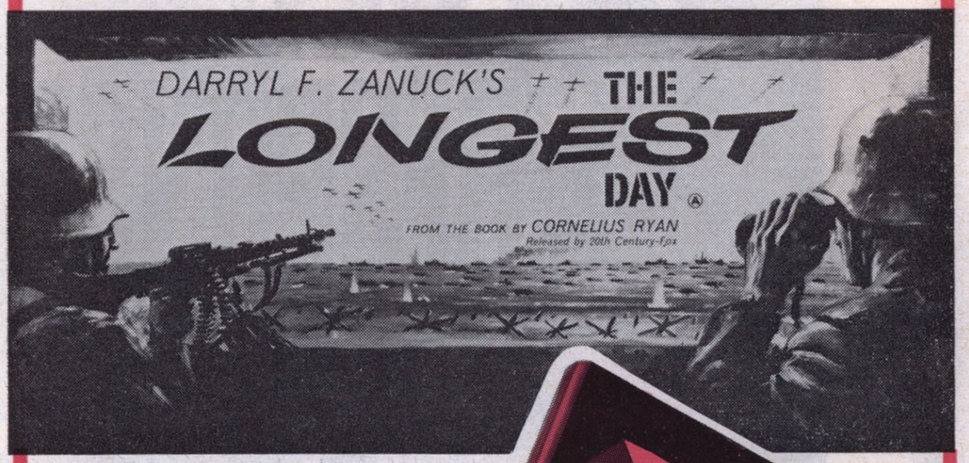
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Record a BASF Tape Letter

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A new Correspondence tape weighing less than 1½ ounces complete in mailing carton with 150 ft. of Long Play Tape is also being demonstrated.

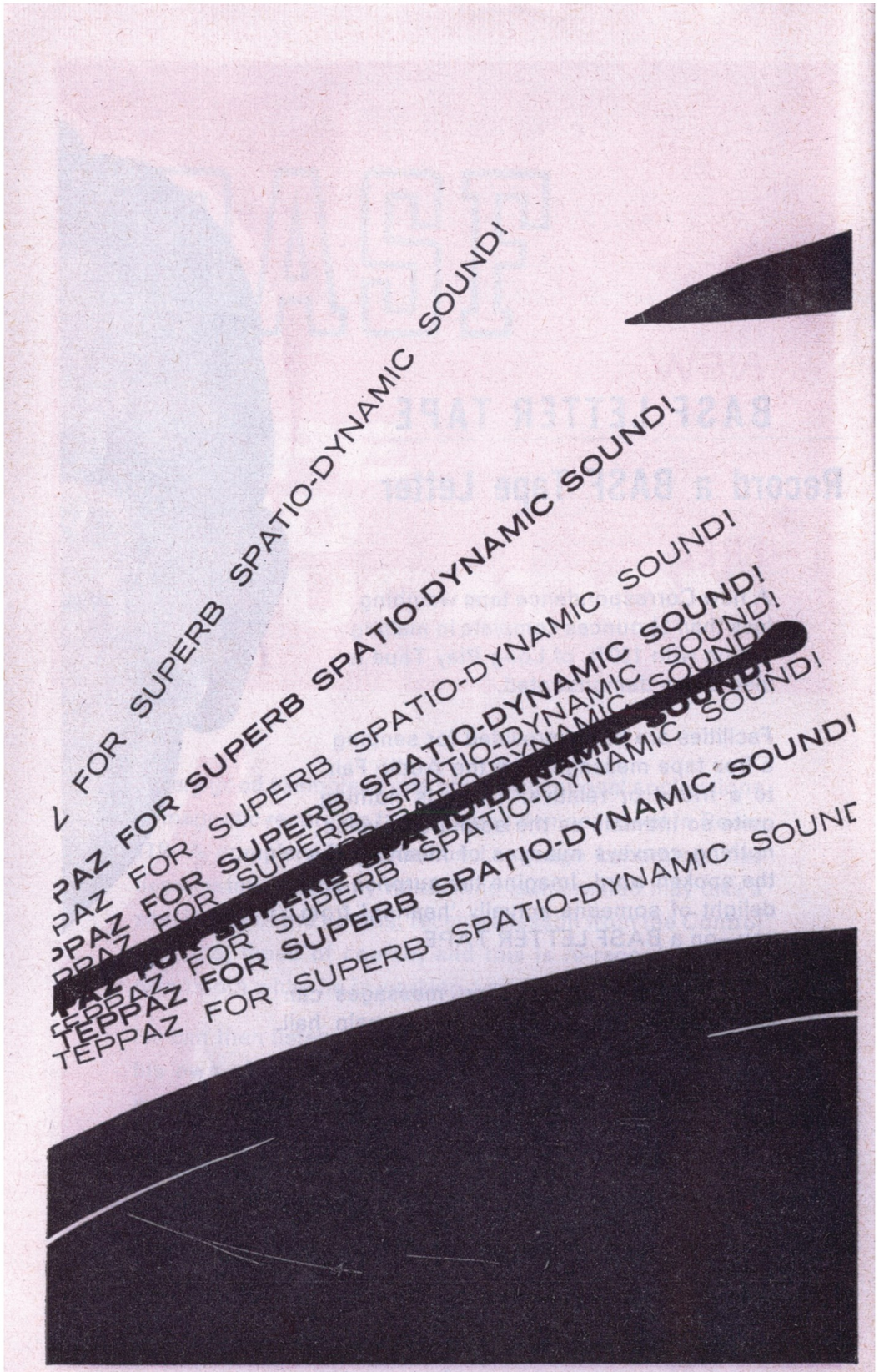
Facilities are being provided for sending a free tape message from the Audio Fair to a friend or relative. There is nothing quite so intimate as the sound of a voice; nothing conveys nuances of meaning like the spoken word. Imagine the surprise and delight of someone actually 'hearing' from you—on a BASF LETTER TAPE.

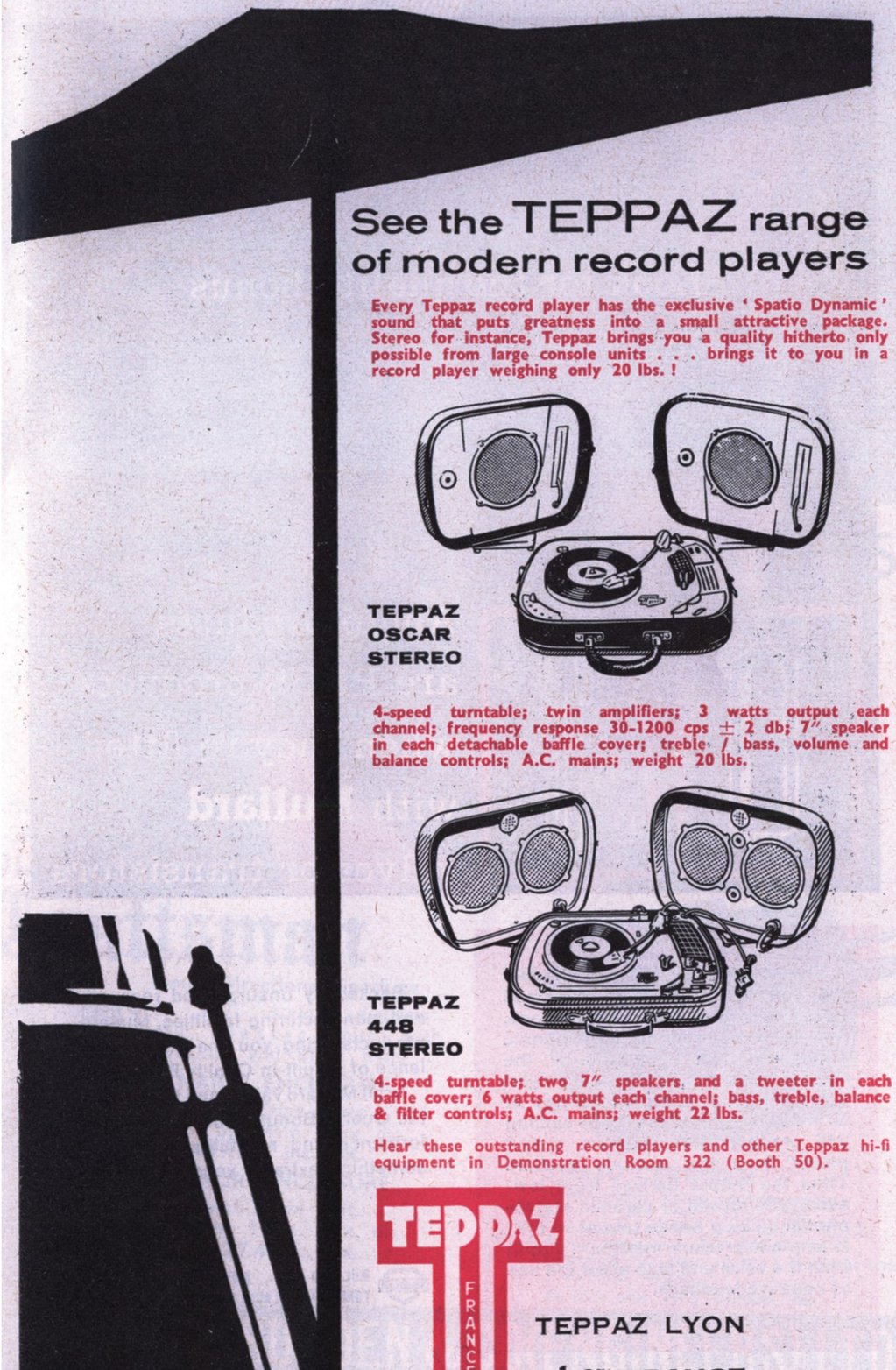
Appointments for recording messages can be made at Stand No. 36 in the main hall.



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4-speed turntable; twin amplifiers; 3 watts output each channel; frequency response 30-1200 cps ± 2 db; 7″ speaker in each detachable baffle cover; treble / bass, volume and balance controls; A.C. mains; weight 20 lbs.

TEPPAZ 448 STEREO

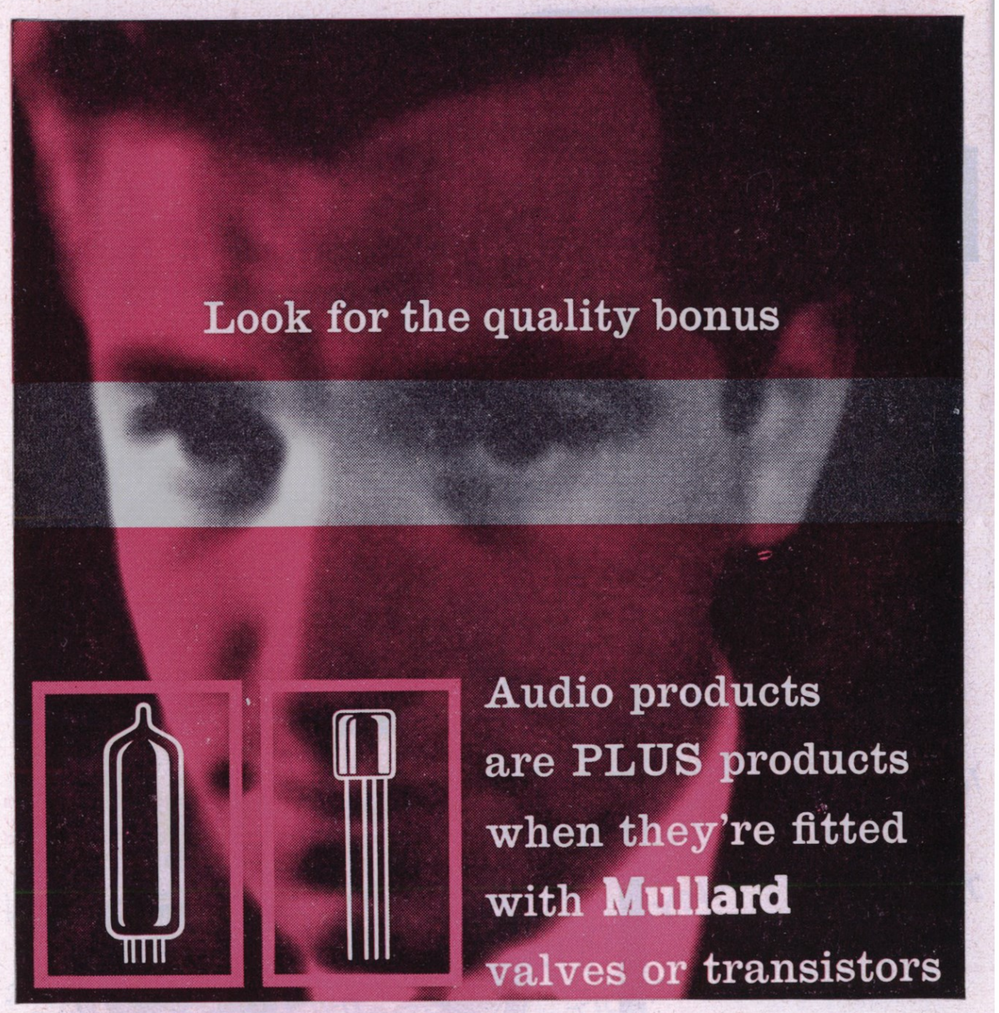
4-speed turntable; two 7″ speakers and a tweeter in each baffle cover; 6 watts output each channel; bass, treble, balance & filter controls; A.C. mains; weight 22 lbs.

Hear these outstanding record players and other Teppaz hi-fi equipment in Demonstration Room 322 (Booth 50).

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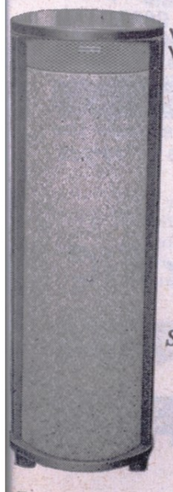


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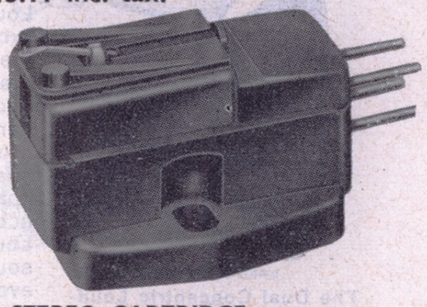
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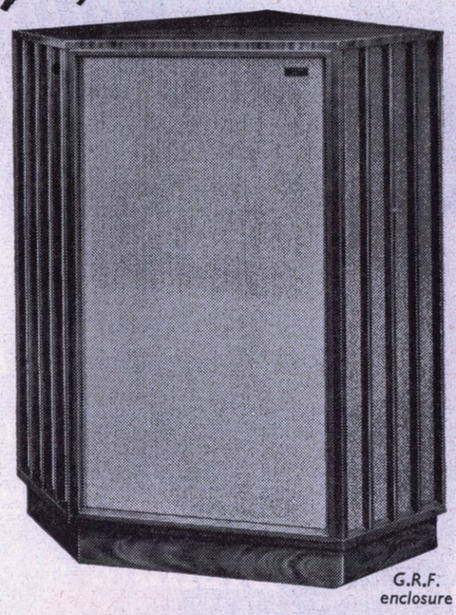
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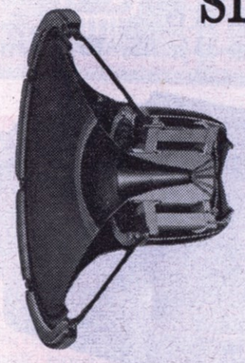
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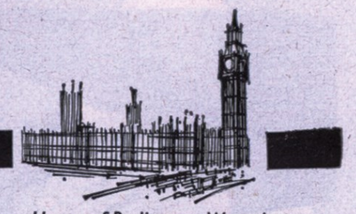
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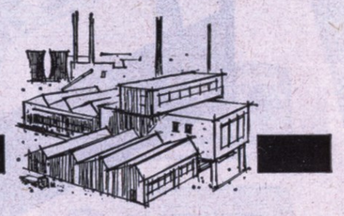
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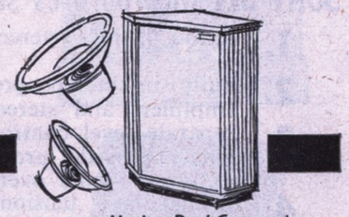
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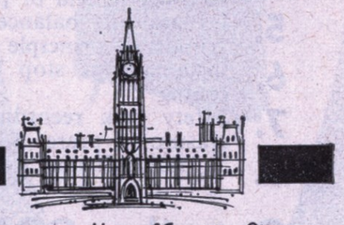
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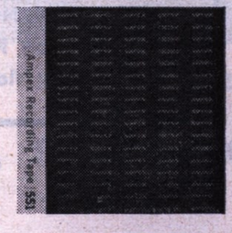
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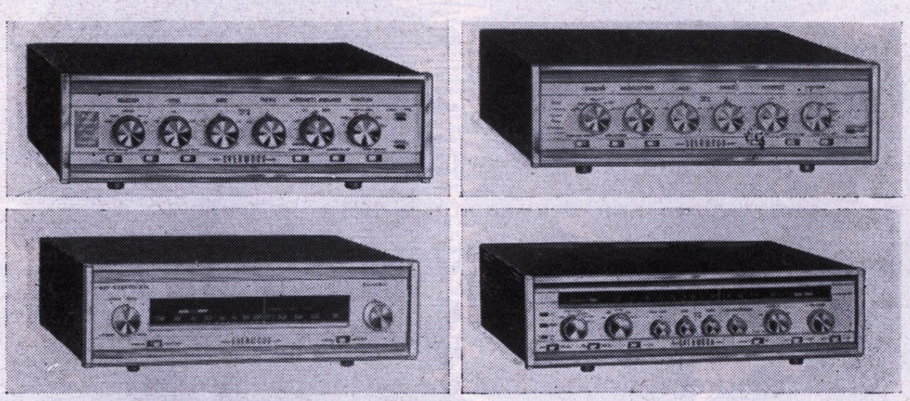


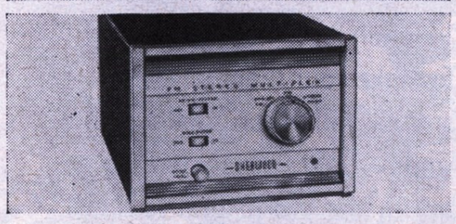
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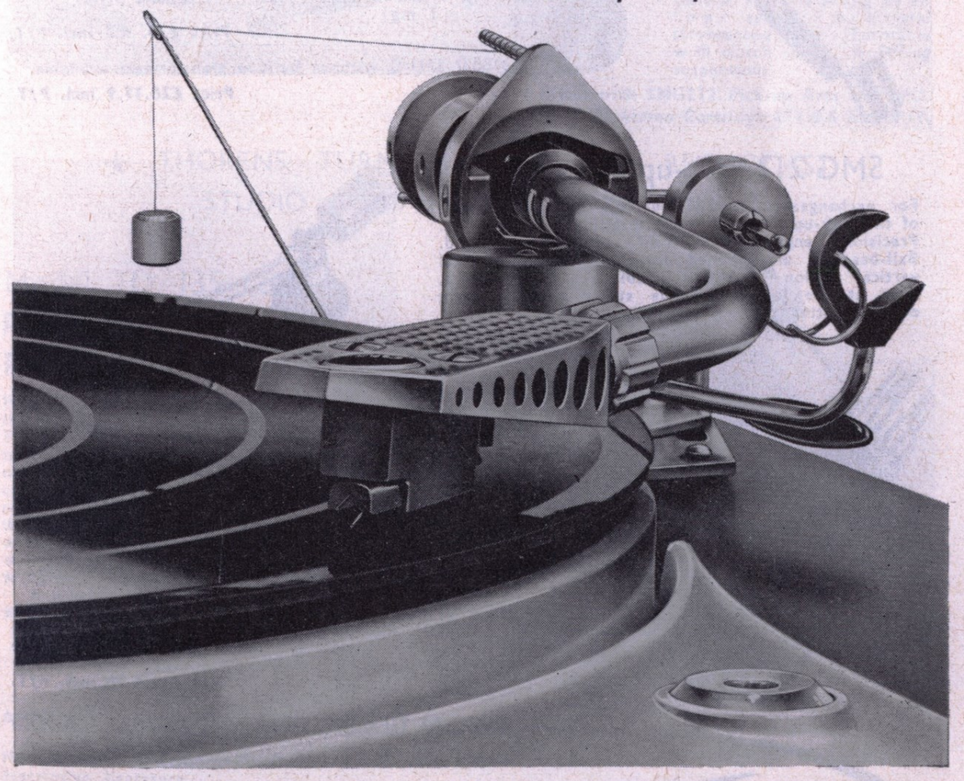
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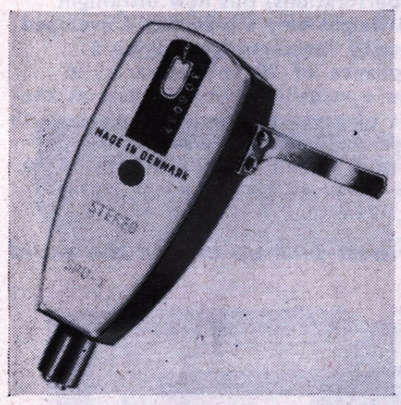
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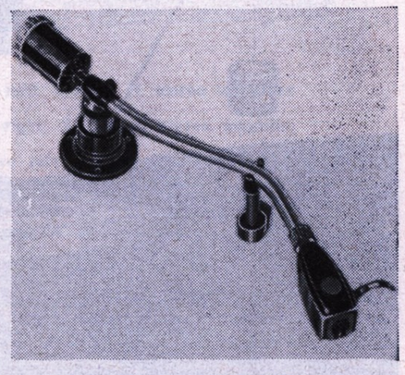
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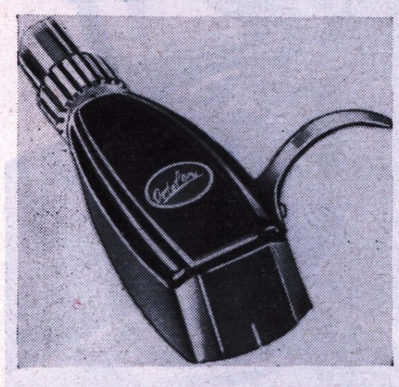
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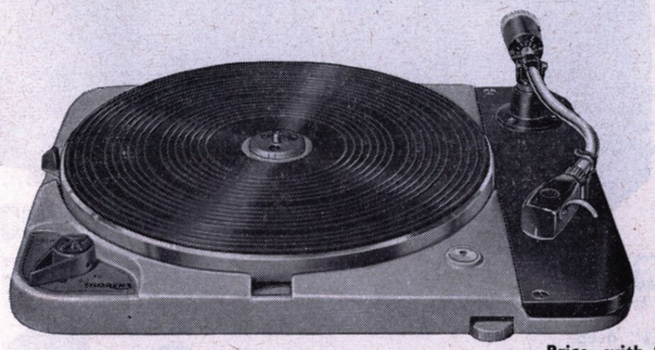
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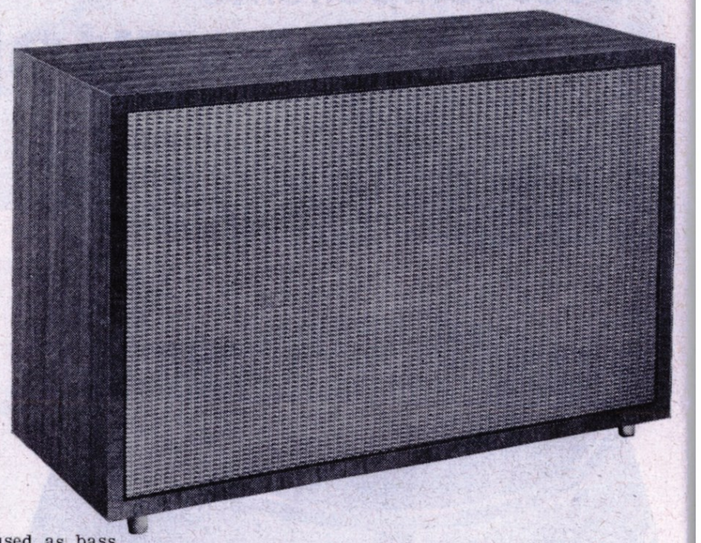
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Booth No 32. Demonstration Room 348

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Hear it . . . hear it as much as you can . . . this must be the ultimate test of any piece of audio equipment. Figures often look more impressive than deeper knowledge may reveal them actually to be. And in any case they cannot tell the whole story. Your ears must be the final judges and Decca has always been happy for its products—both records and audio equipment—to be judged on listening tests. Hear the Decca Professional pick-up arm with Mark II head . . . hear it here, at the Audio Fair . . . listen to it carefully . . . your ears will tell you it's the finest there is. Then you'll know what's behind the figures.

DECCA 'PROFESSIONAL' PICK-UP ARM

DECCA MARK II MAGNETIC PICK-UP HEAD



A precision-engineered instrument. Accurate determination of playing weight with uniquely designed coarse balance, fine balance and sliding weight; free horizontal and vertical movement on bearings of instrument quality; silicone fluid damping; minimum torsional effects from leads; integral, damped spring lifting and lowering device; supplied complete with all necessary connections; will take Mark I or Mark II heads.

Output: 1·2 mV/cm/sec per channel; *Impedance:* 3,000 ohms at 400 c/s; *Recommended termination:* 50,000 ohms; *Diamond stylus radius:* 0·0005" to 0·0006"; *Tip Mass:* less than 1 milligramme; *Compliance:* Lateral 10×10^{-6} cm/dyne, vertical 2×10^{-6} cm/dyne; *Frequency response:* proportional to recorded velocity. ±1 dB from 40 to 16,000 c/s; *Crosstalk:* better than —20 dB at 1,000 c/s and —15 dB at 50 c/s and 12,000 c/s; *Balance:* better than 1 dB between channels.

17½ gns. tax paid

14½ gns. tax paid

The ffss (Mark I) head can be used with the 'Professional' arm, and the Mark II head with the ffss arm.

ALL INQUIRIES TO DECCA OFFICE: ROOM 401

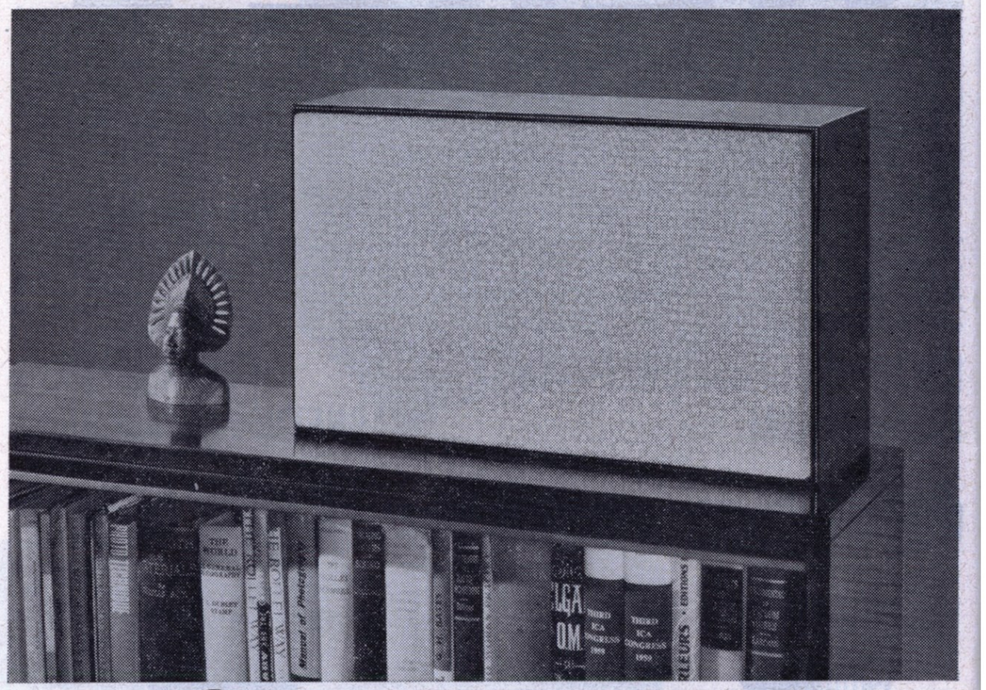
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DISPLAY BOOTH: 31

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ULTRA-COMPACT



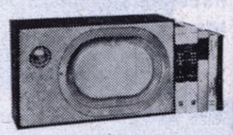
Celeste, by KEF

Celeste, the first *real* small hi-fi speaker, has been designed for the enthusiast who lacks the space for a "large" hi-fit set-up. The Celeste is a compact ½-cu. ft. solidly built in the KEF tradition and superbly finished in solid African hardwood and soft-white grille.

Easily positioned for optimum stereo results, the Celeste is at home on top of your bookcase, window-sill or mantelpiece.

Ask your local hi-fi dealer to show you this wonderful little speaker, or get free literature from KEF.

Abridged specification : Size 18 in. x 10¾ in. x 6¾ in. Weight : 24 lb. Impedance : 15 ohms. Max. input. : 15 watts r.m.s., 30 watts peak. Speakers : 1 flat 13 in. x 9 in. Tri-ply woofer plus 1½ in. hemispherical tweeter. Salient features : smooth frequency response, wide dispersion, low colouration.



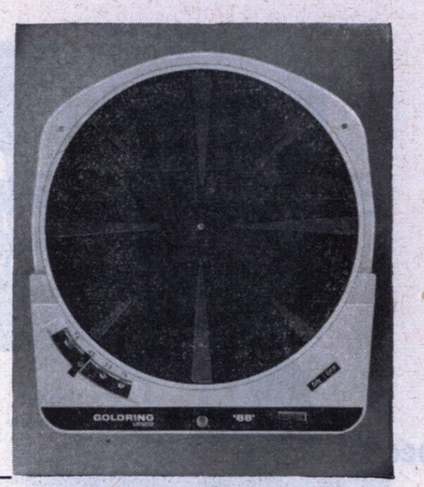
KEF **the heart of living sound**

KEF ELECTRONICS LTD., Tovil, Maidstone, Kent.
Telephone : Maidstone 55761 ; Grams : KEF Maidstone.

ROOM 413, BOOTH 66, AUDIO FESTIVAL, 1963

The '88' . . . with all the features of the highly acclaimed Goldring-Lenco units . . . styled in the modern idiom . . and ready for mounting where you want it, and with *any* transcription arm that will do justice to the unit itself.

***Goldring-Lenco unique vertical drive system.**
***Continuously variable speed from above 80 r.p.m. to below 30 r.p.m. and from 15 to 18 r.p.m., with four adjustable click-stops for 78, 45, 33⅓ and 16 r.p.m.**
***8 lb die-cast, accurately machined, non-magnetic turntable.**
***Wow and flutter—0.2% maximum.**
***Rumble and hum—negligible.**
***Less than 1% speed change for 13% mains voltage change.**
Price—14½ gns plus P.T. £2.9.6.

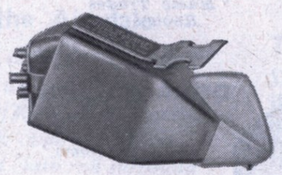


HIGH QUALITY TRANSCRIPTION EQUIPMENT BY GOLDRING

The Goldring-Lenco GL. 70 transcription unit: An 8 lb die-cast turntable, machine finished and dynamically balanced. Wow and flutter less than 0.2%. Continuously variable speed adjustment. Special Swiss integral arm with nylon bearings. Extremely low tracking error Regular model **£22.10.0. + £3.13.2. P.T.** Also available with shallow-box type base. Model GL. 70/P **£25.10.0. + £4.2.11. P.T.**

The highly successful Goldring - Lenco GL.58 transcription unit: Arm wired for stereo or mono. Wow and flutter less than 0.3%. Unique groove selection device. Variable speed control. Regular model, **£13.15.0. + £2.4.8. P.T.** Also available with shallow-box type base. Model GL. 58/P **£15.15.0. + £2.11.2. P.T.**

The superlative Pickering 380A transcription cartridge—at a remarkably modest price. The 380A moving magnet stereo cartridge. Sealed mu-metal capsule. Simple push-in stylus assembly. Tracking pressure 2-gms. **£12.12.0. + £2.0.11. P.T.**



. . Outstanding in smoothness of response, channel separation, high output, hum shielding and ability to track high level recorded passages without break-up.' From a full page review headed 'A Superb Report' in 'High Fidelity' (USA).

The unsurpassed Goldring 600 mono cartridge: Wide frequency response. High compliance. Minimum effective mass at stylus tip. Tracking pressure 4-5 gms. **£8.8.0. + £1.7.4. P.T.**



The remarkable CS.80 stereo/mono ceramic cartridge: Has an exceptionally good signal/cross talk ratio, being better than —20db at 1 Kc/s and —10db at higher frequencies. Tracking weight 2-4 gms. **£2.11.6. 8.5d. P.T.**

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THE NEW MODEL H.F. 1016 'MAJOR'

This new unit makes use of the high flux density available in the magnet system of the previous H.F. 1016 unit. The 'Major' is specially suitable for use in the smaller type of enclosure. **Chassis**—die-cast aluminium. **Cone dia.**—9 inches. **Pole dia.**—1 inch. **Flux density**—16,000 gauss. **Total flux**—64,000 maxwells. **Impedance**—15 ohms.

Price **£8. 19. 6.** (inc. Tax)

Stentorian

The range of Stentorian loudspeakers incorporating the patented cambric cone was developed to provide reproduction that takes full advantage of the television and V.H.F. sound transmission and high fidelity recordings now available.

WHITELEY ELECTRICAL RADIO CO. LTD.

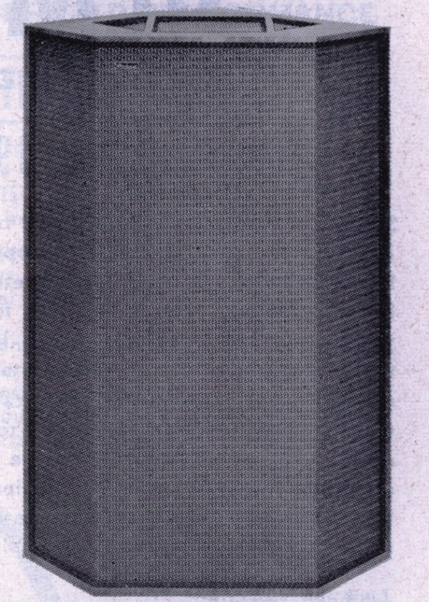
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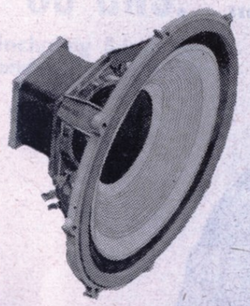
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THE AIREDALE

The "move-anywhere"
FREE STANDING SPEAKER ASSEMBLY

For many years the Wharfedale omni-directional 3-speaker Corner System has been recognised as a superbly natural reproducer, and has frequently stood the difficult test of comparison with live musical performances. The AIREDALE is a free standing version of this speaker, suitable for corner or along the wall location. Cabinet resonance is avoided by sand filling the front panel and fitting ceramic tiles to rear side panels. Some idea of the solid construction is given by the fact that the total weight exceeds ¾-cwt. Fitted with castors for ease of movement.





In the Airedale

L.F. output is produced by a 15in. unit-type W15/RS, fitted with heavy cone and impregnated cloth roll surround for minimum distortion.

THE AIREDALE

SIZE: 39in. x 28½in. x 14in.
WEIGHT: 91 lb. complete.
IMPEDANCE: 12/15 ohms only.
MAX. INPUT: 20 watts.
Individual controls for middle and treble response are located in the rear panel. Available in whitewood or fully finished with a choice of walnut, oak or mahogany veneers.
Tropical model also available at extra cost.
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PRICE £65.

Wharfedale

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C

PICKED FROM THE WORLD'S BEST

A magnificent new Tape Recorder

SIEMENS NORGE MODEL 10

4-TRACK STEREO/ALL TRANSISTOR

EXHIBITION BOOTH 19 • DEMONSTRATION ROOM 422

Siemens, a company of international repute in the field of electronic development, having been manufacturers of professional broadcasting recording equipment for 10 years, have developed this Model 10 for the domestic market. The high standard of workmanship, design and technical skill of this renowned firm is built-in to this new model which will satisfy the most discriminating user of Hi-Fi equipment. 'Built like a watch' accurately describes this outstanding instrument.

3 Tape Speeds—7½ i.p.s. (50-18,000 c.p.s.) 3¾ i.p.s and 1⅞ i.p.s The dB limits will not be quoted until over 100 machines have been built and tested, but should be 2 dB or 3 dB.

3 Heads—Record, Playback, Erase with 'Sound on Sound' trick recording facilities.

Tone Controls—Separate treble and bass controls.

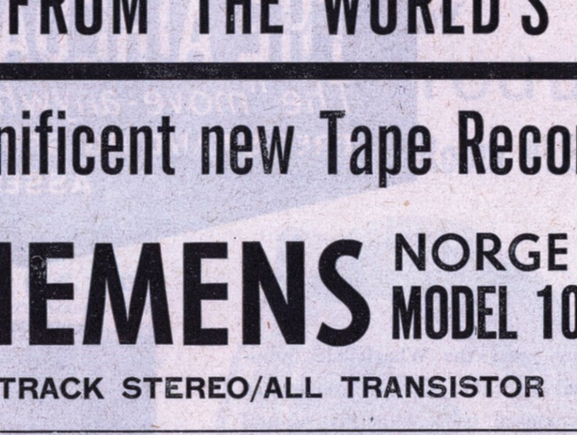
Signal/Noise—52 dB unweighted.

7 in. Tape Spools—rewind time 2 mins. for a 1,200 ft. tape.

Weight—26 lb. gross.

Lack of space precludes a complete specification enumerating all the excellent and ingenious features. Examine and listen to this magnificent new machine

89 gns.



Also available Models 12 & 14.

DENHAM & MORLEY LTD.

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BUTOBA MODEL MT5

BATTERY OPERATED WITH MAINS OPERATED PERFORMANCE

EXHIBITION BOOTH 8 • DEMONSTRATION ROOM 421

BUTOBAS have been giving splendid service under arduous conditions all over the world for the past 5 years. From missionaries in Borneo to TV commentators in America, they all agree that **BUTOBA** is the world's best value in portables.

5 in. tape, giving up to 6 hours playing time.
High fidelity frequency range.
7 in. x 5 in. speaker and 1.2 watts output.
Adjustable treble control on recording and playback.
Monitoring of both radio or mike recordings.
Extremely low noise level. No more than on expensive mains machines.
High quality steel deck, life lasting ball bearings and dynamically balanced 5 in. flywheel (level) all give lowest wow and flutter.
High sensitivity level.
Light in weight — 12 lb. complete with batteries. Economic battery life—up to 100 hours. Prompt service facilities.
Mains converter for home use.

66 GNS.

including 5 in. tape and connecting lead.



Other popular Butoba Tape Recorders are
Model M.T. 7
44 GNS.

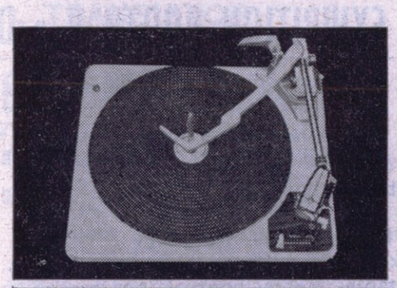
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ROOM 222 BOOTH 38



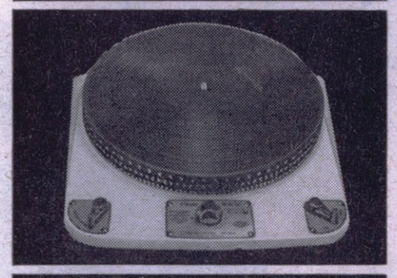
MODEL AT6

A high performance unit fitted with heavy turntable and Transcription Pickup Arm.



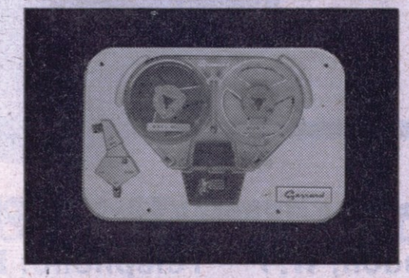
LABORATORY SERIES AUTO TURNTABLE TYPE "A"

Transcription Record Player with provisions for automatic use.



MODEL 301

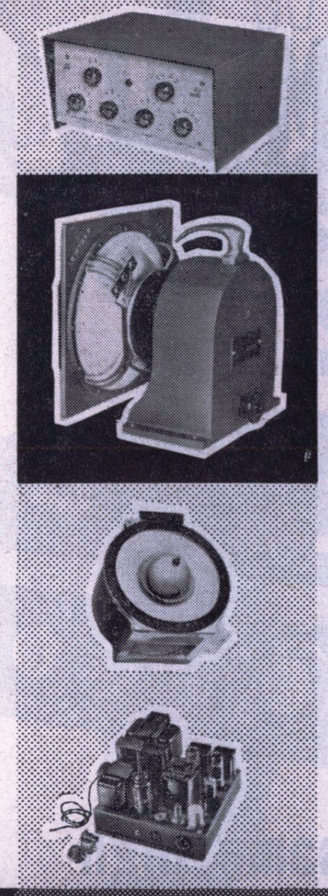
Famous Transcription Motor used by Broadcasting Stations throughout the world.



BATTERY TAPE DECK

Opens a new and exciting field for the manufacturer of tape recorders and the home constructor. Highly suitable for use with portable transistorised equipment.

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NEW RESLO STUDIO MICROPHONE

type SR1

The new Reslo "Studio" professional ribbon microphone has been specially developed for studio use by broadcasting authorities and professional recording companies throughout the world and is manufactured to the highest possible standards.

The overall frequency response which covers a range of 30 c/s-20,000 c/s is outstandingly smooth and straight, giving a very clean and natural quality of reproduction.

The Reslo SR.1. is ideal for general studio musical use, due to excellent transient response and freedom from non-linear distortion. It is also ideal for orchestral recording.

Features of the design are the very low hum pick-up and the ability to alter the response characteristic for high quality speech announcing. Each microphone, which is individually checked to within 2 dB, is supplied complete in a padded instrument case together with a set of mounting adaptors and 6 yds. of screened cable.

Send for literature and price list of the complete range of Reslo microphones and loudspeakers.

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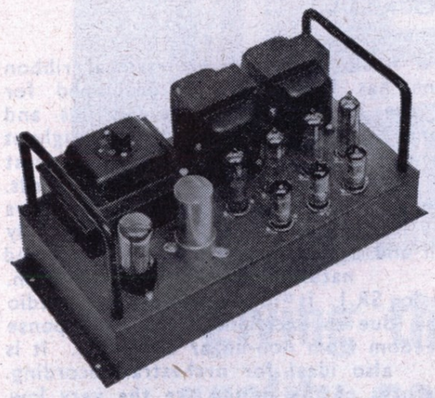
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Armstrong

PCU25 STEREO PRE-AMPLIFIER
£21.0.0

Six inputs providing for all possible signal sources including the lowest output pick-ups and tape heads. Push button function switching. Bass and treble tone controls. Balance control. Treble filter. Rumble filter. Tape recording outputs. Distortion 0.1 per cent. Hum and noise (high sensitivity pick-up input) 60 db below full output. Valves, 2 x EF86, 3 x ECC83. Dimensions 10½ in. x 4½ in. x 7½ in.





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12 watts push-pull ultralinear output from each channel. Distortion 0.1 per cent. Hum and noise 80db below full output. Frequency response 15-22,000 cps within 1 db. Power response 20-18,000 cps within 1 db. Negative feed-back 29db. Stability factor 18db. Valves GZ34, 3 x ECC83, 4 x EL84. High specification output transformers with grain-orientated laminations and multi-sectional winding. Dimensions 14 in. x 7 in. x 7 in.

You are looking at a remarkable amplifier

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Auriol is the only control which will position your stylus precisely. It readily gives location accuracy within one microgroove, at any pre-selected part of a record including the first groove.
The unique pneumatic lowering at variable pre-set controlled speed provides cushioned contact; this, with controlled lifting at any position, completely eliminates possibility of damage to records and stylus. Patented and proved in use throughout the world—it is suitable for use with any make of pickup arm.

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STANDARD MODEL Single record playing	**£3.9.9** inc. tax
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A very special recorder, built to professional standards for home use. For the listener with a critical ear whose standards of music and sound are higher than average . . .

THE REFLECTOGRAPH

is infinitely rewarding.



MODEL 'A"

Standard half-track recorder. Separate record and playback amplifiers. Sampling switch permitting instant comparison between incoming and outgoing signals.

MODEL "S"

Similar to Model "A" **plus** track switching with one position allowing playback of bottom track while recording on top track. Both tracks can be simultaneously reproduced on playback. Two inputs provided with mixer controls. Stack playback head leads brought out for connection to an external stereo amplifier.

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TELEFUNKEN have more than a quarter century research experience behind their name. Experience built into every machine. Select the recorder that suits your requirements—there are nine models, all full of exclusive features and great **TELEFUNKEN** quality. It's fine on its own, or coupled with your Stereo or Hi-Fi equipment, to produce an integrated recording system. You will find **TELEFUNKEN** has sound quality taped !



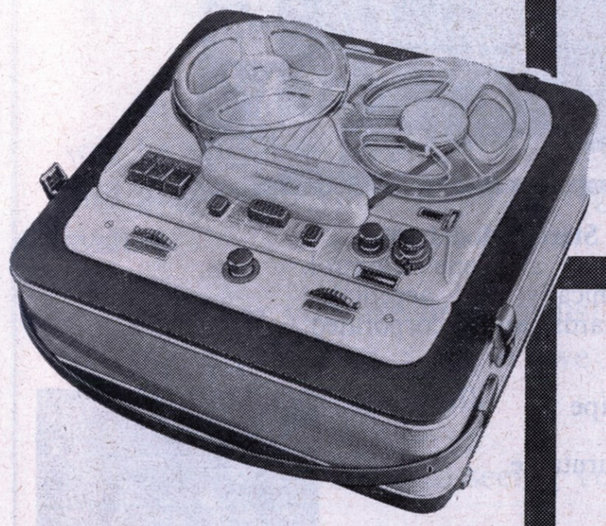
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Twin-track Stereo. High-quality trick facilities. **95 Gns.**



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6-hour playing time on 5¾in. double-play tape. **50 Gns.**

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New look, new magic-eye recording level indicator, new mixing facilities. Two speeds—7½ and 3¾ ips. **83 Gns.**

MAGNETOPHON 96
Four-track plus full controls for trick recording, superimposing, intertrack transcription. **69 Gns.**

MAGNETOPHON 97 STEREO
Four-track recording and playback. Additional speaker in lid. **95 Gns.**

MAGNETOPHON 95
Twin-track, 3-speed. Easy operation. **59 Gns.**

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Eliminates most controls to make this a truly automatic machine. **50 Gns.**

High performance. top fidelity recording

MAGNETOPHON M26KL & MAGNETOPHON M24KL

These two machines bridge the gap between home and studio quality tape recorders. Extremely low wow and flutter on all speeds ! The machines are identical in appearance, differing only in speeds. Separate record and playback amplifiers.
M26KL 246 Gns.
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All prices excluding microphone

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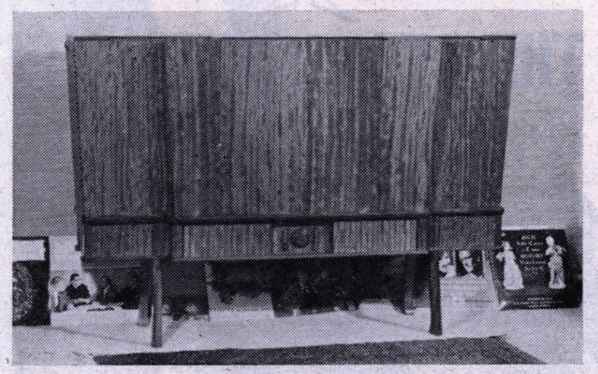
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Stereo Model 100
without a Tone Control.
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Whilst you are here do not miss the opportunity of seeing and hearing what we consider to be one of the highlights of the show, namely—

THE WORDEN *ARTICULATED* PICK-UP ARM
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Our representatives will be on hand daily, and will be only too pleased to make your acquaintance and answer all your questions regarding this unique system.

Whether you are here to just browse around, or in your capacity as a buyer, we feel sure a visit to us will be well worth while.

We look forward to seeing you at :

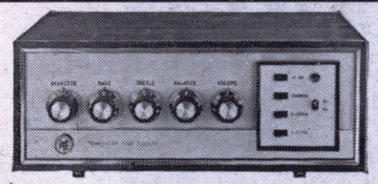
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P.S. : Our Technical Advice Service is available absolutely free.

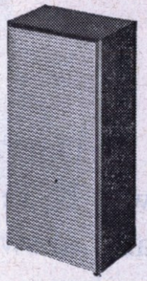
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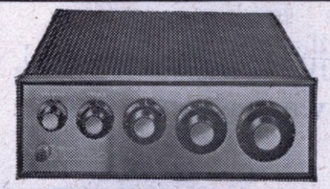
DEMONSTRATION ROOM 218



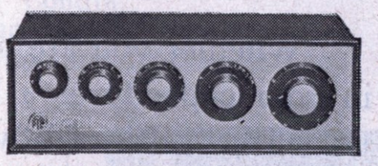
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A fully transistorised high fidelity amplifier of 15 + 15 watts r.m.s. output, having true high fidelity performance and the improved transient response possible only with a transformerless amplifier.



LOUDSPEAKER
MODEL HF9BS
19½ GNS.
Exceptionally fine reproduction in an elegant unit styled to fit happily with contemporary or traditional decor.



MOZART STEREO AMPLIFIER
MODEL HFS20M 36½ GNS.
Providing an undistorted output of 9 watts per channel on magnetic or crystal pick-up.



MONO AMPLIFIER
MODEL HF10M 24 GNS.
One of the smallest and most efficient high fidelity amplifiers ever devised for use in the home.



MOZART FM TUNER
MODEL HFT109M 24½ GNS.
Eliminates distortion, fading, or interference and ensures trouble-free reception with maximum fidelity of reproduction.

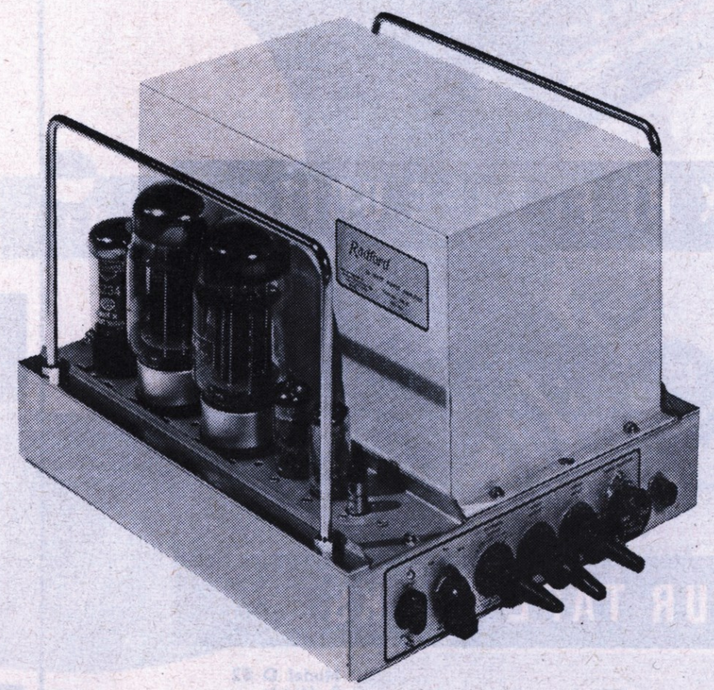


MOZART FM/AM TUNER
MODEL HFT113M 29 GNS.
Designed for the very best interference-free radio listening. FM performance as HFT109 with facility for AM tuning

Learn about these and the other fine Pye models at the Stand or from

PYE LIMITED OF CAMBRIDGE
HIGH FIDELITY DIVISION
P.O. BOX, 49 CAMBRIDGE





SEE THE RADFORD PAGE IN THE EXHIBITORS SECTION OF THIS CATALOGUE FOR DETAILS OF NEW ITEMS ADDITIONAL TO THOSE ILLUSTRATED ABOVE.

THE TRUVOX TOUCH

The Truvox Series 80

TWO TAPE RECORDERS



Model R 82
Twin Track
Model R 84
4-Track

SIX HI-FI TAPE UNITS



Model PD 82
Standard 2-Track
Model PD 83
Professional 2-Track
Model PD 84
Standard 4-Track
Model PD 85
Professional 4-Track
Model PD 86
(Illustrated)
Stereo ½-Track
Model PD 87
Stereo ½-Track

FOUR TAPE DECKS



Model D 82
2 Heads,
Twin Track
Model D 84
2 Heads,
Four Track
Model D 86
3 Heads,
Four Track
Model D 87
3 Heads,
Twin Track

Full technical details from :
TRUVOX LTD., NEASDEN LANE, LONDON, N.W.10. **Telephone: Dollis Hill 8011 (8 lines)**

DEMONSTRATION ROOM 304 BOOTH No. 61

ORIOLE



TIME-ORIOLE combines the talents of renowned artists with the most advanced recording techniques: These records offer you startling realism, with a depth and spread of sound that gives full meaning to the wonder of stereo.

... a new dimension in sound

ORIOLE Records Limited, 104 New Bond Street, London, W.1

D

MICROPHONES

WORK BEST BECAUSE BUILT BEST

Every AKG-Microphone is hand-fabricated and assembled under whiteroom conditions with continuous quality control. Each is numbered and response-tested, with a permanent factory record of its performance. One vital and unique characteristic of all AKG cardioids is that their directional characteristic holds deep into the bass—where it's needed most for crisp recording.

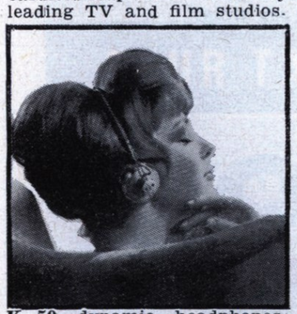
Below is a representative selection of AKG products. In addition to many more microphones of every type, there is a full range of accessories such as windscreens, table and floor stands, power supplies, transformers and remote-control units.



D 12—for public address work. The only true music mike that does not develop feed-back from loudspeakers at sufficient levels.



C 28/29/30 A—small studio condenser microphone, interchangeable omni and cardioid capsules. Used by leading TV and film studios.



K 50—dynamic headphones. Perfect bass without earmuffs; light, cool, comfortable for extended monitoring. Wide frequency and dynamic ranges, high sensitivity. Convertible mono/stereo.



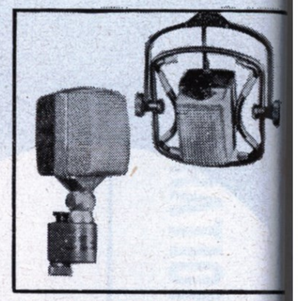
D 19 C — high performance, economical, for pick-up, announce, and semi-pro tape. Bass-cut switch.



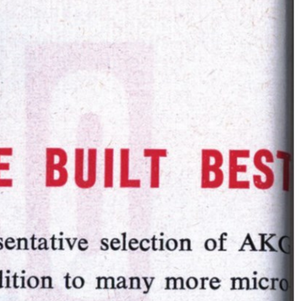
D 24 B—studio-quality voice and music recording, bass-cut switch, anti-magnetic shielding.



C 60 — high performance miniature, inter-changeable omni and cardioid capsules. Rechargeable battery-pack as table stand; neck-strap for use in the field: transistorised DC-Converter.



D 20 B left, **D 25 B** right—two mountings of quality wide-range studio mike with bass-cut switch.



C 12 A—new modern style studio condenser microphone for the most exacting professional recordings.



K 58 Boom Set—DK 58 mike and K 50 phones for use in language labs., intercom announcing, control, field remotes. For close talking. Light, rugged, comfortable clean sound, for extended use.

MODEL	RANGE Cps	SENSITIVITY mV/ubar	CARDIOID DISCRIM db/1000 cps/180°	IMPEDANCE ohms	DIMENSIONS inches	RETAIL PRICE in Great Britain
Dynamic Microphones						
D 12	40—15,000	0.22/2.0*	18	60 or 200	$5\frac{5}{8}$ x $2\frac{1}{8}$ x $2\frac{7}{8}$	£34 0 0
D 17	50—14,000	0.25	18	60 or 200	$4\frac{7}{16}$ x $1\frac{3}{4}$	£24 10 0
D 19 C	40—15,000	0.18	15	60 or 200	6 x $1\frac{7}{16}$	£17 10 0
D 19 E (2)	40—15,000	0.18/2.5*	15	50/200/50 000	$7\frac{1}{8}$ x $1\frac{7}{16}$	£21 10 0
D 20 B	30—16,000	0.22	20—25	60 or 200	$7\frac{5}{16}$ x $2\frac{1}{8}$ x $2\frac{7}{8}$	£61 10 0
D 24 B	30—16,000	0.18	20	60 or 200	$6\frac{1}{8}$ x $1\frac{7}{16}$	£60 10 0
D 25 B	same specifications as D 20B, shock-mounted for boom use					£67 0 0
D 58	70—12,000	0.1	(1)	60 or 200	2 x $\frac{3}{4}$	£11 10 0
Condenser Microphones						
C 12 A	20—20,000	0.5	20	50/200	$3\frac{1}{8}$ x $1\frac{5}{8}$ x $1\frac{7}{16}$	£139 0 0**
C 24	same specifications as C 12A, two units stacked for stereo					£230 0 0**
C28/29/30A	30—18,000	1.0—1.3	20	50/200	$6\frac{7}{8}$ x 1	£130 10 0***
C 60 Mains	30—18,000	1.3	20	50/200/500	$3\frac{1}{8}$ x $\frac{3}{4}$	£92 10 0**
Headphones K 50	20—25,000	0.156mW/95 phon	(stereo)	per unit 400	3 oz.	£7 10 0
K 58	Boom Set; see D 58 and K 50 for specifications				5 oz.	£13 10 0

(1) Close talking only; noise cancelling means.
(2) With 5-pole Cannon—XLR—Connector.
* Values are for high and low impedances respectively.
** Price includes all necessary cables, power supply, etc.
*** Complete Set; individual units priced somewhat lower.

POLITECHNA (LONDON) LTD.

LONDON W.1 3, PERCY STREET

Tel.: LAN 6236 Telex: 23894 Cables: POLINDUST LONDON

Amalgamated Wireless (Australasia) Ltd., Sydney, Wellington — Connoisseur Records Ltd., Dublin — McCurdy Radio Industries Ltd., Toronto — Hind Industrial & Mercantile Corporation Private Ltd., Bombay — International Aeradio (East Africa) Ltd., Nairobi —David Pollock (Pty) Ltd., Johannesburg—A. Rajab & A. Silsilah, P.O. Box 203, Jeddah Soundrite Ltd., Singapore, Penang, Kuala Lumpur—The China Engineers Ltd., Hong Kong.

See us at the AUDIO FAIR, Booth 39, Demonstration Room 112

For faithful reproduction use

GEVASONOR

●●●●● MAGNETIC TAPE ●●●●●

FOR THE REASON WHY, GO TO

★ BOOTH 40 ★

DEMONSTRATION ROOM 311

□ □ □ □ □ and ask us about □ □ □ □ □

GEVASONOR MAGNETIC TAPE



GEVAERT LIMITED · GREAT WEST ROAD · BRENTFORD · MIDDX.

Recording Studios use

Agfa TAPE



for finest quality sound

P E 31 Long Play
P E 41 Double Play
P E 65 Triple Play

* EXTENDED DYNAMIC RANGE. Special Techniques make Agfa Tape more tolerant to overload without distortion.
* HIGHEST SIGNAL/NOISE RATIO.
* MAXIMUM FLEXIBILITY provides intimate contact with tape heads for widest frequency response.
* PRESTRESSED to give maximum tensile strength.
* UNAFFECTED by temperature or humidity changes.
* BONDED COATING provides resistance to abrasion and keeps recording heads clean.

AGFA LIMITED

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Scottish Records with International Appeal.
Visit Booth No. 3 and receive a complete Catalogue of all our issues.

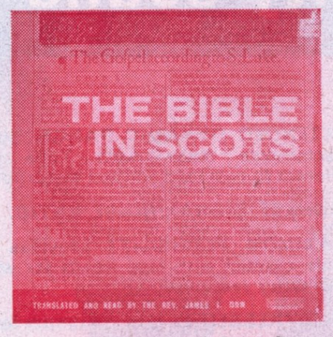
OUTSTANDING RELEASES WORTH NOTING



THE SCOTTISH NATIONAL ORCHESTRA
Conducted by Alexander Gibson
Scottish Dances Op. 32 by Iain Hamilton
(A first recording)
Scottish Dances Op. 59 by Malcolm Arnold.
Festival Overture by Shostakovich
(A first recording)
Colas Breugnon Overture, by Kabalevsky.
Mono LLP 1009. 12″ LP. Stereo SLLP 1010.



TWO PREVIOUSLY UNRECORDED HAYDN STRING QUARTETS
Quartet No. 44, Op. 50 No. 1 in B flat major.
Quartet No. 60, Op. 55 No. 1 in A major.
Played by THE EDINBURGH QUARTET
Mono LLP 1015. 12″ LP. Stereo SLLP 1016.



THE BIBLE IN SCOTS
Excerpts from the Holy Bible, translated and read in the authentic Border Scots dialect by
REV. JAMES L. DOW.
The Prophecy of Christ's Coming, followed by The Nativity.
The Miracle of the Feeding of the Five Thousand;
The Parable of The Prodigal Son: Proverbs: Psalms of David.
Mono only, ZLP 2008 12″ LP

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WAVERLEY RECORDS
(Geo. Jeffrey Limited)
23 EARL GREY STREET EDINBURGH 3

THE 1963 INTERNATIONAL AUDIO FESTIVAL & FAIR

Festival Director:
C. Rex-Hassan

APRIL

18th, 19th, 20th, 21st.

Hotel Russell

London, W.C.2

☆

Catalogue 2/6

World-wide demand for LEAK HI-FI

. . . lowest prices highest quality

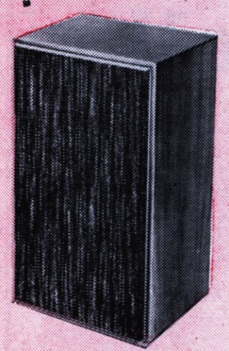


FIRST-CLASS PERFORMANCE

Each Leak instrument is individually built in the time-honoured British tradition and has the same high-quality performance as Leak instruments supplied to the B.B.C. and broadcasting and television companies and disc recording studios throughout the world who use them for monitoring (quality checking).

FIRST-CLASS APPEARANCE

Leak equipment has been styled by industrial designers to enhance its appearance in the home. The styling of the new Leak "Sandwich" Loudspeaker has been approved by Britain's Council of Industrial Design and has recently gained the coveted Fashion Foundation of America Gold Medal.



REASONABLE PRICE

The comparatively low price of Leak studio quality equipment is made possible by our being kept fully and efficiently employed by the world-wide demand which resulted from the lead we established in this field.

Left : *(Above) the Southdown Cabinet, price £28.7.0 and (below) the new Sandwich Loudspeaker, price £39.18.0.*

The Cabinet is shown with :

Point-One Stereo Pre-Amplifier	£21 0. 0d.
Stereo 20 Power Amplifier	£30 9. 0d.
Trough-line II F.M. Tuner	£29 7. 6d.

LEAK

. . . the first name in High Fidelity

H. J. LEAK & CO. LTD., Brunel Rd., Westway Factory Estate, London, W.3

Telephone : SHEpherds Bush 1173. Telegrams : Sinusoidal Ealux, London.

. . . for the guidance of visitors

This International Audio Festival is divided into two distinct Sections.

In the **First Section** on the ground floor in the Exhibition Halls are Booths on which Exhibitors are displaying their Products. These Booths are manned by expert personnel who are able to discuss any aspect of their equipment.

The **Second Section,** and the one which is considered the most important, is on the **First, Second, Third** and **Fourth** floors of the Hotel. On these floors the manufacturers who are exhibiting are giving live demonstrations. The way up to their demonstration rooms is by means of the main Hotel staircase, situated straight on through the Halls. There are other staircases for visitors to circulate around and down to visit any room, and there is a special staircase from the demonstration room floors allowing re-entry into the Main Halls.

How to use this Catalogue

On the following Blue pages of this Catalogue will be found a complete Guide to the 1963 International Audio Festival and Fair.

Overleaf in the Red are Plans showing the layout of the Exhibition. The first is of the Ground Floor Halls giving the positions of the booths and their number. It shows how to progress through these Halls to the main stairway which leads to the demonstration room floors. There is a large Indicator Board in the Glass Hall, on which is shown, floor by floor, the numbers of the Exhibitors demonstration rooms.

The next plan shows the general situation of the demonstration rooms on each floor and where the stairways up and down are to be found. It also shows the special Re-Entry staircase back down to the Exhibition Halls.

On the Corridor Walls this plan is repeated separately for each floor, with the names of Exhibitors written on it. These can be spotted quite easily because of their red frames.

Who is Exhibiting . . . and where

Then again, there is the Index of Exhibitors. Exhibitors are placed in this alphabetically by their Trade Name. Their

booth numbers and demonstration room numbers follow. The initial number of the room denotes the floor, i.e., the 300s are the third floor, the 100s the first floor and so on.

Type and style of Products and Manufacturers names

The remainder is made up of a Magazine Section, containing full details, both technical and explanatory, in article form on the Products of each Manufacturer. Each page is headed by the Trade name and beneath is the full title and address. Under this is their type or style of goods.

In the main, Exhibitors in this 1963 International Audio Festival and Fair are Manufacturers and they are entered as from the country of origin of their goods.

If they are Overseas Manufacturers, the U.K. Agent or Company and address is shown in bold type at the end of the article.

Many of the Exhibitors have also taken advertisements in this Catalogue and these advertisements carry the technical aspect further with illustrations. An Advertisers' Index is printed on Page 180, the last page of this Catalogue.

AMENITIES

There are ample cloakroom facilities in the Hotel for visitors who would like to leave their hats, coats and parcels.

LIFTS

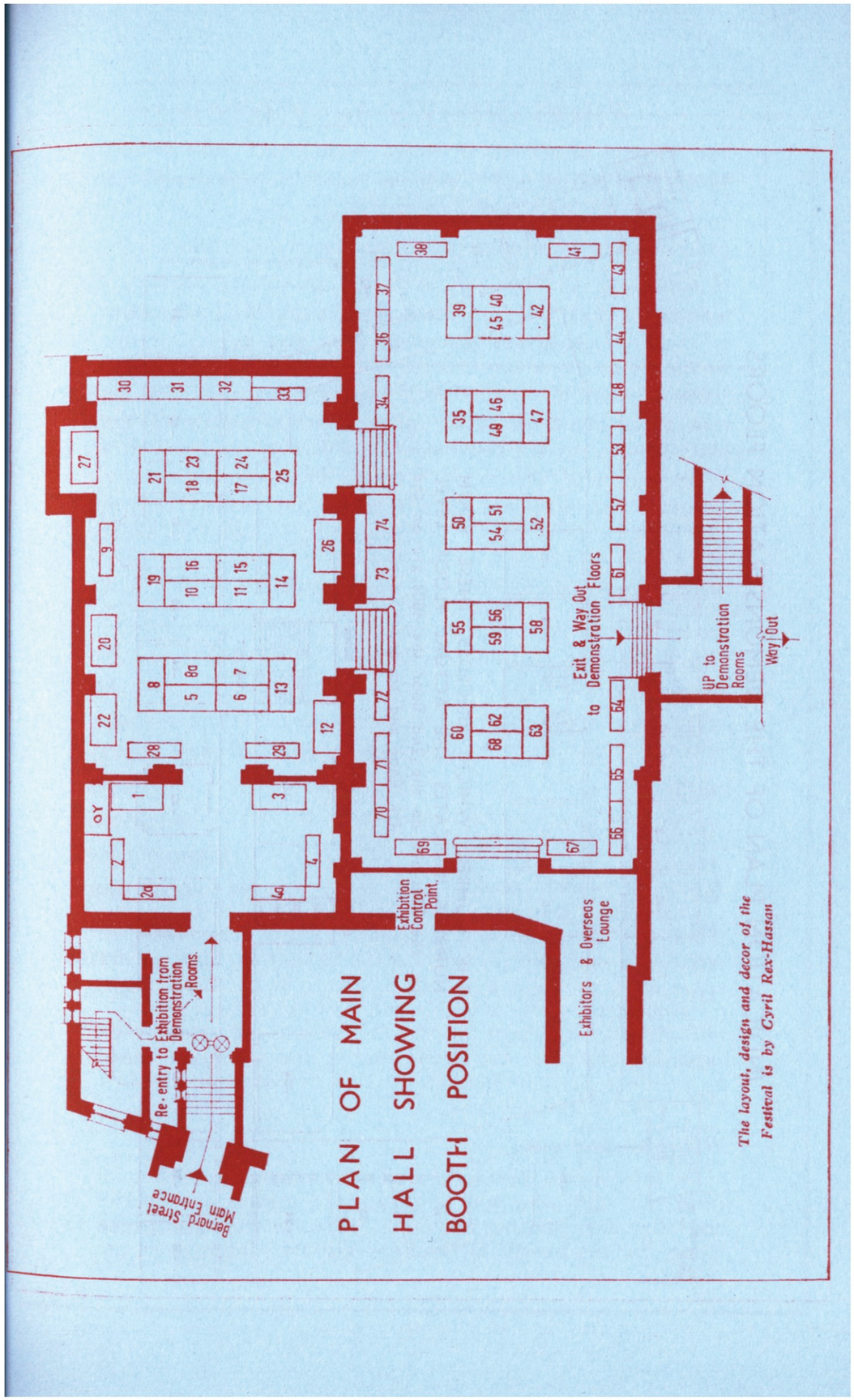
There are express lifts operating up to fourth floor only. They are at front of Hotel.

Where to eat and relax

A large bar is situated near the front Hotel entrance, and there are also spacious lounges. There are excellent restaurants adjacent to the centre Exhibition Hall, where either *Table d'hôte* or *à la carte* meals can be obtained. Light refreshments are also available in the Hotel lounges throughout the opening times of the Exhibition, and there is an extension of licence for alcohol during the afternoon hours. A luxurious Bar and Restaurant is to be found on the first floor next to the staircase.

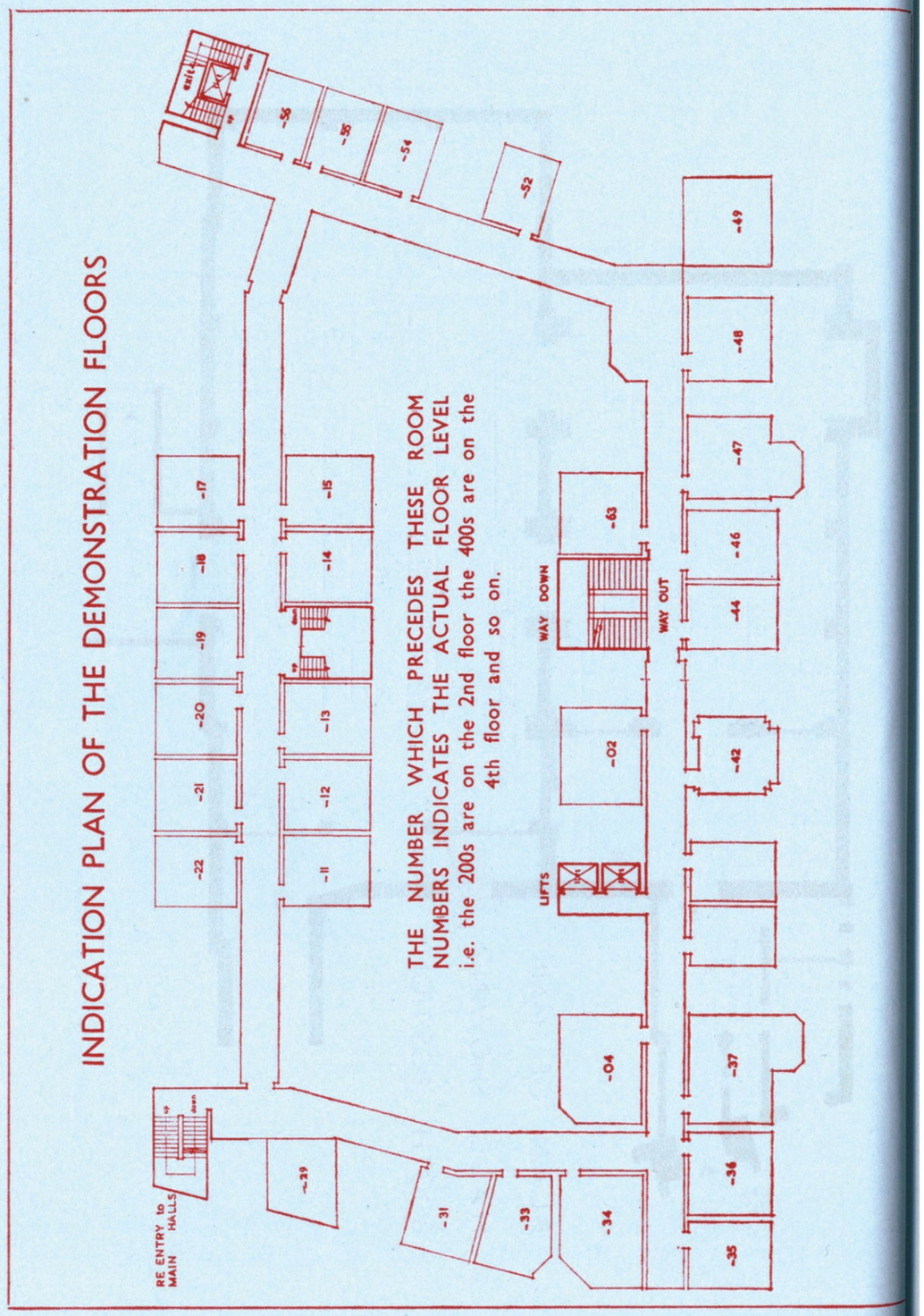
Where to find out

An Information Bureau is situated in the Glass Hall with courteous staff who will be pleased to answer any queries and offer any guidance required. Next to this is a special lounge for the benefit of Overseas Visitors. Interpreters are available.



PLAN OF MAIN HALL SHOWING BOOTH POSITION

The layout, design and decor of the Festival is by Cyril Rex-Hassan



INDEX of EXHIBITORS

Against each Trade name below, is the Booth number and the Demonstration Room number. The initial number of each Room indicates the floor.

All demonstration rooms are clearly numbered and also have a pennant protruding out from the doorway on which is written the Exhibitor's Trade name. This is readily viewable as you walk along the corridors.

Note that in some instances Exhibitors only have Booths and are not themselves demonstrating, although their goods may be heard in conjunction with the demonstrations of other Exhibitors. In the same manner some of the Press merely have lounges where, in comfort, visitors may meet the Editor, staff and contributors. There are also some trade lounges.

NAME	BOOTH	ROOM NO. OR LOUNGE
ACOS	57	204
AGFA	OY	249
A K G	39	112
AMATEUR TAPE RECORDING MAGAZINE	72	—
AMPEX	63	417
ARMSTRONG	34	347
AUDIO PIONEER	65	114
AUDIO RECORD REVIEW	54	346
BASF	36	118
BEYER	—	229
BRAUN	21	214
BRENELL	53	236
BUTOBA	8	421
CBS	13	333
CELESTION	47	302
CLAIRTONE	18	215
CHAPMAN	69	315
CONNOISSEUR	15	337
CLARKE & SMITH	46	221
DECCA	31	402

NAME	BOOTH	ROOM NO. OR LOUNGE
DESIGN FURNITURE	32	348
E M I	55	411
FED. BRITISH T/R CLUBS	—	233
FERROGRAPH	48	442
FI-CORD	9	212
GARRARD	38	222
GEVAERT	40	311
GKD	52	414
GOLDRING	44	202
GOODMANS	24	448
GRAMPIAN	68	242
THE GRAMOPHONE	—	444
GRUNDIG	17	237
HI-FI NEWS	41	—
ILIFFE	12	—
INSTRUMATIC	43	220
KEF	66	413
KELLY	28	117
LEAK	29	248
LOCKWOOD	11	412
LOEWE-OPTA	7	121
LONGACRE	22	—
L/P RECORD LIBRARY	—	344
LOWTHER	64	144
LUSTRAPHONE	60	247
LYREA	20	317
MORDAUNT	74	312
M S S	5	234
MULLARD	1	211
ORTOFON	4	113
PHILIPS	10	336
PLANET	33	318

NAME	BOOTH	ROOM NO. OR LOUNGE
PYE	59	218
QUAD	49	447
RADFORD	30	320
RECORD HOUSING	51	111
RECORDS & RECORDING	26	—
RECORD RETAILER	—	154
REVOX	62	217
ROGERS	71	149
SCOTCH	45	334
SCOTT	2A	—
SHERWOOD	6	420
SHURE	67	418
SIEMENS NORGE	19	422
S M E	37	—
SONY	73	321
S.T.C.	14	—
STUZZI	25	313
SYMPHONY	23	213
TANDBERG	2	122
TANNOY	16	349
TAPE RECORDING MAGAZINE	—	153
TELEFUNKEN	58	314
TEPPAZ	50	322
THORENS	4A	—
TRIO	8A	120
TRUVOX	61	304
VITAVOX	35	115
VORTEXION	27	342
WAVERLEY	3	—
WHARFEDALE	70	147
WHITELEY	42	415
WILLIMAN	—	246
ZONAL	56	—

ACOS

Booth 57
Demonstration
Room 204

Cosmocord Ltd.,
Eleanor Cross Road,
Waltham Cross, Herts.
Waltham Cross 27331

Microphones, Pick-ups and cartridges and accessories

This year Cosmocord are again giving a live show in which the performance of **ACOS** microphones will be compared directly with the real thing. In a presentation even more ambitious than last year's highly successful show, a range of inexpensive **ACOS** microphones will be demonstrated, including the **MIC 39 Dynamic,** the **MIC 44 Stereomic** and the new stick microphone, the **MIC 60.** The **MIC 60** incorporates a new principle of construction ensuring very consistent results. Disc demonstrations will be included in an integrated, lively programme. As it is usually difficult to get into an **ACOS** demonstration, visitors are advised to make Room No. 204 a top priority call.

AGFA

Booth OY
Demonstration
Room 249

Agfa Aktiengesellschaft,
Leverkusen-Bayerwerk, Germany

Tape

Agfa has an established reputation for high quality photographic products, Agfacolor films and Silette cameras are two of the names that can be immediately recognised. In recent years, Agfa magnetic recording tape has been added to the Agfa reputation. Now, for the first time, Agfa joins the International Audio Festival and reveals some of the secrets behind high quality sound recording.

In the Agfa demonstration room, sound is shown visually by means of the Agfa television "Visualizer." On the normal 21 in. cathode ray tube, sound can be seen as black and white images, so that details of original sound may be compared with the reproduction from Agfa recording tapes. The use of Agfa tapes **PE31** (long-play), **PE41** (double-play) and the newest **PE65** (triple-play) is discussed and without complicated graphs or mathematics the keen tape enthusiast will find help in obtaining the best possible recordings of which his equipment is capable. The "Visualizer" explains such things as signal to noise ratio and distortion factor, providing a unique opportunity to discover why some tapes give recordings which are so much better.

Professional Recording Studios and Broadcasting Companies use Agfa tape as they can prove the quality with their own test equipment; the amateur requires help such as the "Visualizer" provides if his recordings are to be outstanding. The right microphones, recorders, amplifiers and speakers are at this exhibition for the discriminating visitor to view; the right tape is his as well—if he knows what to look for! Agfa believe that their "Visualizer" will be of direct help to the keen amateur and therefore you should not miss visiting the Agfa booth and the demonstration room.

U.K. Address: Agfa Limited, 27, Regent Street, S.W.1. Telephone: REGent 8581.

AKG

Booth 39
Demonstration Room 112

Akustische u. Kino-Geräte GMBH,
Vienna, Austria

Microphones, Headphones

AKG are located in Vienna, Austria, and are one of the largest manufacturers of microphones in the world. More than 600 employees are solely engaged in the manufacture and development of microphones and their accessories, producing approximately half a million dynamic and condenser microphones per year. Every microphone undergoes at least two full-scale tests in anechoic rooms of advanced design, where frequency response, front-to-back ratio, etc., is measured and recorded.

AKG manufacture a large proportion of the microphones for Continental tape recorders with world-famous names. Hundreds of different versions are supplied to individual manufacturers' specifications.

AKG studio microphones (condenser and dynamic types) are used by the leading International broadcasting, film and recording studios where they meet the exacting specifications demanded by such users. Below are described a few of the types from the extensive AKG range.

D 7 A. Omnidirectional dynamic microphone. Rugged, yet inexpensive. Frequency range 80-11,000 c.p.s.

D 11 C. Cardioid dynamic microphone with bass attenuation switch and folding stand. Suitable for both low and high impedance inputs. Frequency range 80-13,000 c.p.s. Discrimination approximately 12 db.

D 12. Cardioid dynamic microphone for P.A. work. A good all-purpose type which offers protection against acoustical feedback.

D 19 C. Wide band dynamic cardioid microphone designed for semi-professional applications. Frequency range 40-15,000 c.p.s. Discrimination 15 db. Bass attenuation switch. Shielded against magnetic stray fields.

D 24 B. The studio version of the D 19 B, with built-in wind screen. Flat from 30-16,000 c.p.s. Discrimination approximately 20 db.

D 25 B. Dynamic cardioid studio microphone specially designed for boom operation. Used by leading TV and film studios.

D 77. Stereo microphone used by many Continental tape recorder manufacturers. Impedance 200 ohms, double line transformer available for high impedance inputs.

C 12 A. New studio condenser microphone. Provides the choice of nine different directional patterns by remote control, which can be selected during programme pick-up without disturbances or changes in level. Stabilised power unit supplied. Each microphone delivered with individually calibrated response curves.

C 24. Stereo condenser microphone. Suitable for M-S and X-Y stereophony.

C 28/29/30 A. Condenser microphone series for the highest professional requirements. Cardioid and omnidirectional patterns. Make sure you inspect these beautifully engineered microphones.

C 60. Miniature condenser microphone, weighs only 2 ounces. C 60 can be supplied with three metre fish-pole, elastic suspension and windscreen.

K 50. Dynamic headphones for mono and stereo. 20-25,000 c.p.s., perfect bass without earmuffs, light, cool, comfortable for extended monitoring. Weight only 3 ounces.

St 200. Microphone floor stand. This well designed folding stand gives maximum stability and shock protection.

Please refer to the AKG advertisement in this journal. If you require more detailed information on AKG products, please contact: **Politechna (London) Ltd., 3, Percy Street, London, W.1, AKG's exclusive sales organisation for the U.K. and Commonwealth.**

AMATEUR TAPE RECORDING & HI-FI

Booth 72

Plant News Ltd.,
Room 532, Ulster Chambers,
168, Regent Street, London, W.1

Publishers of Monthly Magazine

IDEAS ON PARADE

This is the tape recording magazine with the new ideas. That's why its number of regular readers is constantly on the increase.

At the Audio Fair some of these ideas will be an parade. All tape recording enthusiasts may be sure of a warm welcome at the **ATR** exhibit which they will find one of the most interesting and rewarding to visit.

From the May issue, which will be on sale, they will see how lively, instructive and absorbing **ATR** can be. Covering everything from tape-sponding to the latest techniques, its articles and features are presented in a style which, with the aid of attractive pictures and easy-to-follow diagrams, give it constant vitality.

DO-IT-YOURSELF

One of the most popular features of **ATR** is its money-saving construction projects, many of which are presented in the form of unique Construction Books contained within the magazine as pull-out supplements, with colour as an added attraction.

Included in this series of fascinating do-it-yourself projects are the **ATR** 4-Channel Microphone and Signal Mixer, the **ATR** Hi-Fi Preamplifier, the **ATR** Hi-Fi Power Amplifier, and an entirely novel exercise—Home Chromasonics. Scheduled for the future are the **ATR** Radio Tuner and other essential items of equipment which readers can build for themselves.

INFORMATION BOOKS

The magazine has also initiated a series of valuable Information Books in the form of pull-out supplements, starting in the March issue with **The ATR Guide to Buying a Tape Recorder.** All these back numbers may be obtained on the **ATR** stand, where its construction projects are also displayed.

CLUB CONTESTS

Since its first issue **ATR** has given encouragement and assistance to the tape recording clubs up and down the country, to which its staff pays frequent visits. The "Top Ten Clubs" feature and its annual Tape Club League Contest have created enormous interest and rivalry between the clubs who compete for the **ATR** Challenge Cup. This year will see the launching of a Tape Recording Contest specially for the clubs, in connection with this competition.

CHROMASONICS

Chromasonics, a new art form in which recorded sound is the artist, is capturing everybody's imagination. Scientists believe that it has a great future in such fields as commercial illustration, dress designing and exhibition design. Its creator is **ATR's** Technical Editor, F. C. Judd, A.Inst.E., who will be demonstrating Chromasonics in conjunction with STUZZI Tape Recorders in their Demonstration Room at the Fair.

Be sure you see this demonstration—it's a fascinating experience. And when you have seen it, if you feel you would like to do some "painting in sound" yourself, get a copy of **ATR** for November, 1962, at the **ATR** stand and learn "How to Make Your Own Home Chromasonics" from the special supplement in that issue.

AMPEX

Booth 63
Demonstration
Room 417

Ampex Great Britain Ltd.,
72, Berkeley Avenue,
Reading, Berkshire
Reading 55341

Precision Magnetic Tape Recorders

Ampex Great Britain Ltd. will be displaying a representative selection of equipment from their comprehensive range of professional and domestic magnetic tape recorders. These recorders are manufactured in the United Kingdom by Ampex Electronics Ltd. and in the United States by Ampex Corporation. Founded in 1944 Ampex have become the world's largest specialist company in magnetic recording devices. Their range of products find application not only in the home and in professional recording studios but also in television, in computers, in research aircraft, space vehicles and many other sophisticated applications requiring a high accuracy recording system.

The **Universal 351** series which has previously been seen at the Audio Fair will again be demonstrated. Minor modifications continue to be made in order to further increase the performance and reliability of this widely accepted machine. In addition to the **351** series, there will also be representative equipment from the range of portable professional recorders. Some of these will be seen for the first time in the United Kingdom. Demonstrations of both stereo and mono recordings will be made at intervals throughout the day and it is hoped to include a 3-channel stereophonic demonstration using the **Ampex 300-3** master recorder.

The domestic range of equipment is unchanged from last year and consists of the **1200** series of 4-track recorders. Since its introduction at the beginning of 1962 this recorder has found wide acceptance throughout the world as providing a professional standard of performance combined with economy in tape due to its ¼-track configuration.

Magnetic tape for both domestic and professional applications will also be exhibited. The **500** series, which is provided for the discerning amateur user, is now becoming widely accepted in the United Kingdom. Also included in the display will be the **400** and **600** series of professional tapes.

Throughout the period of the exhibition experienced engineers will be available not only to demonstrate some of the finest equipment available anywhere in the world, but also to discuss any aspect of magnetic tape recording.

ARMSTRONG

Booth 34
Demonstration
Room 347

Armstrong Audio Ltd.,
Warlters Road,
Holloway, London, N.7
North 3213

Complete Tuner/Amplifier Chassis, both mono and stereo. AM/FM Tuners and FM Tuners. High Fidelity Amplifiers.

Products in the comprehensive Armstrong range include (prices quoted are inclusive of purchase tax where applicable).

A20 Stereo Power Amplifier £23 12s. 6d. Incorporates two individual high fidelity amplifiers in one superbly compact unit. Each has a rated power output of 12 watts and a peak output of 25 watts, totalling 24 watts and 50 watts respectively. Frequency response is within 1 db 15-22,000 c.p.s. and harmonic distortion is less than 0.1% at 12 watts.

PCU25 Stereo Pre-Amplifier £21 0s. 0d. Designed for use with the A20 Power Amplifier, this pre-amplifier is notable for its high sensitivity and versatility and for its effective but simply operated filter controls.

PCU27 Stereo Pre-Amplifier £28 10s. 0d. Designed for the professional user who needs the very best, and every desirable adjustment is included. Any amplifier, or even dissimilar amplifiers, may be used with it but generally the A20 Power Amplifier is recommended.

T4B FM Tuner £20 8s. 0d. A self-powered tuner in attractive vinyl-hide case matching the PCU25 pre-amplifier. Features include automatic frequency control ; cathode follower output ; variable control giving perfect matching to any amplifier or tape recorder.

T4C FM Tuner £17 19s. 0d. The uncased version of the T4B tuner having exactly the same specification and features.

ST3 Mk. 2 AM/FM Tuner £25 12s. 0d. A self-powered tuner covering the VHF, medium and long wavebands. On AM bands the ferrite rod aerial, two IF stages and efficient AVC ensure good Continental reception. The FM circuit is completely stable and the automatic frequency control provides easy tuning.

Stereo 12 Mk. 2 Tuner/Amplifier Chassis £40 5s. 0d. The most complete chassis ever produced, combining an AM/FM Tuner, a comprehensive Control Unit and two High Fidelity Amplifiers on one compact unit. Each amplifier provides 8 watts push-pull output, and the tuner covers the full VHF, medium and long wavebands. There is automatic frequency control on VHF and a ferrite aerial with two IF stages on the AM bands.

Stereo 55 Tuner/Amplifier Chassis £29 18s. 0d. A junior version of the Stereo 12 Mk. 2 chassis providing 10 watts output, 5 watts each amplifier, and covering the full VHF and medium wavebands. Inputs, both mono and stereo are provided for pick-ups, tape record and playback, and also for possible future stereo radio.

AF208 Tuner/Amplifier Chassis £21 4s. 0d. An AM/FM chassis of 5 watts output covering the VHF and medium wavebands and with inputs provided for pick-up, tape recording and playback.

Jubilee Mk. 2 Tuner/Amplifier Chassis £28 5s. 0d. The high fidelity amplifier provides 8 watts push-pull output and the tuner covers the VHF band, with automatic frequency control, and long and medium bands. There are inputs for pick-ups, tape recording and playback.

AUDIO PIONEER

Booth 65
Demonstration
Room 114

Harwood & Martin Ltd.,
80, High Street,
Edgware, Middlesex

Sound Reproduction Apparatus.

A new development in record reproduction, has just been released to the British market, the Audio Pioneer. This new record player brings the playing of records almost back full circle.

The Audio Pioneer is extremely interesting on two counts. First, it gives stereo reproduction without requiring the conventional "stereo triangle" of two loudspeakers and the listener, which normally makes stereo impossible for people in small rooms. Second, by reverting to the stethoscope technique, no sound escapes to the outside world. Your neighbours will be unaware that you have the Basie band in full cry in your room.

The reason is that this is record reproduction using an entirely acoustic method of amplification. You may remember the old portable box gramophone of years ago, with its spring driven turntable, and the round sound-box with its large 78 r.p.m. needle, amplifying the record by means of the metal diaphragm in the sound box and then by means of a horn-type loudspeaker built into the cabinet.

The Audio Pioneer uses the same basic principle but from then on is completely revolutionary and in the development has been made completely and perfectly stereophonic.

The secret of the Audio Pioneer is all built into the revolutionary pick-up arm. This arm can be fitted to almost any turntable and works at either 33 or 35 r.p.m. The stereo cartridge collects sound from each side of a stereo disc. These signals are fed into two separate sound boxes. Here the signals from the left and right hand channels are amplified completely separately. This is done by the use of the most modern diaphragms. From the sound boxes the signal travels through built-in tubes to the rear of the arm, and then by way of connecting sockets is taken by tubes into the listeners' ears through a stethoscope-type head set.

As at all times the two channels have been kept completely separate, the right hand track of the record is transmitted into the right ear, the left track into the left ear, achieving perhaps the most perfect stereo separation yet devised.

Provided the advised length of tubing is used, i.e. one metre (more would over-amplify base) the sound reproduction is superb. The performance of the Audio Pioneer has been compared favourably with normal Hi-Fi equipment costing many hundreds of pounds.

It should be noted here that up to four people can listen at the same time by fitting additional sets of tubing and head-sets.

Because there is no electrical amplification there is no distortion, and a record can be heard as the artists and recording engineers intended.

By using the volume controls, each ear can be given its correct amount of volume and the sound correctly balanced.

Because of the head-set method of listening, outside noises do not interfere at all. You can enjoy your records in a crowded room without anyone else hearing or play them in a quiet house without disturbing anyone.

The Audio Pioneer is available in several versions and prices start at **£11 13s. 4d.** including P.T.

AUDIO & RECORD REVIEW

Booth 54
Lounge 346

Hanover Press Ltd.,
4, Mill Street,
London, W.1
Hyde Park 3937

Publication

Audio and Record Review's quality of writing and distinctive presentation combine to make it a unique event in sound journalism.

Look at the Musical Features—planned for real topicality, exceptional historical interest, humour, or because they provide the reader with a specialist knowledge he is keen to learn.

Look at the Record Reviews—comprehensive, authoritative. Written by a distinguished panel of critics, each a specialist in his own field. The readers trust the critics because the critics know their music.

Look at the Audio Section—a self-contained section of the magazine which aims to help the intelligent enthusiast to keep up-to-date with technical developments and products for fine sound reproduction.

Look at the Equipment Reports—a team of engineers directed by the Technical Editor undertake tests on all types of audio equipment. Combined laboratory checks and listening tests are carried out and incorporated in reports which are respected by the reader for their independence.

Look at the Audio Book Reviews—*Audio and Record Review* probably reviews more audio books than any contemporary in the U.K., and its representation in foreign countries keeps readers in close touch with the latest news from abroad.

Look at the State-of-the-Art Surveys—a brand new bonus for the reader, these surveys provide a depth coverage for special aspects of the recording repertoire—jazz, folk and blues, words and the lighter side. But (and this is important) not at the expense of the space we devote to classical music. These surveys are a genuine extra.

Look at the Magazine itself. Designed to inform and stimulate, the new *Audio and Record Review* is built on the experience of nearly thirty years. Its stature continues to grow as one of the best-respected magazines in music making, listening and "Audio" reviews.

BASF

Booth 36
Demonstration
Room 118

Badische Anilin & Soda Fabrik AG,
Ludwigshafen am Rhein, Germany

Tape

BASF looks to the future in Room 118 this year with two up-to-date demonstrations.

BASF Tape and Education

A very good example of one of the educational applications of magnetic recording tape is being demonstrated in Room 118. A complete four-position Language Laboratory has been installed and any visitor who is interested may take a seat in one of the booths, receive a lesson from the Control Console, taped of course, and this is re-recorded in his own booth while he is working and making his responses.

He can then listen to the master track again together with his own efforts but this time coming from the recording machine in his booth. The **BASF** tape is permanently enclosed in a tape magazine, safe from accident and as easily handled as a gramophone record.

New BASF Letter Tape

Record a BASF Tape Letter — FREE. A new Correspondence tape weighing less than 1½ ounces complete in mailing carton with 150 ft. of Long Play Tape is also being demonstrated.

Facilities are being provided for sending a free tape message from the Audio Fair to a friend or relative. There is nothing quite so intimate as the sound of a voice; nothing conveys nuances of meaning like the spoken word. Imagine the surprise and delight of someone actually "hearing" from you—on a **BASF Letter Tape.**

Appointments for recording messages can be made at Stand No. 36 in the main hall.

BASF recording experts will be on hand and will be pleased to answer any queries which will help enthusiasts to get the most out of their recording.

U.K. address: BASF Chemicals Limited, 5a, Gillespie Road, London, N.5. Telephone: CANnonbury 2011.

BEYER

Demonstration
Room 229

Elektrotechnische Fabrik
Heilbronn-Neckar,
West Germany

Microphones and Headphones

Eugen Beyer, Elektrotechnische Fabrik, a company specialising in the production of dynamic microphones and earphones was founded in Berlin in 1920. After the war Beyer moved to Heilbronn, West Germany, and in 1960 the company moved into a large and new building which produces approximately half a million microphones each year.

Beyer equipment is being used by Radio and TV stations all over the world and is gaining popularity with the amateur as well as the professional user.

Beyer Range

M100—Dynamic Moving Coil Microphone for studio purposes, omni-directional. Frequency response: 40-18,000 cps. Output level at 1 kc: 0.1 mv/ub (–80 dB). Output impedance: 200 Ohms.

M119—Dynamic Moving Coil Microphone for studio purposes, omni-directional. Frequency response: 50-16,000 cps. Output level at 1 kc: 0.22 mV/ub (–73 dB). Output impedance: 200 Ohms.

M130—Dynamic Ribbon Microphone for studio purposes, bi-directional. Frequency response: 40-18,000 cps. Output level at 1 kc: 0.9 mV/ub (–1 dB). Output impedance: 200 Ohms.

M160—Dynamic Ribbon Microphone for studio purposes, cardioid. Frequency response: 40-18,000 cps. Output level at 1 kc: 0.07 mV/ub (–83 dB). Output impedance: 200 Ohms.

DT48—Dynamic Headphone. High quality Acoustical Testing and Measuring Instrument. Frequency response: 16-18,000 cps. Output level: 114 dB/mW over 2.10 –4/ub at 400 cps. Plate resistance: 5 + 5 = 10 Ohms, 2 × 5 Ohms (sep. lead in wire), 25 + 25 = 50 Ohms, 2 × 25 Ohms (sep. lead in wire). Approx. required input — Voltage: 5 mV at 5 + 5 = 10 Ohms. Peak power demand: 0.4 W or max. 2 V at 5 + 5 = 10 Ohms.

M66—Dynamic Moving Coil Microphone for studio purposes, cardioid. Frequency response: 40-16,000 cps. Output level at 1 kc: 1 V/ ubar: 0.25 mV/ ubar. Output impedance: 200 Ohms.

M219—Dynamic Moving Coil Microphone. Omni-directional. Frequency response: 50-16,000 cps. Output level at 1 kc: 0.1 mV/ ub (–80 dB). Output impedance: 200 Ohms.

DT96—Dynamic Headphone. Frequency response: 30-17,000 cps. Output level + 3 dB at 400 cps: 110 dB/mW over 2.10/-4 /ub. Output impedance: 100 + 100 = 200 Ohms mono, 2 × 100 Ohms stereo.

DT98—Dynamic Microphone/Headphone — combination. Headphone: see DT96. Microphone: cardioid. Frequency response: 150-8,000 cps. Output level at 1 kc: 110 dB-mW over 2.10 –4 ub at 400 cps. Output impedance: 200 Ohms.

P75—Microphone Testing Unit.

U.K. Distributors: Fi-Cord International, 40a, Dover Street, London, W.1.

BRAUN

Booth 21
Demonstration
Room 214

Braun AG,
Russelsheimer Strasse 22,
Frankfurt/Main,
Western Germany

Hi-Fi, Stereo, Tuners, Amplifiers, Record Players, Speakers

Audio 1

This is a completely new mains energised transistorised feeder unit of outstanding quality. The short, medium and long wave bands and VHF waveband are arranged on two separate scales. Circuits AM : 8 + 1F trap. FM : 11 (+ 4 in F.M. stereo element). Output 2 x 14 Watt. Non-linear distortion 1% in middle region—up to 2% at 15 Kc/s. FM multiplex adaptor. Dimensions including record player : 25½ in. x 11 in. x 4¾ in. (6⅜ in. with plastic cover).

Hi-Fi Speaker L50

Three Speakers, one bass 10 in. and two Tweeters 4 in. in diameter. Frequency response 50 to 18,000 c/s ∓ 3 dB + 6 dB presence from 2,000 to 10,000 c/s, crossover frequency 2,000 c/s. Matching impedance 4 to 6 ohms. Maximum load 8 (14) w.

PC5 Hi-Fi Stereo Record Player

Speeds 78, 45, 33⅓ and 16⅔. Synchronous oscillation under 0.15% rattle-free. Signal to noise ratio greater than 52 decibels.

Tuner CET 15

Mains fed fully transistorised high fidelity AM/FM tuner. Matching in design to PC5 and CSV 13 and 60. 9 transistors, 6 Germanium diodes. 1 Silicium rectifier.

Facilities : AM local. AM, FM, AFC, FM Stereo (Multiplex).

Hi-Fi Stereo Amplifier CSV13

10 valves, frequency response 20 to 40,000 c/s. Co-efficient of distortion less than 1% over complete frequency range. Hum suppression greater than 60 dB. Crosstalk attenuation greater than 40 dB at 1,000 c/s.

Hi-Fi Speaker L60

Four speakers, one bass 12 in. and three tweeters 4 in. Frequency response 40-20,000 c/s ∓ 3 dB. presence between 2,000 and 10,000 c/s variable between 0 and + 8 dB. Matching impedance 15 ohms. Maximum load 15 (25) W.

U.K. distributors : Argelane Ltd., 251, Brompton Road, London, S.W.3. Tel.: KNI 8541.

BRENELL

Booth 53
Demonstration
Room 236

Brenell Engineering Co. Ltd.,
1a, Doughty Street,
London, W.C.1
HOLborn 7356

Tape Recording Equipment

The tape recording and hi-fidelity enthusiast will find a great deal of equipment to interest him on the Brenell stand.

Messrs. Brenell Engineering Co. Ltd., are renowned for their robust machines, which have an amazingly low wow and flutter level.

This year a new version of the justly popular Mark 5 recorder is available—the Mark 5 Series 2. This machine has the basic Mark 5 deck, but with narrower gapped heads than hitherto and, of course, a first class amplifier designed around the heads. It sounds good and looks good, presentation being in a grey covered wooden cabinet with matching masks of both deck and amplifier.

The ambitious recordist will be delighted with the Brenell Mark 5 Type "M" recorder—a mono machine fitted with separate recording and replay amplifiers to enable the actual recording to be heard as it is being made.

The "stereophile" need no longer feel neglected, for he is adequately catered for with the new STB 1 unit — a unit designed for use in conjunction with existing hi-fidelity installations. Briefly, it is composed of a superb four-speed Brenell deck, twin recording and twin replay pre-amplifiers mounted in a portable wooden cabinet in such a way that it may easily be removed from the cabinet as a complete unit for incorporating into a "permanent" installation.

The Mark 5 Series 2 deck and amplifier are available as separate items. A deck capable of accommodating reels up to 10½ in. in diameter (Mark 510 Series 2) will no doubt appeal to the professional recordist.

The Brenell decks accommodate up to 4 heads—mono and/or stereo—and Messrs. Brenell Engineering Co. Ltd. will be please to quote for special assemblies.

BRENELL MARK 5 SERIES 2 DECK.

3 Motors (synchronous type for capstan drive). Large flywheel. 4 Tape speeds (15, 7½, 3¾, 1⅞ i.p.s.) Very low wow and flutter—less than 0.05% at 15 i.p.s., 0.1% at 7½ i.p.s., 0.15% at 3¾ i.p.s., 0.25% at 1⅞ i.p.s. Spools up to 8¼ in. Accommodates up to 4 heads. Superimpose device.

BRENELL MARK 5 SERIES 2 TAPE RECORDER.

A high class machine incorporating the above deck and a specially designed amplifier to match the new type, narrower gapped heads used on the recorder. Output for coupling to Hi-Fi external amplifier. Large elliptical internal speaker. Smart appearance. Available with meter or magic eye for modulation level indicator.

BRENELL MARK 5 TYPE 'M' TAPE RECORDER.

A supreme machine, receiving world-wide acclaim.

STB 1 STEREO UNIT.

Many desirable facilities; "sound on sound"; track transfer; mixing; mono/stereo; two meters; variable bias; comparison between original and recorded signals; push pull oscillator; wide frequency range.

BUTOBA

Booth 8
Demonstration
Room 421

Schwarzwaelder Uhrenwerk Fabrik,
Burger, K.G., Schoenach, Western Germany

Portable Battery Operated Tape Recorders

BUTOBA is still the foremost name in portable tape recorders. The fruit of over ten years' experience in design and production of high quality portable equipment has gone into the Butoba range of recorders.

The M.T.5 model with further refinements added during the last year, is still the ultimate aim of all discriminating portable recorder users.

The six hours playing time now possible with triple play tape, the high quality and power of the playback, the economy of the running cost (it can be under 2d. per hour for batteries) and the many other useful facilities and features, combine to make it the most well liked recorder on the market.

The M.T.7 model has been introduced for those who cannot afford the original purchase price of an M.T.5, or who require a more compact and light-weight recorder. Designed and built to the same high standards as the M.T.5 model, it is the perfect answer for those who, although requiring an economically priced highly portable machine, still insist on quality of performance.

Although prototype M.T.7 recorders were shown at the Audio Fair last year, they were not introduced finally to the U.K. for some months as we had to be certain that the production models would live up to the high reputation which Butoba has earned.

U.K. address : Denham & Morley Ltd., Denmore House, 173/5, Cleveland Street, London, W.1. (Telephone EUSton 3656-7.)

C.B.S.

Booth 13
Demonstration
Room 333

C.B.S. International,
46, East 52nd Street,
New York, N.Y., U.S.A.

Magnetic Tapes

The main theme of C.B.S. (Columbia Broadcasting System of U.S.A.) Stand and Demonstration Room will be the New Range of 4-Track Magnetic Recording Tapes available in 4 Grades and 5 spool sizes. (Larger reels also available for professional use against special order).

C.B.S. Tapes proudly carry a world-famous name in sound and can be depended on to give complete satisfaction in High-Fidelity requirements mono or stereo, using 2 or 4-Track sound recording techniques whereby the user can record, retain and reproduce harmonic details, without reduction or loss of sensitivity.

C.B.S. new extended Frequency Range tapes are made from a special non-chipping, non-flaking iron oxide formulation ensuring highest quality of sound reproduction, with minimum distortion or "drop-out" and are rigorously tested for consistency over every stage of manufacture. Quality maintains through continued use and changing climatic conditions, and even at slow speeds, performance is superlatively good.

C.B.S. Tapes are sold by good stockists everywhere and are usually displayed in attractive self-service counter dispensers.

Sole Distributors : Desmond Burgess & Co., 190 Palace Chambers, Bridge Street, London, S.W.1.

CELESTION

Booth 47
Demonstration
Room 302

Rola Celestion Ltd.,
Ferry Works,
Thames Ditton,
Surrey
Emberbrook 3402—

Loudspeakers

This year Celestion exhibit a comprehensive range of loudspeakers specifically designed to meet the exacting needs of the amateur constructor whether he be interested in small transistor portables or complex High Fidelity systems.

Among the many models on display are circular cone units with diameters of between 2½ in. and 12 in., elliptical units with dimensions of 6 in. by 4 in., 8 in. by 6 in. and 10 in. by 6 in. and, of particular interest to the High Fidelity enthusiast, the pressure driven high note loudspeakers types **HF 1300** and **HF 1400** which are currently used by many broadcasting and recording companies in their studio monitors.

This year's Audio Festival also marks the introduction of a new 12 in. loudspeaker which is demonstrated in a contemporary slim-line cabinet of pleasing design, and you are most cordially invited to judge its outstanding efficiency in Demonstration Room No. 302.

CLAIRTONE

Booth 18
Demonstration
Room 215

Clairtone Sound Corporation Ltd.,
Toronto, Canada

Stereophonic Hi-Fidelity Reproducers

Clairtone Model S 1003 "Signature." The S 1003 series is the first Stereophonic unit in the world to produce a flow of sound which travels with equal clarity in every direction. **Amplification.** Total instantaneous musical power 70 watts (35 watts each channel). Balanced high-fidelity, push-pull, dual amplifiers. Two RIAA compensated phono pre-amplifiers. Complete DC filament supply to eliminate hum. Frequency response : 20-30,000 cps. Channel separation : 50 db. Hum and noise : 68 db below rated output. **Record Changer and Arm.** Garrard laboratory Type "A" 4-speed, automatic turntable with separate 6 lb. die-cast turntable. Built-in levelling device. Precision weight, counter-balanced pick-up arm with built-in, calibrated stylus pressure adjustments. **Cartridge.** Pickering, stereo, magnetic. **Tubes and Diodes.** 30 tube and 6 diode functions. (Actual number of tubes 21 and 6 diodes). **Special Features.** Automatic shut-off after last record. Edge lit, logging scale dial. Auxiliary speaker sockets for remote stereo connections. Space for tape recorder or record storage. Separate AM and FM tuning indicators. Dual shadow, electronic stereo balance indicator. Unit equipped for complete wireless remote operation. **Speakers.** Total of 4. 14 in. (Dutton type) EMI custom made heavy magnet (13,500 gauss) woofers with extended range aluminium cone. Two horn type high efficiency tweeters. Two fully enclosed cross-over net works, operating at 3,000 cps. **Enclosures.** Two separate infinite baffle, all wood, specially treated and lined for perfect acoustics. **Cabinets.** Approximately 81½ in. long, 19 in. deep, 26¾ in. high. Available in hand-rubbed oiled walnut only.

Clairtone Model S 603 "Empress." Silent Listening. The Empress is equipped with a socket for stereo earphone "Silent Listening." Switch is provided for silencing speakers. **Amplification.** Latest in engineering achievement, high-fidelity push-pull balanced dual amplifiers with total instantaneous musical power of 40 watts (20 watts each channel). Frequency response : 20-22,000 cps. Channel separation : 50 db. Hum and noise : 68 db below rated output. **Cabinets.** Approximately 62 in. long, 18 in. deep, 27½ in. high. Available in hand-rubbed oiled walnut or teak.

Clairtone Model S 403 "Princess." Silent Listening. The Princess is equipped with a socket for stereo earphone "Silent Listening." **Amplification.** As in Model S 603. **Speakers.** Total of 6. Two 11 in. oval 11,000 gauss heavy-duty extended range, aluminium cone, new ceramic magnet woofers and 4 tweeters. **Cabinets.** Approximately 58 in. long, 19 in. deep, 28¼ in. high. Available in hand-rubbed, oiled walnut or mahogany.

U.K. Distributors : Argelane Ltd., 251, Brompton Road, London, S.W.3. (Telephone : KNIghtsbridge 8541.)

CHAPMAN

Booth 69
Demonstration
Room 315

Derritron Ultrasonics Ltd.
(formerly Chapman Ultrasonics Ltd.),
24, Upper Brook Street, London, W.1
HYDe Park 2291

Amplifiers and Radio Tuners

A completely new range of Chapman domestic high fidelity equipment is on view and is being demonstrated. See the first of the fabulous new "1000" series of tuners :—

FM.1000 — VHF FM only high sensitivity 87.5—108 Mc/s self-powered.

FM.1005 — AM/FM providing complete international AM coverage on long, medium, intermediate and short wavebands and 87.5—108 Mc/s FM, self-powered.

Exhibited also are re-styled and improved Mark II versions of the world-renowned six-stage bandspread feeder units AM model S6BS and AM/FM model S6BS/FM.

The latest in Chapman stereo performance is demonstrated by the entirely new integrated 8 + 8 watts amplifier and control unit model 306, in a single newly styled cabinet. Total harmonic distortion is less than 0.1 per cent. at full power with 15 dB of feedback.

The ever popular Chapman monaural amplifier 10 watt **model 105** is shown again and maintains its high performance combined with simple elegance of design.

Technical enquiries from Hi-Fi enthusiasts will be welcomed at our Booth or in our demonstration room, and advice will be gladly be given on the best combination of equipment to suit individual requirements.

CONNOISSEUR

Booth 15
Demonstration
Room 337

A. R. Sugden & Co. (Engineers) Ltd.,
Market Street, Brighouse, Yorks.
Brighouse 2142
Stereo Cartridge, Transcription Turntables, Pick-ups and Arms, Speaker Enclosures

New product—The **Connoisseur Stereo Cartridge :** This new ceramic stereo cartridge having international ½ in. fixing centres will satisfy the most discerning audiophile and can be accommodated in the great majority of arms. The channel separation is well maintained to both ends of the frequency spectrum resulting in a well defined stereo image in correct perspective. The high compliance and low mass of the stylus system in conjuction with a well designed arm allow extremely low downward pressures to be accomplished. The versatility of the cartridge is such that it may be used under both magnetic conditions of loading and also under conditions of loading normally associated with crystal/ceramic type of cartridges, thus giving correct compensation for the RIAA playback standard without the need for complex equalisation networks.

The Connoisseur Craftsman III. Three-speed transcription turntable for stereophonic and monaural records. Requires minimum mounting space. Styled in black and satin silver. Heavy non-ferrous 12 in. lathe-turned turntable. Speeds 78, 45 and 33⅓ rpm. 4 per cent. variation on all speeds. Large stroboscope fitted beneath turntable viewed through mirror illuminated by neon light source. Synchronous motor balanced dynamically and electrically, runs at constant speed irrespective of large variation in supply voltage. No braking action employed to obtain change of speed. Precision ground large diameter idler wheel retracted in "off" position. Shafts lapped to mirror finish, fitted with adjustable bearings.

The Connoisseur Craftsman two-speed transcription turntable has been designed specifically to answer the stringent requirements of stereo disc playback and, in addition, provides superior performance for monaural reproduction. Speeds 33⅓ and 45 rpm. Synchronous motor, 12 in. lathe-turned turntable ; all shafts precision ground running in adjustable bearings.

Connoisseur Stereophonic Pick-up CS1. Ceramic type with diamond stylus. Developing approximately 20m.V. from normal stereophonic discs. 20db separation channel to channel. Frequency range 20—16,000 cycles ± 2dbs. The arm has been designed to accept both stereo and Mark II heads. This arm is also fitted with a precision lifting device.

Connoisseur Super Lightweight Pick-up, Mark III Arm with **Mark II** Heads for standard and microgroove recordings. The arm is adjustable for height and playing weight and is wired to accept both stereo and Mark II heads. The Mark II heads employ easily replaceable Diamond or Sapphire armature systems. Total mass 5 milligrams; top resonance 20/21K; freqnency range 25—20,000 cycles ± 2dbs.

Connoisseur Craftsman Speaker Enclosures are entirely new concepts in speaker design and construction and make the most effective use of new materials. They provide the maximum performance in the minimum of required space and are equally suitable for monaural and stereophonic reproduction. **Major** enclosure accommodates 8in. foam surround speaker and 3in. HF unit. Range 30/15,000 cycles. Height 43in. x 14½in. max. diam. **Minor** enclosure accommodates 8in. foam surround unit. Range 40/12,000 cycles. Height 36in. x 11½in. max. diam. Finished in attractive "Vynair" plastic with medium walnut and matt black trim.

CLARKE & SMITH

Booth 46
Demonstration
Room 221

Clarke & Smith Mfg. Co. Ltd.,
Melbourne Road, Wallington,
Surrey
Wallington 9252/7

High Fidelity Equipment, Pick-ups, Sound Equipment

The "New Look" high fidelity components, first shown at the National Radio Show last year, will be demonstrated with the E.M.I. Pick-up **EPU.100** alongside the new Clarke and Smith transistorised tape recorders **TR.634** and **TR.635.**

The components have now superseded the famous StereoScope range and include an integrated stereo amplifier, stereo pre-amplifier and power amplifier and a self-powered AM/FM tuner unit in contemporary styling.

Some of the more elaborate facilities of the old units have been dispensed with in favour of a more compact and simpler design and although the professional specifications of the units have been maintained, their prices show a marked reduction.

Perhaps the most interesting feature of the transistorised tape recorders is their high output (10 watts), a facility which permits their use in large halls without additional amplification. Two versions are available, one with Wright and Weaire series 5 deck and the other with Truvox deck.

Products of the Clarke and Smith Sound Equipment Division, including a crystal-controlled VHF tuner for rack mounting and transistor microphone pre-amplifiers, will also be on display.

DECCA

Booth 31
Demonstration
Room 402

Decca Radio & Television
Ingate Place, Queenstown Road, S.W.8
MACaulay 6677

Sound Reproduction Equipment and Records

Harmony in the home is the point of emphasis this year. The phrase has (and is obviously intended to have) several meanings: these Decca exhibits score on them all.

The approach which has produced the **Decca Stereo Decola Separates**—Decca's chief exhibit—ensures harmony on the quality versus appearance count. Developed from the integral Decca Stereo Decola, the Separates (which are, of course, available separately) comprise units of unquestionable technical excellence already housed in finely constructed furniture. They form the only complete range of high fidelity equipment specifically designed to match in appearance as well as in performance. The Decola separates range is made up of

a. Turntable unit with Garrard 301 transcription motor, Decca ffss pick-up with Mark I head, and Decca Microlift **(58 gns.).**
b. Stereo control unit designed to give all the flexibility of control normally needed, but with maximum simplicity of operation **(22 gns.).**
c. 24-watt power amplifier with frequency response flat from 30 to 25,000 c/s **(36 gns.).** A smart wood and expanded metal box is available for **5 gns. extra** if required.
d. Wide range VHF radio tuner (19 gns.).
e. The unique Decola multi-speaker system — a seven-speaker unit designed (Brit. Pat. No. 891014) especially to meet the needs of stereo but also outstanding for mono production. Its standard housing is a fine Regency reproduction corner piece **(51 gns.).**

All these units are, of course, definitely home equipment, and apart from making up a most harmonious whole, they serve the cause of harmony—now in the sense of music as a whole—with unsurpassed fidelity.

The **Decca "Professional" pick-up with Mark II head** is a development from the ffss pick-up fitted as standard to the Separates, and it is with this Professional pick-up that the Separates are, in fact, being demonstrated. It is available as an optional extra to anyone purchasing the Decola Separates turntable unit. The arm is a remarkable piece of precision engineering, with a unique weight-adjustment system, special silicone fluid damping and an integral lifting and lowering device. The Mark II head has improved separation at those frequencies where separation is very difficult to achive **(32 gns.** complete).

Also being demonstrated with the Decola Separates as an alternative is the **Anti-Rumble Integrated pick-up (11 gns.** complete) This revolutionary unit is the first successfully developed low-priced pick-up with automatic rumble attenuation having negligible effect on frequency response. It incorporates the **Deram ceramic cartridge**—a remarkable head for bringing to the purchaser of modest equipment for the first time the minimum record wear properties of the magnetic cartridge which can only be used with higher-priced apparatus.

Decca demonstrations will take place in Room 402. Our booth is Number 31.

DESIGN FURNITURE

Booth 32
Demonstration
Room 348

Design Furniture Ltd.,
Carnwath Road, Fulham
London, S.W.6
Renown 2217-8-9, 2210

Furniture Manufacturers

A wide selection of furniture in which to house High Fidelity equipment, including several Speaker Cabinets, fully approved and tested by a leading speaker manufacturer. Cabinets for record storage are also available. All products made to a very high standard in a variety of woods, namely Walnut, Sapele, Mahogany, Teak, and Rosewood, with an emphasis on good design, providing accommodation for equipment and yet being completely acceptable as part of the home furnishing.

E.M.I.

Booth 55
Demonstration
Room 411

Electric & Musical Industries Ltd.,
Hayes, Middlesex
HAYes 3888

Magnetic Recording Tape,
Professional Tape Recorders.

A full range of Emitape products will be on display at Booth 55.

Emitape was originally developed in 1947 to record the masters of the discs issued by the E.M.I. group—the largest recording organisation in the world. Today the E.M.I. tape factory at Hayes is the most advanced in Europe. Rigid standards of testing and control are maintained at all stages of manufacture.

There are five basic grades available in a variety of spool sizes :

Emitape 100 — double play
Emitape 99 — long play
Emitape 88 — standard play, PVC base
Emitape 44 — standard play, acetate base
Emitape 77 — professional pen-tested

Emitape accessories. Jointing compounds. Jointing block. Jointing tape. Leader tape. Non-magnetic scissors. Emicases. Empty spools. The popular Emitape Accessory Kit combines leader and jointing tape, stop-foil, jointing block and cutter, in an attractive plastic case for only 37s. 6d.

Emiguides. Six instructional tapes recorded by John Borwick. 1. Getting the quality right. 2. Microphone technique. 3. Tape Editing. 4. Outdoor recording. 5. Trick recording and sound effects. 6. Producing feature tapes. 8s 6d. each. 51s. the set, complete with plastic tray.

Emitape Guide to Better Recording. A 56-page, fully illustrated book by John Borwick, explaining the basic elements of good recording. On sale at Booth 55. Only 2s. 6d.

Also on display, **Emidiscs,** lacquer recorder blanks, and **Emifilm,** sprocketed in 16mm. and 35mm. widths.

E.M.I. Electronics Ltd. will be demonstrating in Room 411 the RE 321, RE 301, TR 52 and TR 90 professional tape recorders.

Model RE 321 is designed for complete portability and simple operation, coupled with the very high standard of recording required by the professional user. The unique design gives it a very wide field of application, including on-the-spot news reporting and sport commentating, and data recording by government and industrial establishments.

The RE 301 is the latest addition to the E.M.I. range, and is intended to provide an extremely flexible two channel recorder in transportable form, for the specialised needs of the communications field, audio analysis, noise measurement and comparison tests. A trolley is available with this model.

The TR 52/2 portable stereophonic tape recorder is designed for professional use on those occasions when it is necessary to leave the studio and can be employed not only for formal recording, such as actual performances, but also whenever critical assessment and judgment of performance is of paramount importance. In addition, it finds wide use in scientific and industrial research establishments. A trolley is also available with this model.

E.M.I. studio tape recorder TR 90 meets the requirements of the professional user in recording and broadcasting companies where magnetic tape recordings of the highest quality are essential. It is available in console, trolley or rack mounted versions.

Demonstrations will be given of the E.M.I. studio column loudspeaker type RE 350.

Also the **Emicorda,** a semi-professional four-track monaural recorder.

FEDERATION OF BRITISH TAPE RECORDING CLUBS

Lounge 233

211, Melfort Road,
Thornton Heath, Surrey

The Federation is appearing at the Audio Festival this year for the first time. Founded in 1958, F.B.T.R.C. represents Great Britain as a member of the International Federation of Sound Recordists (F.I.G.S.) and is responsible for the British Amateur Tape Recording Contest. Although the primary concern of the Federation is with Tape Recording Clubs, a great of work is undertaken on behalf of individual amateurs, who write to us for information and advice on all aspects of tape recording.

Our main purpose at the Festival is to allow visitors an opportunity to hear examples of the work of leading amateur recordists from many different countries and we will be playing tapes ranging from Drama to Documentary and from Pop music to the Classics. There will be a 30-minute performance every hour and a complete list, telling you what tapes are being presented during your visit, is available from the Federation Room and from various stands throughout the Exhibition.

Members of the Federation Committee are in attendance during and after each performance in order to answer your questions about the tapes themselves or about any other aspect of amateur tape recording.

If you wish to write to us, send to address above.

STEREO INTERNATIONAL MAGNETIC TAPE CLUB INCORPORATED

HEADQUARTERS
9, College Avenue, Melton Mowbray, Leicestershire, England.

The Club for Stereophonic Recordists

Once per hour a programme of stereophonic tapes recorded by amateurs, throughout the world, who are members of Stereo International.

The equipment used is that available to amateurs in that particular part of the world where the recording originates.

It is hoped to give a brief idea of the techniques used in these recordings at the time of playing.

Recordings such as these along with the recordists methods and techniques are exchanged on a two-way basis or by means of rounds, tapes and a quarterly magazine on tape, between members of the club.

For details of the club, contact R. V. Huddlestone, International Director, at the above address.

FERROGRAPH

Booth 48
Demonstration Room 442

The Ferrograph Co. Ltd.,
84, Blackfriars Road,
London, S.E.1
WATerloo 1981/2/3

Magnetic Tape Recorders and Accessories therefor.

As in previous years the demonstration in Room No 442 will be of stereo sound and will be a demonstration of the series 420 Ferrograph.

There will also be on display and demonstration the series of 5 monophonic Ferrograph, first announced on the 1st September 1962 and now freely on sale.

The feature of the current series 420 and the series 5 Ferrographs is the new capstan and flywheel assembly, whereby the speed of the motor has been doubled and the capstan itself is of a smaller size. This modification has resulted in improvements in several aspects of the well-known Ferrograph specification.

There will be in addition to the instruments mentioned above, the usual series of plugs, sockets, magnetic de-fluxer, hublock reels and other items which have been in the Ferrograph range for a considerable time and are tried and tested components for the serious user.

FI-CORD

Booth 9
Demonstration Room 212

Fi-Cord International Ltd.,
40a, Dover Street,
London, W.1
Hyde Park 3448

Tape Recorders

The **Fi-Cord 202** which was first released at the 1962 Festival and Fair has now proved a worthy successor to the world famous **Fi-Cord 1A.**

As a professional field recorder the **Fi-Cord 202** has gained popularity with reporters, film producers and broadcasters.

With full use of available accessories the **Fi-Cord 202** has also become established as a high quality home recorder as well as a flexible field machine.

Fi-Cord 202 Specification:
Dimensions: 9in. x 6½in. x 4½in.
Weight: 6¾ lb. (including Mercury Batteries).
Speeds: 7½ i.p.s. and 3¾ i.p.s.
Frequency response:
at 7½ i.p.s.: 50 to 12,000 c.p.s. ± 3db
at 3¾ i.p.s.: 50 to 8,000 c.p.s. ± 3db.
Wow and Flutter:
7½ i.p.s.: less than 0.3 R.M.S.
3¾ i.p.s.: less than 0.4 R.M.S.
Noise level: 50 db weighted.
Head gap: 0.00014 in.
Erase frequency: 60 Kc/s.

Recording tape time:

	Each Track 3¾ i.p.s.	Total	Each Track 7½ i.p.s.	Total
Long Play	24 mins.	48 mins.	12 mins.	24 mins.
Double Play	32 „	64 „	16 „	32 „
Triple Play	48 „	96 „	24 „	48 „

Power: Separate batteries for motor and electronics, in interchangeable cassettes. Each cassette may be loaded with the special Fi-Cord 202 Mallory mercury pack or with **Seven** Mercury cells (Mallory Type ZM 12 or RM 12).

Provision is made for the coupling of mains supply through a power unit. The same provisions allow for a 12 volt power unit.

Battery Life (RM12R):
Motor Batteries (Mercury) at 7½ — 20 hrs. (approx.)
Motor Batteries (Mercury) at 3¾ — 30 hrs. (approx.)
Electronic Batteries
Mercury at either speed — 60 hrs. (approx.)

Loud speaker: Built-in 3in. — 20 ohms.
Output — 180 milliwatts.

Direct Line Recording: Voltage required to load tape to standard level — 0.2 mV.

GARRARD

Booth 38
Demonstration Room 222

Garrard Eng. & Mfg. Co. Ltd.,
Newcastle Street,
Swindon
Swindon 5381

Sound Reproducing Equipment.

Garrard have been specialists in the manufacture of Sound Reproducing Equipment for over 40 years. A wide range of models is available as follows.—

Laboratory Series Auto Turntable Type A.
A transcription record player with a heavy sandwich constructed turntable which includes a non-magnetic outer turntable. It has fully counter-balanced pick-up arm. Records may be played automatically if desired.

AT.6 Record Player and Changer.
This model incorporates a heavy turntable and transcription pick-up arm which has a built-in stylus pressure adjustment with no variation from first to last record. It has the plug-in head feature.

Autoslim.
A small and compact record changer designed to occupy minimum cabinet space. Available with a plug-in pick-up head if desired.

301 Transcription Motor.
A unit of the highest class which is used by the B.B.C. and many other broadcasting stations. It is incorporated in high fidelity systems throughout the world.

Tape Decks.
An advanced, superbly efficient tape deck with magazine loading. Library storage units and a tape position indicator are available.
Supplied in either ½-track or ¼-track version.
A ½-track Battery Tape Deck is also available.

Automatic Tape Deck.
Suitable for continuous background music, guide commentaries, telephone answering systems, centralised dictation and the instrumentation field.

Pick-ups.
Model G.C.8 Turnover Crystal Monophonic suitable for long playing and 78 r.p.m. records.
EV.26A Turnunder Ceramic which may be used for both stereophonic and monophonic records including 78 r.p.m.

Single Record Players.
The 4 H.F. Unit is a high quality model with a 12 inch turntable. It incorporates the T.P.A. 12 pick-up arm.
The S.R.P. 10 is an inexpensive record player of sound design.

Stylus Pressure Gauge Model SPG.3.
An indispensable accessory for those who value their records. Easily readable scale, 0-12 grammes. Supplied complete with a 5 gramme checking weight.

Styli.
The complete range of replacement styli is available for all Garrard pick-ups. Diamond styli can also be supplied.

GEVAERT

Booth 40
Demonstration
Room 311

Gevaert Photo-Producten N.V.,
Mortsel, Antwerp, Belgium

Magnetic Tapes

The **Gevasonor** range of magnetic tapes comprises a full selection of types and sizes, meeting both domestic and professional needs, as follows :

Gevasonor Type M. Standard Play tape on cellulose triacetate base. An inexpensive tape of high quality for all general purposes. In spool sizes 4 in., 5 in., 5¾ in., 7 in., 8¼ in. and 10 in. Also 2,400 ft. lengths on NAB spools for professional use.

Gevasonor Type LR. An inexpensive Long Play tape on cellulose triacetate base. In spool sizes 3 in., 4 in., 5 in., 5¾ in., 7 in., 8¼ in. and 10 in.

Gevasonor Type LRP. An exceptionally strong Long Play tape on tensilised polyester base. In spool sizes 3 in., 4 in., 5 in., 5¾ in., 7 in., 8¼ in. and 10 in.

Gevasonor Type DP. Double Play tape on tensilised polyester base. In spool sizes 3 in., 4 in., 5 in., 5¾ in. and 7 in.

Gevasonor Type Tr. P. Triple Play tape on tensilised polyester base. In spool sizes 3 in., 4 in. and 5 in.

Gevasonor Type F. Standard Play tape on cellulose triacetate base, with rough backing to ensure troublefree rewind at high speed when working with single-sided spools. For use on professional recorders only. Supplied in 1,000 metre (3,290 ft.) lengths on European cores.

Gevasonor Magnetic Film. For the motion picture and television industries.

In the demonstration room (on the 19th, 20th and 21st April only). Mr. Leslie A. Guest will be presenting a programme under the title "High Fidelity in Sound and Colour." This will consist of music on Gevasonor magnetic tape accompanied by colour slides on Gevacolor film. Mr. Guest has become a familiar figure in photographic and audio circles through his lectures. This demonstration will be a new one specially prepared for the occasion.

U.K. Sales : Gevasonor Tape Division, Gevaert Limited, Great West Road, Brentford, Middlesex (Isleworth 2131).

GKD

Booth 52
Demonstration
Room 414

GKD Ltd.,
King Street,
Houghton Regis, Beds.
Dunstable 63300

High Fidelity Equipment Cabinets

Although comparative newcomers to the field of High Fidelity Equipment Housing, GKD Ltd. have already gained an impressive reputation. The design, quality and workmanship of their range of cabinets having achieved very favourable reactions from both trade and general public.

It was, in fact, the discovery of a need for well designed, functionally correct cabinets for Hi-Fi equipment at a price which enthusiasts could afford that first led GKD to consider their manufacture.

Considerable research and experiment resulted in a new concept of cabinet styling. A style which combined graceful, pleasing design with absolute conformity to the very exacting standards required for housing audio equipment. The success of these new cabinets was immediate and, in consequence, all GKD designs have been developed in close collaboration with leading manufacturers of Hi-Fi equipment such as H. J. Leak & Co. Ltd., and The Acoustical Manufacturing Co., etc.

For both these companies we market designs which have been tailored exactly to suit their respective equipment. This, we firmly believe, is the best possible way of achieving the finest results from the equipment together with the most aesthetically pleasing cabinets. To achieve, in fact, housing that is as good to listen to as look at !

We take pride in the fact that all GKD cabinets are soundly constructed of the finest materials ; built by experienced craftsmen with superb finish inside and out. As an example of the painstaking care and attention to detail that GKD bestow upon their cabinets, all motor boards are constructed from ¾ in. non-resonant material with a minimum size of 18 in. x 18 in., whilst in the case of the "Chiltern" and "Southdown" the motor board is supplied with sprung suspension.

All exterior trims on GKD cabinets are of satin anodised aluminium. A unique feature to the latest model in our range is a fitted heat shield.

It is through such attention to detail that GKD cabinets have so quickly become a by-word for perfection and reliance in the Hi-Fi world.

Come and see for yourself our range of superbly styled Hi-Fi equipment cabinets on Booth No. 52 or hear your favourite equipment demonstrated in Room 414.

GOLDRING

Booth 44
Demonstration
Room 202

The Goldring Manufacturing Co. (Great Britain), Ltd.
486-488, High Road, Leytonstone,
London, E.11
LEYtonstone 8343-4-5

Transcription Units, Pick-up Arms, Cartridges, Stylus Replacements

Transcription Units

The G.88 is the latest addition to the range of Goldring/Lenco Transcription Units and is making its first appearance at this Exhibition. This Unit, designed for use with any Pick-up Arm, has an 8 lb. non-ferrous turntable, infinitely variable speed adjustment, and neon indicator light.

The GL.70, since its introduction at the Audio Fair last year, has established itself as a Unit of the highest quality, and in addition to the 8 lb. die-cast turntable and infinitely variable speed mechanism, features an automatic lifting and lowering device. The pick-up fitted to this Unit is the L.70, which is also available separately.

The GL.58 now incorporates many improvements, but none-the-less remains at the same price. It is now fitted with a heavier duty motor and improved centre spindle bearing.

Pick-up Arms

An exciting new Arm, which can be dynamically balanced in all planes irrespective of which Pick-up Cartridge is fitted, will be introduced. In addition, the Goldring G.60, with its unique slide-in platform, and the L.70 Arm will also be shown.

Pick-up Cartridges

In addition to the well-known 580 and 600 Variable Reluctance Monaural Cartridges, the 700 Mk. II Variable Reluctance Stereo Cartridge will be shown, and the 380A moving magnet Stereophonic Cartridge, which has separation of 30 db at 1 Kc., and never less than 15 db throughout its entire frequency range.

The CS.90, being shown for the first time, is a Stereo Ceramic Cartridge with the characteristics of a magnetic cartridge. Its frequency response extends to 20,000 cycles and its separation at 1 Kc. exceeds 20 db. With its compliance of not less than 6×10^{-6} cms/dyne, it will happily track records at 2 grams.

The CS.80 is a turnover ceramic cartridge with an output of 200 mv, and yet high compliance. In addition a wide range of mono and stereo Crystal Cartridges will be shown.

Replacement Styli

The range of replacement Sapphire and Diamond Styli has again been increased to include all the known makes recently introduced in this country.

GOODMANS

Booth 24
Demonstration
Room 448

Goodmans Industries Ltd.,
Axiom Works, Wembley, England
WEMbley 1200

High Fidelity Loudspeakers, Pressure units and Components, High Fidelity Systems complete

See and hear the new **Eleganzia,** extra slim High Fidelity System at the Audio Festival for the first time—in demonstration room number 448. Note the size of the Eleganzia—particularly its depth—6¼ in. only.

A selection from our High Fidelity range is given below, these and the rest of the loudspeakers and components to complete the High Fidelity range are covered fully in the new 1963 Goodmans High Fidelity Manual which is free upon request. This manual, as well as being a detailed catalogue of Goodmans High Fidelity products, contains dimensional drawings of recommended enclosures, a special section covering musical instrument amplification, "Introduction to High Fidelity" specially for beginners, and stereo chapter.

A selection from the High Fidelity range will be on show on stand number 24 including both high and mid-frequency horn loaded pressure units, attenuators, crossovers and acoustical resistance units. A short summary of the range of Goodmans High Fidelity products is as follows:

8 in.	Axiette 8	6 watts	40-15,000 c/s	...	**£5 5 7**
10 in.	Axiom 10	10 watts	40-15,000 c/s	...	**£6 5 11**
12 in.	Axiom 201	15 watts	30-16,000 c/s	...	**£10 7 0**
12 in.	Axiom 301	20 watts	30-16,000 c/s	...	**£14 10 0**
9½ in.	Axiom 80	6 watts	20-20,000 c/s	...	**£20 6 3**

GRAMPIAN

Booth 68
Demonstration
Room 242

Grampian Reproducers Ltd.,
The Hanworth Trading Estate,
Feltham, Middlesex
Feltham 2657

Sound Reproducing Equipment.

The ever-popular Grampian DP.4 moving coil microphones are shown together with a full range of stands, swivel-holders, parabolic reflectors and other accessories. The smaller DP.6 model can also be seen.

Outstanding in performance, and attractive in style, are the Grampian ribbon microphones. Two models are available — the GR.1 having a reduced back sensitivity and the GR.2 with the usual "Figure 8" sensitivity pattern.

A new self-contained, battery operated reverberation unit for amateur or professional use, has now been developed and its amazing effect can be heard in the demonstration room. Two inputs are provided and the output will feed into an ordinary amplifier or tape recorder.

Another new Grampian product is an "all transistor" pre-amplifier mixer. It has three independently controlled inputs—two of medium impedance and one of high, variable Bass and Treble tone controls, ample gain and exceptionally low noise level. The standard output is 600 ohms but any other impedance can be supplied to special order. As a battery is incorporated, the unit is independent of mains supply.

The "Ensa A.C." is a new portable outfit for the dance band or club. It comprises a DP.4 microphone with floor stand, a 12 watt transistor amplifier and two speakers in vertical line formation. There are four input sockets with full mixing facilities. All leads and plugs are supplied.

The Vibromajor, Valencia and Tremulo-Super guitar amplifiers are also on show.

The "Handi-page" — a light-weight, self-contained speech amplifier —has a multitude of applications indoors and out. This unique instrument is always ready for instant use and has a very wide field of coverage. The volume is readily adjustable.

The many Electrical Contractors who visit the Festival will be interested in the comprehensive range of Grampian sound equipment designed for use in industry, commerce and the public services.

A recent introduction is the Model 624 15 watt transistor amplifier for battery or A.C. mains operation. Grampian are also showing the first of a new range of industrial "line source" column loudspeakers. For use with long cable runs is DP.4 desk microphone incorporating a transistor amplifier, is now available.

"THE GRAMOPHONE"

Press Lounge 444

General Gramophone Publications Ltd.,
379, Kenton Road, Kenton,
Harrow, Middlesex
Wordsworth 2010

Publishers of "The Gramophone' and "The Gramophone" Classical L.P. Catalogue and "The Gramophone" Popular Record Catalogue.

The Gramophone is Britain's oldest and most widely read gramophone record journal. It was founded in 1923 by Sir Compton Mackenzie and Christopher Stone and today has a circulation in excess of 75,000 copies per month, circulating to very nearly every country in the world.

Record reviews, in conjunction with a comprehensive technical section, form the basis of the journal. In the technical field the team of experienced writers is led by Percy Wilson. The team of record reviewers is necessarily larger and includes such well-known critics as Alec Robertson, Lionel Salter, Andrew Porter, Philip Hope-Wallace, Deryck Cooke, Roger Fiske, John Freestone, Edward Greenfield, Trevor Harvey, Malcolm Macdonald, Jeremy Noble, Stephen Plaistow, Denis Stevens, Roger Wimbush and W. A. Chislett. On the lighter side, and in the field of Jazz and Swing, further reviews are contributed by Charles Fox, Alun Morgan, Brian Rust, Nigel Hunter, William Gilman and Michael Cox. Quarterly retrospective articles are contributed by Desmond Shawe-Taylor and John Warrack (Music Critics to the *Sunday Times* and the *Sunday Telegraph* respectively).

The Gramophone is published on the 1st of the month, price 1s. 6d. Annual subscriptions (home and overseas) 24s. per annum.

In addition the Company publishes two quarterly record Catalogues — one related to Classical music and the other to Popular music.

GRUNDIG

Booth 17
Demonstration
Room 237

Grundig (Great Britain) Ltd.,
Newlands Park, Sydenham, London, S.E.26
SYDenham 2211

Tape Recorders.

Grundig (Great Britain) Limited are exhibiting their full range of tape recorders—the TK 14, TK 18, TK 23, TK 40, TK 41, TK 46 and its chassis the TM 45.

All tape recorders in the Grundig range are now well established with the exception of the recently introduced TK 18. Mechanically similar to the TK 14 and TK 23, the TK 18 is in addition a fully automatic tape recorder. Equipped with four valves, one of which, the EF 83 is a specially designed control valve ensuring perfect results rendering the need for separate recording level adjustment unnecessary. Ideal for the beginner the TK 18 is also invaluable to the serious enthusiast demanding a consistently high standard in his recording.

Of particular interest is the TK 46. A notable feature of this machine is its facilities for multiple synchronous recording, recording with echoes, via tape monitoring with a delay depending upon tape speed. Both channels, complete with output stage and loudspeakers give full stereo reproduction, although provision is also made for the connection of additional amplifiers and speakers. Mechanically the TK 46 is identical to the well-known four-track TK 40 and its twin-track counterpart the TK 41. The TK 41, a semi-professional model, has the special feature of straight through amplification delivering 7 W into a loudspeaker system of 5 ohms impedance.

In addition visitors to the Grundig Demonstration Room 237 will have the opportunity of seeing a number of accessories for use with these machines, one of the most interesting being the new Grundig Stereo Mixer type 608.

Also shown in Room 237 are the new Grundig Hi-Fi installations incorporating Grundig Hi-Fi Stereo Units. These consist of high quality Tuners with their Control Units, high fidelity Stereo Amplifiers and Superphon Loudspeakers of extremely high efficiency.

The specification of individual units meets the requirements of other units so that matching or inter-connecting problems are non-existent.

Abridged Specification of Grundig Hi-Fi Units HF1 Tuner and Control Unit. Wavebands : VHF 87-104 Mc/s. SW 5.08-18.8 metres. MW 185-588 metres. LW 857-2069 metres. Valve line up : ECC85, ECH81, EBF89, ECC83, plus two rectifying diodes. Controls : Tuning, Volume, Waveband Selection, 3 Continuously Variable Tone Controls, 2 Tone Pre-Selectors, Ferrite Aerial Switch, Stereo/Mono Switch, Stereo Balance Control.

Sockets provided for Aerial, Earth, VHF Dipole, Reverberation Unit, Tape Recorder, Pick-up.

NFI Power Amplifier. Also contains power supply for HF1. Valve Line-up : ECC83, 2 x ELL80. Frequency Response : 30-30,000 c/s ± 1 dB. Distortion Factor : 0.3%. Output Power : 2 x 8.5 W. Output Impedance 3 and 5 ohms.

HI-FI NEWS

Booth 41

Miles Henslow Publications Ltd.,
99, Mortimer Street, W.1
Museum 3967

Magazines and Books

Hi-Fi News first appeared on the bookstalls in the Spring of 1956, to serve the interests of Audio Enthusiasts—users, dealers and manufacturers. Since then its scope has been considerably widened, and its readership has steadily increased from an initial 5,000 to nearly 24,000—which must be its own best recommendation. *Hi-Fi News* is held in high esteem for its reliable reviews, its informative articles, and its lively but well balanced interest in all audio matters. (Published Monthly, 2s.).

The Tape Recorder serves the tape recording enthusiast, the manufacturer and the dealer on parallel lines with its sister journal, *Hi-Fi News*, *The Tape Recorder* is a well-balanced publication for the newcomer, the hardened enthusiast, and the experimenter. Its reviews of equipment and accessories are the finest to be found anywhere—reliable, readable and well presented. Its editorial features are always well illustrated and full of information. *The Tape Recorder*, like *Hi-Fi News*, is read in all parts of the world, and is regarded by the user and the Trade alike as the leading journal in its field. At 2s. monthly it is a monthly " must " for everyone who is seriously interested in " Tape."

HI-FI BOOKS

Hi-Fi Year Book was founded in 1956 for the purpose of collecting and presenting all the usefully available data on Audio Equipment. Year by year since, it has reliably filled this need, increasing its directory sections to follow the expanding and changing market. This year, the 1963 edition provides a remarkably large summary of audio products. **Hi-Fi Year Book** is the buyers' guide for all things audio, and is referred to annually in more than 8,000 homes, shops and laboratories. (Annually, 10s. 6d., posted 11s. 6d.).

Cine Year Book. A similar publication to the Hi-Fi Year Book, contains complete details and specifications of all available cine products. The 1963 edition is to be published mid-May. Price 10s. 6d.

Hi-Fi for Beginners. This book has been welcomed as the ideal introduction to High Fidelity, easy to understand and profusely illustrated. Price 7s. 6d.

Stereo for Beginners, by B. J. Webb. Stereo by disc, tape and radio are all covered in this new book. " The foremost handbook on the subject." Price 7s. 6d.

Sound and Cine for Beginners, an up to date guide covering all aspects of adding sound to film. Written by Richard Golding. Price 7s. 6d.

Cabinet Making. An indespensable book by Wheater Smith on cabinet making, whether for the home or for Hi-Fi applications. Many special illustrations and drawings. Price 7s. 6d.

Experimental Recording. Twenty practical experiments and the full details on how to make a clockwork portable recorder of exceptional performance. Price 5s.

ILIFFE

Booth 12

Iliffe Electrical Publications Ltd.,
Dorset House, Stamford Street,
London, S.E.1

Publishers.

Wireless World is Britain's leading technical journal in the general field of radio, television and electronics. Providing a complete and accurate survey of the newest British technique in design and manufacture, its articles cover every phase of the radio and allied industries. Contributions by recognised experts deal with design data and circuits for every application. High fidelity receives searching attention. *Wireless World* is published monthly, 2s. 6d.

Wireless & Electrical Trader is the leading trade journal of the radio, television and light electrical industries, widely read by dealers, service engineers, manufacturers and wholesalers. Obtainable only on subscription basis by bona fide members of the trade, it provides an invaluable weekly survey of trade trends, experienced observers reporting on every development, technical or commercial. "Audiotopics," a regular feature now in its sixth year, presents the latest technical and commercial aspects of the audio field—an invaluable aid to dealers in keeping right up-to-date in this increasingly important subject. Practical details of new products, sales promotion and display schemes are supplemented by service sheets compiled in the *Trader's* own laboratory. *Wireless & Electrical Trader* costs £3 a year, including postage.

Technical Books. Authoritative and up-to-date books on many aspects of radio and television are also on show. Among them is :

High Quality Sound Production and Reproduction. Sound studio and outside broadcasting practice. A B.B.C. Programme Operations training manual. H. Burrell Hadden.

This book, will prove of absorbing interest to people, both amateur and professional, interested in the production and reproduction of high-quality sound. The book is divided into three parts, the first of which deals with the basic principles. The second describes studio equipment: microphones, loudspeakers, studio control desks, outside broadcasting equipment and P.A. equipment. The final section deals with the placing of microphones. 42s.

INSTRUMATIC

Booth 43
Demonstration
Room 220

Instrumatic Ltd.,
Grove Works,
Elmgrove Road,
Weybridge, Surrey.

Precision Instrument Makers.

Manufacturers and sole distributors, under exclusive licence, of the world-renowned **Worden Articulated Pick-up Arm.** This unique arm, due to its near-perfect application of pertinent geometrical and dynamic principles, together with a mechanical precision hitherto unattempted in the commercial production of gramophone pick-up arms, sets an entirely new standard in record reproduction.

The main features of the Worden Arm are as follows :—

Automatic elimination of inward lateral thrust.

Tracking correct to $\pm\frac{1}{4}°$.

Very low lateral and vertical friction (less than 50 milligrams).

Arm dynamically balanced.

Very low mass (allowing optimum performance from ultra-lightweight cartridges of extremely high stylus compliance, as well as the more normal types).

Complete versatility ; headshell accommodates all cartridges possessing $\frac{1}{2}$ in. mounting centres, also pick-up heads such as the Decca FFSS series (with special adaptors).

Arm and headshell made of well-seasoned piano-quality Canadian maple, thus minimising resonance.

Besides producing an audible improvement in cartridge performance, particularly towards ends of record sides, the above design features also result in greatly reduced record and stylus wear.

Bearing in mind that among the many visitors to the Audio Festival there will be those primarily interested in the continued playing and preservation of their treasured record collections, our demonstration will commence with historical records, continuing through later recording techniques, and ending with the most modern in stereo. Also following the recent controversy in the technical press regarding the vagaries of disc-cutting rake, we will show that providing the requirements of first principles are fulfilled, i.e., correctness of tracking and reduction of side thrust to an absolute minimum, cutting rake angle can be of little or no account in the satisfactory reproduction of sound from discs of various makes, and using one pick-up head.

KEF

Booth 66
Demonstration
Room 413

KEF Electronics Ltd.,
Tovil, Maidstone, Kent
Maidstone 55761

Loudspeakers

A full range of complete speaker systems will be demonstrated, from the diminutive Celeste to the 8 cu. ft. Lockwood/K1 system. These cover all requirements both domestic and professional and every model possesses the refinement of balance and smoothness for which the house of **KEF** is now well known.

Since pioneering the first British all plastic speaker system **KEF** have concentrated on developing the techniques necessary to deal with these new materials. The accent has always been on natural balance and freedom from colouration and it is now possible to produce driver units which are unparalleled in smoothness and transient response.

The Celeste which was first introduced at last year's show is now in full production and enjoying an enviable reputation as the best ultra-compact system in the world. With a volume of only 0.4 cu. ft., it fits easily into any room scheme and yet provides a performance which can be approached only by the best of the larger compacts.

For those who can accommodate larger speakers there is a choice between the Slimline and the conventionally styled K22 (name to be supplied). This new model shown here for the first time, employs a 13 in. x 9 in. flat piston bass driver and a 1½ in. hemispherical dome radiator, which combine to give true balance and smoothness. Excellent stereo is also ensured by a wide dispersion of sound over the whole audio range, which is achieved by the special shape of the diaphragm.

Professional users and hi-fi enthusiasts will delight in the "big guns," the 4 cu. ft. Monitor and the superb Lockwood L.E.1., both fitted with standard K1 three speaker systems.

We are also pleased to offer our bass drivers and tweeter for separate sale. These units are extremely versatile and are recommended to home constructors seeking the finest possible reproduction as well as to organ builders and architects. Constructional details are available for a variety of enclosures.

KELLY

Booth 28
Demonstration
Room 117

Kelly Acoustics
Romagna Works, Bycullah Avenue,
Enfield, Middlesex
ENField 7890

Acoustical Engineers

Kelly Mk. II Ribbon

The original (Mk. I) version of this high frequency loudspeaker was produced in 1954, and the Mk. II was developed in 1956. During the past seven years, many thousands of this unit have been sold throughout the world and it is now standard equipment in the major recording and broadcasting studios. It is also fitted in a number of commercially available domestic and professional loudspeaker systems.

The response is guaranteed flat and smooth from 2,500 to 20,000 c/s ± 2 dB, and it is the only commercially available speaker which will reproduce a 10 microsecond pulse at a repetition rate of 10 Kc/s. The response of the speaker extends to well beyond 60 Kc/s and apart from its prime function as a domestic H.F. reproducer it is increasingly used in industry as a high intensity ultrasonic acoustic generator.

Mk. III L.F. Driver

After several years of development, the Mk. III L.F. drive unit was put into production twelve months ago. It is designed to match exactly the sensitivity and complement the frequency response of the Mk. II Ribbon. The free air resonance is 30 c/s, and the dynamic cone mass is 35 grammes, enabling an infinite baffle of relatively small dimensions (3 cu. ft.) to be used without unduly restricting the lower bass response. The response is flat and smooth to 4 Kc/s, and then rolls off at 12 dB per octave.

Crossover Network CO/1/15

This Network is used to couple the two loudspeakers to the amplifier. When the three units are mounted in a suitable enclosure the overall response is 50 to 18,000 c/s ± 2 dB, 30 c/s and 22 Kc/s being — 12 dB.

Tall Boy Enclosure

This unit, measuring 33½ x 18 x 12 inches, is available in Sapele Mahogany or Medium Walnut. It houses the three units mentioned above and the system meets the quoted specification.

Other Products

Kelly Acoustics manufacture specialised electro-acoustic and electro-mechanical transducers, including microphones, accelerometers and generators, with responses extending into the ultrasonic region. Additionally, crystal and ceramic microphones are in quantity production for supply to leading tape recorder manufacturers.

LEAK

Booth 29
Demonstration
Room 248

H. J. Leak & Co. Ltd.,
Brunel Road, Westway Factory Estate,
London, W.3
Shepherds Bush 1173

Amplifiers, Loudspeakers, F.M. Tuners, Pick-ups.

For 29 years the Company has been engaged exclusively on research, development and the manufacture of audio frequency equipment of the highest quality. Leak gave the world the first very-low-distortion amplifier in 1945, and the amazingly low distortion content of the first **Point One** amplifier, one-tenth of one per cent., is still an accepted world-wide standard.

Now, Leak have set a new standard with a very-low-distortion moving-coil loudspeaker system which employs a revolutionary cone of sandwich construction which weighs the same as conventional cones, but is hundreds of times stiffer and thus overcomes the major weakness of the moving-coil system—lack of diaphragm rigidity. To quote John Gilbert (*The Gramophone*): "Throughout the history of broadcasting and sound recording certain developments in loudspeakers have become milestones in sound reproduction progress . . . It was obvious that this was a new approach that might offer a solution all designers of loudspeakers have sought, a diaphragm that worked as a piston over a range of several octaves . . ." And to quote Donald Aldous and David Phillips (*Audio & Record Review*): "We gave the **Leak Sandwich** loudspeaker the full treatment. It is difficult to fault it. This design must be regarded as a breakthrough of fundamental and far-reaching importance."

The **Sandwich** loudspeakers are being demonstrated in Room 248, with the **Point One Stereo** pre-amplifier and **Stereo 20** power amplifier.

The **Stereo 20** is built to the same standards and has the same high quality performance as Leak amplifiers supplied to the B.B.C., I.T.V. and many other Commonwealth and overseas broadcasting and T.V. authorities who use them for monitoring (quality checking) the transmissions. For use in the home, the power output of 10 watts per channel is adequate. To quote John Berridge (*Hi-Fi News*) on "Selecting the equipment": "Suggestions? The Leak line comes highly recommended on two continents, the pre-amp isn't cursed with superfluous knobs, and it looks good. The mono amp would thus be the TL/12 Plus and the stereo version would be the **Point One** Stereo 20 Amplifier. Both run about 10-12 watts per speaker, and frankly, I think this is plenty. Even with that you can rattle the windows, and the reason is that this 10W is at minimum distortion, 10W sinewave power (which means that it will put out a lot more on peaks). The price of the Leak is also quite reasonable for uncompromised sound quality." The comparatively low price of Leak studio quality equipment is made possible by our being kept fully and efficiently employed by the world-wide demand which resulted from the lead we established in this field.

The above, and other Leak products, may be inspected at Booth 29.

LOCKWOOD

Booth 11
Demonstration
Room 412

Lockwood,
Lowlands Road,
Harrow, Middx.
Byron 3704

Reproducers

In addition to the well known range of **High Quality Reproducers,** for Monitoring, in Broadcasting, Television and Recording studios, etc., we shall be demonstrating the whole range of our slimmer reproducers, especially designed for high quality listening in the home.

The name given to these is **Academy,** of which there are three types, commencing with the small **Mini-Slim,** increasing in size to the medium **Minor-Slim,** the family is completed with the **Major-Slim,** which is the largest.

All are free-standing, and are supplied in a very large variety of polished or waxed veneered finishes, cabinet work is of the highest quality, and the dimensions of all models have been devised so as to take up a minimum of space in the home, but at the same time capable of giving reproduction, approaching "monitoring quality."

Academy Reproducers, are obtainable with many types and combinations of well known loudspeaker units.

LOEWE-OPTA

Booth 7
Demonstration Room 121

Loewe-Opta,
Kronach, West Germany.

Tape Recorders.

Loewe-Opta—the leading name in radio, television and tape recorders in Western Germany, bring to you the results of 35 years' experience, and the backing of 3,000 employees, in the shape of Tape Recorders and Radiograms, available for the first time in this country.

All our products are built to high engineering standards as well as being attractively styled, amongst which is our radiogram which has the following features :—

Paloma-Stereo Type 32270 T/W. Superbly finished Hi-Fi Stereo console, a masterpiece of cabinet art, housing a fabulous Loewe-Opta sound system, providing FM-HI-FI and true stereo reproduction with concert-hall realism. Six loudspeakers in two separate, perfectly matched groups for wide-band Hi-Fi or stereo sound emission. Comprising a precision-engineered AM-FM-SW radio with exclusive automatic Duplex push-button tuning, piano keyboard with 11 keys, twin-channel amplifier with stereo balance control, modern Hi-Fi Stereo, 4-speed, intermix record changer with push-button switches.

Technical features : Nine valves, two germanium diodes 6 AM+10 FM circuits, four wavebands, FM, SW, 16-50m., MW LW. Separate input circuit for wired radio or LW aerial, high-gain ferrite-antenna with switching key, FM dipole antenna, separate continuous bass and treble controls, 2 × 5 watts output power, sockets for stereophonic tape recorder and extension speakers, precious hardwood cabinet, medium dark, highly polished. Dimensions : 54in. wide, 31½in. high, 17¾in. deep.

Incorporated in the **Paloma-Stereo** radiogram will be the **Optacord 403,** which is a 2-track, 2-speed tape recorder with a flat response curve from 40 c.p.s. to 16,000 c.p.s. at 3¾ i.p.s. and up to six hours playing time at 1⅞th i.p.s., 5 watts undistorted power output from an elliptical P.M. dynamic speaker. Push-button recording input selection. Mono control for stop, pause, playback, and fast forward/reverse. Superimposition, or "trick" facilities. Auto cut-off switch acting on the metallic strip at the end of the tape. Override button for auto cut-off switch. Provision for foot control switch. Complete with microphone, tape and recording lead. Dimensions : 14½in. wide, 13¾in. deep, 7¼in. high. Approx. weight : 21 lb.

The **Optacord 414**—this is the most versatile portable tape recorder available in this country and is beautifully styled in a light metal-framed carrying case. For the first time featuring a high-frequency motor. A 2-track, single-speed transistorised tape recorder for use on internal dry batteries, motor-car battery or A.C. mains. Up to 1½ hours playing time at 3¾ i.p.s. from 4¼in. spools. Will operate in any angular position. Push-button controls for recording (locked position), playback, fast forward/reverse, pause, input selection, and stop. Rim wheel-drive controls for volume and tone. 1-watt power output.

U.K. Distributors : Highgate Acoustics, 71/73, Great Portland Street, London, W.1.

LONGACRE

Booth 22

Longacre Press Ltd.,
161-166, Fleet Street,
London, E.C.4
FLEet Street 5011

"Melody Maker" (weekly): The authoritative voice of the jazz and pop music scene in Britain.

"Electrical & Radio Trading" (weekly): the leading trade magazine for dealers of all types of electrical goods.

Melody Maker, published every Friday (6d.), is read by musicians, jazz enthusiasts and pop music fans throughout Britain and in many countries abroad.

The paper's famous hit-parade charts—published every week—list the U.K's 50 best selling pop records and the top ten LP's, EP's and jazz LP/EP's. Nearly 200 retailers from carefully chosen sales areas contribute their information to the *MM* Charts Bureau and the lists themselves are reprinted in many national and provincial papers. *Melody Maker* also sponsors a series of readers' polls to judge the year's outstanding artists and musicians who receive the coveted **EMEM** plaques and other special awards. In addition, disc jockeys and record critics from papers throughout Britain contribute to the important *MM* Press Awards of The Year Poll.

Most of the staff of *Melody Maker*—including Editor Jack Hutton—are musicians in their own right, and the paper's record reviewers and music critics are among the most influential in show business. Articles are frequently contributed by leading European and American artists.

Electrical & Radio Trading is the leading trade magazine for dealers in all types of domestic electrical, TV and radio goods and is available only to bona fide retailers and their staffs. Readers take out annual subscriptions (at £3 10s. a year) and receive copies direct from the publishers every Thursday.

The magazine, known throughout the Trade by its initials *"ERT,"* publishes all the news and views of the industry including business forecasts and details of new products reaching the market. Features cover sales and display advice, technical bulletins and weekly service charts.

Six times a year, there is a special supplement, *Hi-Fi Dealer and PA Contractor*. This covers both the sales and technical interests of the kind of retailer who visits the Audio Fair.

Numerous additional services are available free to readers—twice-yearly retail price lists of electrical goods; servicing and repairs directory; and a Guide To Values of Used Appliances. The magazine operates a Readers' Advice Bureau.

L/P RECORD LIBRARY

Press Lounge 344

The Long Playing Record Library Ltd.,
Squires Gate Station Approach,
Blackpool, Lancs

Library Catalogue

Since its inauguration in 1954, the Long Playing Record Library Ltd., has built up a nation-wide (indeed, one might say world-wide) reputation for its postal record lending library service. The Library Catalogue is completely comprehensive, and in the mono field, includes **every LP** of classical music of any merit. Since the very first stereo release the Stereo section of the Library has maintained a complete coverage and as a new venture, light music was included as well as serious issues. Poetry, plays, and the spoken word are included in both mediums.

Moderate hiring charges and the simplest possible form of permanent packing (the member has merely to reverse an address card and re-secure the outer casing—an operation taking about 45 seconds—and records are ready to return), have attracted the Library service not only to thousands of private borrowers all over the British Isles, including the Shetlands and Western Isles of Scotland, but also to universities and educational institutions of all kinds. A special **Society Subscription** enables such organisations, together with Gramophone Societies and Music Clubs (of whom over a hundred are permanent members) to reserve records in advance for specific recitals.

Besides its loaning service, the Library also operates a superior **Factory Fresh Sales Service,** enabling customers to obtain guaranteed unplayed and blemish-free copies of new records to order, such records also being **Parastated** without charge. This service is used extensively by public libraries as well as private purchasers.

During 1960, the Library extended its operations to begin the first of a planned chain of branches where members can change records personally, rather than by post. There are now four branches at :

Bradford, 10, Duke Street. Bristol, Bridge House, Baldwin Street. London, 33, Catherine Street, W.C.2. Manchester, 8, Deansgate.

It is as publisher that the LP Record Library Ltd., participates at the Audio Festival. Its selective Classical Catalogue has long been world-renowned and a new edition of this is in preparation. In 1960 the Library followed up with a publication which was an even greater success : **The Stereo Record Guide.** Beautifully produced and luxuriously bound, this book was a comprehensive review of all stereo LP's and included a section on light music. The co-authors were Edward Greenfield, Denis Stevens and Ivan March. Later in 1960, Volume I of **Stereo Record Guide** was published in America and during the year reached readers in nearly every other country (including Russia !). Volume II of **The Stereo Record Guide,** which is supplementary to Volume I, was published in 1961 and a new Volume No. III. The latest L.P.R.L. publication speaks for itself. It is the same authors' **" Guide to the Bargain Classics."**

LOWTHER

Booth 64
Demonstration Room 144

Lowther Manufacturing Co.
Lowther House, St. Mark's Road,
Bromley, Kent
Ravensbourne 5225

Electronic and Electro-Acoustic Reproducing Equipment

The Lowther Stand will display all Lowther Products, excluding Enclosures, and it will be seen that each and every article has been advanced, in either electronic technique or mechanical design, to keep this World famous range among the foremost throughout the World. Each and every modification is the result of painstaking effort towards perfection by Lowther engineers since the last London exhibition.

Drawings of the **Acousta Enclosures** may be purchased from the Stand.

Personnel at the Stand will endeavour to deal with all problems relating to Lowther equipment in preference to points being asked in the Demonstration Room.

In the Demonstration Room we are pleased to present the entire Lowther range " in sound " and, here again, extreme points of finesse which have been even more highly developed will be manifest.

It is now a well established fact that Lowther engineers are probably the foremost in the World in the development of Drive Units of very high flux density and the associated folded horns to be used in conjunction with them. The efficiency of these combined systems is of a very high order, which has made them so famous in recent years as a means of monitoring in both broadcast, television and recording studios ; the **T.P.1. Reproducer,** in particular, still ranking in the top three throughout the World.

The **Acousta Enclosure** and the **Corner Acousta Enclosure** represent the best possible performance, both in balance and definition at their price range. When used as an extension speaker to a tape recorder, it is often surprising to hear the quality which has been recorded.

We extend a cordial welcome to all music lovers and, for those unable to attend, our latest brochure will gladly be sent upon request.

LUSTRAPHONE

Booth 60
Demonstration Room 247

Lustraphone Ltd.,
St. Georges Works, Regents Park Road,
London, N.W.1
Primrose 8844

Microphones, Radio Microphones, Acoustic Equipment, Accessories

Lustraphone exhibits, which include important new items, at this year's International Audio Festival have been grouped to show the numerous Microphones, Transistor Amplifiers, Transistor Microphone Mixer Units, Matching Transformers, Floor and Table Stands as well as many convenient accessories available for : Educational Services, Public Address, Broadcasting, Recording Studios, Tape Recorder Users and Social Services. All Lustraphone products are of British design and manufacture, produced to high standards of styling, materials and performance.

The Microphones cover a very wide range and now include the entirely new **"Micridyne"** miniature ribbon microphone and stand, a transistorised radio microphone system. **"Radiomic"** (regd. trade mark), approved by the British Licensing Authorities ; also new this year is the first miniature **"Lavalier"** ribbon microphone. Then the well known **"Stereomic"** (dual head) Stereo microphones, Studio Ribbon Velocity Microphones and general purposes moving coil Microphones offer a unique selection for every Tape Recorder user who wishes to obtain the best possible reproduction from the Recorder—the music and the voice spectrum.

The model LV/59 **"Lavalier"** also enables users to record and announce with full freedom of hands and movement. Complete with adjustable positioning swivel and adjustable neck band.

Ribbon microphone model VR.64 complete on swivel and base enjoys a high degree of popularity as ever.

The **"Stereolus"** twin ribbon stereo microphone has identical performance characteristics to the "Stereomic" but without phase switching facilities resulting in a substantial difference in cost.

Lustraphone transistorised equipment includes amplifiers for the P.A. and the MU/577 Transistor Mixer Unit which permits a variety of combinations for Microphone mixing, as up to four channels can be provided for microphones, or alternatively less channels for Gram or Pick-up facilities.

There is a wide selection of Floor Stands—heavy base and folding, Table Stands of varying heights and Table Bases that allow for consideration of every requirement.

As well as the fully Mumetal Screened Matching Transformers, there are many very useful accessories such as:—

1. Flexible "Stayput" positioning tubes of various lengths.
2. Cable exit bushes and plug and socket releases enabling Microphones to be lifted from Stands, used as a Roving or Hand Microphone and just as readily replaced without interfering with any of the cable connections.

All these accessories are most valuable to orchestral and singing groups and individual recordists.

The equipment described can be seen at the Booth or in the demonstration room where descriptive leaflets are available.

LYREA

Booth 20
Demonstration Room 317

Twinsonic Ltd.,
71, Gatwick Road,
Crawley, Sussex
Crawley 26355

Sound Reproducing Equipment.

PROVERBIALLY : "Those who have quality ears to hear let them hear quality."

For this you will have come to this International Audio Festival. To provide such quality we show an assembly of :—

(1). A Twin Channel Pre-Amplifier, for Stereo or Mono—incorporating One Volume Control (but no tone Controls), and selective switching for Gramophone—tape—Radio.

(2). Two Power Amplifiers, each with Push-Pull outputs using EL84 Valves. All acceptable standards of Test and Workmanship are included.

(3). Two Power Units for the supply of Heater and H.T. voltages to 1 and 2 above and also to a V.H.F. Tuner.

(4). A V.H.F. Tuner—crystal controlled with switched tuning.
In addition we show some beautiful furniture to house these items.

(5). The internally "reeded" acoustic structure with curved vibrating walls.

(6). The Chairside Turntable cabinet and table.

(7). The Tape Deck, V.H.F. Tuner and record CABINET—hexagon shaped.

On our unique Amplifiers, Technical information will be given and questions answered at BOOTH No. 20.

For the quiet comfort of our reproduction you may come for 15 minutes to ROOM No. 317.

MORDAUNT

Booth 74
Demonstration
Room 312

Mordaunt Sound Reproducers,
32-34, Rupert Street, London, W.1
GERard 1067

Loud Speakers

From the time it was realised that loudspeaker design involved more than the use of a simple baffle mounting or Helmholz resonator, the name Norman Mordaunt has been closely associated with the design of high quality loudspeaker assembles. With the advent of stereophonic reproducers inevitable limitations of size and price were automatically made upon design and out of these terms of reference, Mordaunt Sound Reproducers produced the **Arundel**, a superb reproducer which is equally efficient used singly or in pairs. Within a well proportioned cabinet 36 in. high x 15 in. x 12 in., a specially improved assembly of bass/mid range and ribbon treble units are used to provide a loudspeaker of phenomenally good quality. This is characterised by remarkable forward presence, freedom from "colour," superb transient response and level output over the entire audio spectrum. Finished in medium walnut or mahogany the **Arundel** retails at **39 gns.** Loading is up to 12-15 watts ; input impedance 15 ohms. The assured frequency response covered by this fine assembly extends smoothly from 30 to 25,000 c/s without any pronounced dips or peaks.

Now, in a more modest price range, Mordaunt Sound Reproducers present the **Warwick,** a new conception in electrostatic-dynamic design. In this two specially developed units comprising a push-pull electrostatic high frequency speaker with superbly smooth response is used with a bass unit having identical characteristics to that used in the **Arundel.** Flux compensation keeps balanced sensitivity between both units. With cross-over network and power supply all housed in the elegantly proportioned enclosure, the **Warwick** represents outstandingly exceptional value at **29 gns.,** belonging as it must to the class of far more costly instruments.

For those requiring larger sized equipment, the **Edinburgh** is to be recommended. This comprises a matched double **Arundle assembly** in a correspondingly larger housing and is ideal for use in spacious conditions

M.S.S.

Booth 5
Demonstration
Room 234

M.S.S. Recording Co. Ltd.,
Poyle Trading Estate,
Colnbrook, Nr. Slough, Bucks.
Colnbrook 2431

Magnetic Recording Tape and Recording Heads

This year **M.S.S.** present three special features. The first is the introduction of the new range of tape boxes. Strongly constructed but elegantly designed, they still incorporate the distinctive colour coding that has been a feature of **M.S.S.** boxes for some years.

Due to new and improved methods of manufacture, all grades of Mastertape are entirely satisfactory for ¼-track recording as well as for use on ½-track machines.

The second is the new **M.S.S. ¼-track head.** Now in full production, this head has a performance comparable with any on the market.

Finally, come and hear our demonstration, "This is your Tape." Aimed at the enthusiast rather than the expert, this demonstration briefly describes the more important parts in the manufacture of magnetic recording tape and offers a guide as to how best to judge its performance. Also being shown is the unique **M.S.S. "Drop-out"** test equipment, as actually used in the production of Mastertape. Don't know how big a "drop-out" is ? Drop in to our Room and see for yourself.

MULLARD

Booth 1
Demonstration
Room 211

Mullard Ltd.,
Mullard House, Torrington Place,
London, W.C.1
LAN 6633

Valves and Semi-conductors for Audio Applications

On the Mullard Stand you can see the latest developments in valves and semi-conductors for audio applications. The Mullard staff will be pleased to discuss the applications of these products with you.

Audio Transistors

With the present range of Mullard power transistors, power outputs from 100 mW in small personal receivers and 15 watts in high power audio amplifiers can now be obtained. The power junction transistors displayed include the AD140 and OC81, the later being intended for use in pre-amplifier and driver stages of amplifiers. Pre-amplifier devices include the OC44, OC71 and AC107, the latter being a low noise transistor intended for the input stages of audio amplifiers.

Audio Valves

Among the range of audio valves displayed, two are particularly worthy of mention. They are the EC186, a high μ triode, high slope output pentode for stereophonic applications—and the EM87, a short grid-base (10V) electron beam tube for use as a recording level indicator in tape recorders.

Design Information

In addition to design information and performance figures for a wide range of Mullard audio circuits, the Mullard Technical Information Service provides, on request, full data on individual valves, transistors and specialised components for audio applications.

Various leaflets are available, and two in particular give details of Mullard publications which will be of interest to audio designers. These are " Circuits for Audio Amplifiers " and " Reference Manual of Transistor Circuits." Other leaflets available are :—

Twin Three Stereophonic Amplifier—TP 422
10 + 10W Stereophonic Amplifier—TP456
3W Tape Amplifier for Modern Tape Deck—TP421
Circuits for Audio Servicing Equipment—TP500
Circuit for Serviceman's Oscilloscope—TP 496
Semi-conductor Leaflets—2366
World Series Valves for Audio Equipment—2354
Valves and Semi-conductors for the Radio Amateur—2366.
25W Audio Output Pentode EL34

ORTOFON

Booth 4
Demonstration
Room 113

Ortofon A/S,
5, Trommesalen,
Copenhagen V, Denmark

Pick-up Cartridges, Arms, Amplifiers, Speakers and Pick-up Arm Controls.

Technical experts agree that a cartridge of the moving coil principle gives the most faithful reproduction and when **Ortofon** first introduced their famous C Monaural Head, a new standard was set. This principle has now been extended to stereo with the **Ortofon** SPU-G and SPU-G/T Cartridges with results so magnificent that they have now been called " The most highly praised cartridges in the world."

Ortofon Stereo Cartridges can be supplied with built-in Micro-transformers (SPU-G/T) or without these Micro-transformers (SPU-G)—both types being available for either stereo/mono or stereo only. Frequency response of the SPU-G/T and SPU-G ranges from 20 to 20,000 cps with channel separation better than 20-25 db.

The many high fidelity enthusiasts still preferring monaural systems can have the **Ortofon** C Cartridge, still unsurpassed as the finest of all single channel heads, with a flat frequency characteristic from 20 to 20,000 cps —even when reproducing a very high level amplitude the distortion factor of the dynamic system is less than 0.2 per cent.

The superb range of **Ortofon** Pick-up Arms cater for all possible requirements from the low-priced SKG.212 which brings **Ortofon** quality and craftsmanship to the enthusiast on a very limited budget through to the SMG.212 and the RMG.309 (16 in. arm for studio, broadcast and professional use), statically balanced for both horizonal and vertical actions.

The **Ortofon** KS.601 Stereo Amplifier has been designed for music lovers. It has two push-pull outputs each of 15 watts giving ample volume for undistorted reproduction. Five stereo inputs for tape, f/m, microphone, etc. 20-80 c/s continuously variable rumble fileter. Crosstalk figures are better than 30 db at 10 kc/s.

Ortofon Speaker systems in contemporary cabinets are designed to give outstanding quality of reproduction and details of these systems are being released in time for the Audio Fair.

NEW ! ! ! The **Ortofon Hi-Jack** is an all-metal, chromium-plated construction with a special spring-loaded friction system giving " air cushion " lowering at an adjustable speed. Easy to fit—only one 3/16th in. hole needed. The **Ortofon** Hi-Jack is the ideal pick-up arm control for safeguarding records and stylus against accidental damage.

Sole Distributors for the United Kingdom : Metro-Sound (Sales) Ltd., 19a, Buckingham Road, London, N.1. (Telephone : CLIssold 8506/7.)

PHILIPS

Philips Electrical Limited,
Century House, Shaftesbury Avenue,
London, W.C.2
GERrard 7777

Booth 10
Demonstration
Room 336

Tape Recorders and Tapes

A de luxe version of Philips most popular tape recorder, the Family machine, model **EL3541,** is making its first appearance in this country at the Audio Fair. This new version, model **EL3541/H,** has a newly designed wooden cabinet covered with PVC cloth with an attractive charcoal grey colour scheme. This new model, which is to be called the Family de Luxe, is to sell at **42 gns.**

The current range of five models is also being shown on the stand and demonstrated in the two Philips demonstration rooms upstairs. The range extends from the top selling Battery Portable machine, model **EL3585,** at **24 gns.,** to the **92 gn.** stereo recorder, model **EL3534,** which was introduced at the time of the Radio Show last August. The other three models are the Starmaker, model **EL3514,** which sells at **27 gns.,** the Family machine at **36 gns.,** and the newest model, the four-speed Hi-Fi machine, model **EL3549,** introduced in December last year at **62 gns.**

The scope of the range of Philips tape recorders, both in price and facilities offered, make them the most popular of any make on sale in this country, as at least one model is suitable for everyone from a beginner to a semi-professional. All the domestic models have been developed by the same team of research engineers who produced the **EL3566** professional machine now being used by the BBC.

Philips wide range of tape recording accessories are also being shown and demonstrated. These include the recently introduced tape splicing kit and triple play tape. Other accessories include mixing boxes, connection boxes, headphones, footswitch, the mains supply unit which converts the Battery Portable machines into a battery/mains model for **5 gns.,** and the full range of tapes in four colour coded grades and sizes ranging from 3 in. to 7 in.

Another first appearance at the Fair is the new pre-amplifier, model **EL3787,** designed specifically for the new all-transistorised mains machines. This will not be in the shops until June. This pre-amplifier allows stereo replay on the **EL3549** Hi-Fi machine and also makes possible the Duoplay and Multiplay features when used with headphones.

The Philips **AG1016** record player is being demonstrated in room 336, showing how the recorders can be used as amplifiers. This player is a low-priced Hi-Fi auto single player selling at **12 gns.**

PLANET

Planet Projects Ltd.,
Goodman Works, Belvue Road,
Northolt, Middlesex
VIKing 1775

Booth 33
Demonstration
Room 318

Tape Transport Mechanisms

Planet U.1. Tape Deck. The specification of the first quality British tape transport has been further improved. The most modern manufacturing and testing facilities in our new factory now enable us to meet the demand which discerning buyers have shown for a really high quality deck.

The design and quality control produce the lowest possible **wow and flutter:** Better than 0.8% R.M.S. at 7½ i/s., 0.12% R.M.S. at 3¾ i/s., 0.18% R.M.S. at 1⅞ i/s. Frequency response obtainable is, at 7½ i/s., 30-18,000 c/s., 3¾ i/s., 30-16,000 c/s., 1⅞ i/s., 30-9,000 c/s. Every deck passes our specifications before leaving the factory. The performance we require is higher than that of some professional decks costing very much more.

Controls are by a fully interlocked push button system; record with interlock to eliminate accidental erasure, pause with lock, fast rewind, fast wind on, and stop, manual or automatic solenoid operated by metal foil on the tape. This removes all idler and pinchwheel pressures. When operated, the leader tape does not wind off the empty reel, thus rethreading is unnecessary.

Pressure pads are not used. Adjustable stainless steel pins wrap the tape around the face of the heads, making both heads and tape last longer.

A four digit **tape position indicator** makes accuracy easy.

A four-pole changeover switch operated by the record lock-lever is provided for switching the erase circuit.

Head to amplifier **connections** are made through coaxial sockets provided on the baseplate so that the deck can be easily removed and replaced.

A variable speed magnetic **clutch** gives smooth take up and tight, even, rewind (90 seconds for 1,200 feet).

Balanced drag ensures even tape tension throughout, with wow and flutter the same at the beginning and end of the tape.

The standard machine is fitted with one triple field erase; one record; one playback, half-track high impedance Miniflux **heads.** Quarter track or half-track stereo or special heads, up to 4 in line are supplied to order. A Papst hysteresis synchronous **motor** with a 2½ lb. balanced brass flywheel, gives a speed accuracy of plus or minus .2%.

Spools up to 7 in. dia can be used.

Dimensions are: Top mask: 14 in. x 12 in. (15 in. x 12½ in. with spools). Body: 11½ in. x 10¾ in. x 2 in. below mask. Motor protudes 2¾ in.

Planet U.1 15 Tape Deck. This deck has been produced especially for those who require to record or reproduce at speeds up to 15 i/s., and gives also speeds of 7½ i/s., and 3¾ i/s., its specification is otherwise equal to the U.1.

The Tape Recorder, June 1962. "A very fine deck which shows evidence of careful design and vigorous inspection . . . . If you want the best you must be prepared to pay for it and, so far, this is the best British deck I have handled." A. Tutchings.

PYE

Booth 59
Demonstration
Room 218

Pye High-Fidelity Division,
St. Andrews Road,
Cambridge
Cambridge 58985

Amplifiers, Pre-Amplifiers, Speakers, Tuners

The **Mozart** range of amplifiers and tuners is shown. These are available in chassis form or in expanded metal cases, and a standard panel size of 10½ in. x 3⅜ in. allows the best presentation in any cabinet.

The 18-watt stereo amplifiers **Series HFS20** feature a D.C. heated pre-amplifier and a main amplifier with an output of 9 watts per channel. Frequency response is 10-50,000 cps and hum and noise is 70 db with 100K input impedance. There are five controls; push-button on/off switch, balance, treble, bass and volume controls; and a five-position selector switch. The amplifier works from 200-250 volts A.C. and costs **35 gns.** or **45 gns.** in a cabinet.

A monaural amplifier **Model HF10** has provision for tape, radio or pick-up inputs, and a new printed circuit design has made possible an undistorted output of 10 watts. There are filter, bass, treble, volume and selector controls and the panel is identical to the stereo amplifier. Chassis version: **22½ gns.** With extended metal case : **24 gns.**

An AM/FM tuner combines interference-free FM reception with additional entertainment from medium wave stations. Provision is made for stereo broadcasting reception. Size and presentation are identical to those of the FM-only tuner. The tuning range is 88-108 mc/s on FM/VHF and 200-550 metres (545 Kc/s-1.5 mc/s) AM. This tuner **Series HFT113** costs **27 gns.** or **29 gns.** with expanded metal case.

The FM-only tuner **Series HFT109** gives FM reception up to 80 miles with an outdoor aerial. Automatic frequency control gives easy tuning. Frequency response 20-20,000 cps. Chassis versions: **22½ gns.** With expanded metal case: **24½ gns.**

In addition to the **Mozart** range a completely new transistorised stereo Amplifier is shown in its final form. It is a fully transistorised stereo Amplifier which at an output of 15 + 15 watts has an harmonic distortion of less than 1 per cent. The frequency response of the main amplifier is 15 cps—35 kc/s ± 1½ dB and of the pre-amplifier better than 30 cps—20 kc/s ± 1½ dB with all functions flat. The signal to noise ratio of the main amplifier is not worse than −98 dB and of the pre-amplifier not worse than −65 dB both relative to 15 watts RMS output. The amplifier gives the improved transient response possible only with transformerless construction.

There are controls for input selection, base tone, treble tone, balance and volume together with switches for stereo-mono selection, scratch filter, rumble filter, loudness and an on/off switch with indicator light.

Attractive loudspeakers match the tuners and amplifiers in quality and reproduction. The Pye **Mozart "Minor"** has an enclosure of unique, patent-pending design housing one 12 in. speaker and a 10 in x 6 in. speaker, giving a frequency range of 50-15,000 cps. The cabinet measures 28 in. x 13⅛ in. x 10¼ in. and is finished in walnut to match other units in the range. Cost **19½ gns.**

Today's best listening is offered in the **HF158ME "Major,"** a speaker of unrivalled design and performance costing **27 gns.** This speaker measures 31 in. x 17 in. x 13¼ in. and has a frequency response of 50-15,000 cps. The refinements of modern stereo are brought together in a luxury cabinet. The **HFP7** contains the **HFS20** stereo amplifier and the AM/FM tuner **HFT113** together with a record player of transcription quality. The ensemble sells for **132 gns.** and can be used together with **HF9BS** or **HF15SME** speakers.

QUAD

Booth 49
Demonstration
Room 447

Acoustical Manufacturing Co. Ltd.,
Huntingdon,
Hunts
Huntingdon 361 & 574

Amplifiers, Tuners and Loudspeakers

The range presented by the Acoustical Manufacturing Co. Ltd., is unchanged from last year and comprises the following units :

Quad wide range electrostatic loudspeaker
Quad II power amplifier
Quad 22 mono/stereo control unit
Quad FM tuner
Quad AMII tuner—European model
Quad AMII tuner—Overseas model

Full details of these units are available from Stand 49 or direct from the factory at Huntingdon.

The Quad FM tuner may be easily converted for use with a multiplex decoder, and upon the introduction of a regular stereo broadcast service in this country such a decoder will be added to the Quad range.

Demonstrations using commercially available gramophone records as signal source, are given approximately every quarter of an hour in Room 447, while our staff at Booth 49 downstairs will be pleased to discuss any aspect of Quad from design or installation to overseas marketing.

RADFORD

Booth 30
Demonstration
Room 320

Radford Electrical Ltd.,
Ashton Vale Estate,
Bristol 3
Bristol 662361

Audio Equipment (new lines)

Amplifiers

ISTA 30 (Stereo). Output 30 watts continuous rating at less than 0.1 per cent. distortion and 40 watts continuous rating at less than 1.0 per cent. distortion, mid-band frequencies, per channel. Power response 30 watts at less than 1 per cent. distortion from 20 c/s to 15 Kc/s. Input 250mV — 4v pre-set gain, for 40 watts output. Output 4, 8, 16 ohms. Mains input 105/140v, 210/260v. 50/60c/s.

ISTA 60 (Stereo). Output 60 watts continuous rating at less than 0.1 per cent. distortion and 75 watts continuous rating at less than 1.0 per cent. distortion, mid-band frequencies, per channel. Power response 60 watts at less than 1 per cent. distortion from 20c/s to 15Kc/s. Input 250mV — 4v pre-set gain, for 75 watts output. Output 4, 8, 16 ohms. Mains input 105/140v, 210/260v. 50/60c/s.

Integrated Stereo Control/Amplifier

SC.4-20. All transistor. Output 20 watts at 0.1 per cent distortion, 25 watts at 1.0 per cent distortion per channel. Input sensitivity 5mV and 100mV Disc. 100/500mV Auxilliaries.

Gramophone Accessories

PC — Gramophone Pick-up Cartridge. Balanced 4 pole dynamic type. Response ± 2.5 db 30 c/s — 15 Kc/s. Mumetal shrouded. Output 7mV per channel at 5 cm/sec., 1 Kc/s. Choice of stylus radii. 0.0005in., 0.0007in., 0.001in. and 0.005in.

PCS — Gramophone Pick-up Cartridge in Shell. Pick-up cartridge complete in lightweight anodised aluminium shell for mounting in SME and similar type arms.

FM Tuner

FM 1 (Tuner). High sensitivity, wide band I.F.s and discriminator. Designed for high quality multiplex operation with separate multiplex unit. 98 — 108 Mc/s. Variable quieting. Self powered.

Loudspeakers

BLS — Contemporary styled of small front to back dimensions. Response 60 c/s — 13,000 c/s. Contains 13in. x 9in. flat piston type polystyrene driver, plus pressure unit. 16 ohms. 25 watt amplifier rating. Dimensions —20in. x 11½in. x 7½in. deep.

LLS — Lounge model. Contemporary styled of small front to back dimensions. Response 40 c/s — 15,000 c/s. Floor standing type. Contains 2 — 13in. x 9in. drivers, plus a high frequency pressure unit. Adjustable for 16, 8, or 4 ohms output amplifiers. 40 watt amplifier rating. Dimensions — 30in. x 24in. x 7½in. deep.

SLS — Studio model. Contemporary styled of small front to back dimensions. Response 40 c/s — 15,000 c/s. Larger floor standing type for lounge or studio use. Contains 4 — 13in. x 9in. drivers, plus 2 pressure units. Adjustable for 16, 8, or 4 ohms output amplifiers. 60 watt output amplifier rating. Dimensions—36in. x 30in. x 8in. deep.

RECORD HOUSING

Booth 51
Demonstration
Room 111

N. & S. B. Field & Co. Ltd.,
Brook Road,
London, N.22
Bowes Park 7487

For Hi-Fi Furniture and Every Kind of Record Storage

As most audio enthusiasts already know, Record Housing produce a very wide range of cabinets. In fact there are over *twenty* models, housing loudspeakers, records and equipment, all with different functions but all matching. They have been not merely designed but *developed* over the years, one model showing the way for its successor. And they are all craftsman-built, immaculately finished, and sensibly priced.

Only part of this range can be shown at the Hotel Russell : this will include the well-tried favourites, Nordyk, Capriol, Grieg, Brahms—some of them given a face-lift or an internal modification where required.

New Equipment Cabinets

There are two : the Walton (at **28 guineas**) and the Bartok (at **19 guineas**). Both are attractive in appearance and intelligently designed, with one extra feature in common : a *fixed top*. Access to the equipment is from the front, eliminating the tiresome chore of removing a variety of vases and ornaments first.

New Loudspeaker

The centrepiece of this year's demonstration will be our new "Quarterwave" Loudspeaker. Although we already have a number of successful enclosures to our credit (the Viking, Strauss and Nordyk will all be on demonstration) for our first *complete* loudspeaker we called in the distinguished consultant Ralph West. It has taken several months to reach the standard of reproduction we were aiming at, but we consider the result well worth the effort. Do pay us a visit and let us know if you agree.

RECORDS AND RECORDING

Booth 26

Hansom Books,
16, Buckingham Palace Road,
London, S.W.1
BELgravia 5346

Publishers

Records and Recording, now in its sixth year of publication, is the only illustrated magazine devoted entirely to reviewing all recorded classical music issued in Britain and giving, in addition to more than 100 extended record reviews each month, articles on the artists, music and background to recordings.

A comprehensive Audio section each month reports on new technical advances. Clement Brown and Thomas Heinitz examine the latest equipment and give frank advice on its suitability for home listening.

Visitors to the Audio Festival who visit our Booth 26 will be able to see copies of current and post issues and talk with the editor and staff of the magazine.

Feature articles in recent issues include Contemporary Music and Recordings by Igor Stravinsky; Loud-speaker problems; The Somnambulations of Amina by Harry Rosenthal; Hi-Fi Statistics; The Unfamiliar Ravel by Felix Aprahamian; What's new in Audio?; The Golden Age of La Scala by Lionel Dunlop; Audio from abroad; The Joyful Art of Elisabeth Schumann by Elisabeth Puritz; and Your Audio Problems.

Inside each issue of *Records and Recording* is a 24-page Record Guide reviewing all new classical releases at length. *Records and Recording* has the finest illustrations and the most stimulating and satisfying musical articles for the intelligent reader.

Please ask at Booth 26 for free sample back copies of *Records and Recording* (the current Audio Fair issue is on sale at 2s. 6d.) or you can write to us at: 16, Buckingham Palace Road, London, S.W.1, for a free back issue. *Records and Recording* can be obtained through any newsagent by giving a firm order for regular delivery, or a trial six months subscription is only 18s. to any address in the world.

RECORD RETAILER

Press Lounge 154

Tell Time Ltd.,
27, John Adam Street, W.C.2
WHI 6071

Publishers

Record Retailer and Music Industry News, a weekly newspaper covering every facet of the music business, has a comfortable lounge on the first floor, where all readers, trade friends—and advertisers are welcome to talk to our executives and rest Sheet music, instruments, records and record playing equipment all find a place in its up-to-the-minute news and feature service. A fully staffed readers advice and service bureau deals with queries on any of the above subjects, either by 'phone or letter.

It is available to the trade only, and the subscription is **£3 5s. 0d.** per year or **1s. 3d.** per week.

REVOX-STUDER

Booth 62
Demonstration
Room 217

Willi Studer
Althardstrasse, Regensdorf,
Zurich, Switzerland

Semi-Professional Tape Recorders and Accessories

It is barely a year since the name Revox was actively introduced to the British market. Yet in this short time the Revox has become one of the most popular semi-professional machines.

This year, in the downstairs booth, will be shown a partly dismantled standard **F36** machine. This will clearly show the main advantages; namely the Papst motors, 10 in. spools, relay control operation and an exceptionally high standard of wiring using only top quality components.

The **F36** machine is the latest in the 36 semi-professional series. The standard unit, costing only 112 guineas, operates at 3¾ or 7½ ips and is available with half or quarter track heads. A new two-in-one magic eye allows continuous monitoring of both channels when recording, and improved facilities include the ability to use both recording amplifiers to record on one channel giving simple mixing. Dubbing from one channel to the other allows superimposition. Wow and flutter are of the same high standard as the **E36,** but frequency response has been further improved with the use of new fine-gap relay heads.

Also downstairs will be shown the Revox duplicator which combines one 7½/15 ips **E36** with any number of **F36** 3¾/7½ ips slaves. For the first time professional quality copies may be made with a low capital outlay. Remote control of all machines from one master switch together with a simple indicating panel makes operation of this duplicator simplicity itself.

A prototype of the new **A60** machine will also be on display. This unit will satisfy any professional user. With the ability to take the 10½ N.A.B. spool, available in mono or stereo this machine has plug in heads and amplifiers, photo electric end of tape sensing and a timing counter graduated to read minutes and seconds.

In the room upstairs there will be repeated demonstrations of the **F36** machine working through the Revox Model 40 Amplifier and suitable speakers. This 10 watt stereo amplifier incorporates a push button pre-amp stage with treble and base control. At 48 guineas this unit, weighing only 21 lb, represents very good value for money.

Finally, Revox will be showing a four-channel fully professional machine, the **Studer C37.**

Having seen the equipment on our downstairs booth, you will certainly want to hear our demonstrations upstairs. Please come, but be patient since some people will have to wait—though only for a short while since demonstrations will be held every 20 minutes. We look forward to meeting you. Please ask any questions at our downstairs booth and if you fill out one of our cards a full range of brochures will be sent.

U.K. agents: Revox (U.K. Concessionaires) Ltd., 296, Kensington High Street, London, W.14. Telephone: Western 4343.

ROGERS

Booth 71
Demonstration
Room 149

Rogers Developments (Electronics) Ltd.,
"Rodevco Works," 4-14, Barmeston Road,
Catford, London, S.E.6

Sound Equipment

An entirely new Compact Speaker System will be introduced at this year's Fair.

The new **Rogers Cadet II** Horn-Loaded Speaker System represents the outcome of many months painstaking development aimed at producing a compact, reasonably priced speaker system, with a high standard of performance and above average efficiency.

Designed primarily as a companion unit to the exceptionally successful **Cadet II** Stereo Amplifier, the Speaker is also suitable for use with any similar amplifier and provides the complete answer to high fidelity stereo in small rooms at moderate cost.

The performance of the system is characterised by excellent transient response, clearly defined bass, extended treble response and above all a realism difficult to define, but most apparent on listening tests from live programmes. Complete absence of listening fatigue is also most marked.

The radiation characteristics of the system are particularly suited to stereo reproduction, excellent stereo being obtained over a wide area of the room. High efficiency ensures satisfactory operation from medium power amplifiers and even in large rooms an uncomfortably high volume level can be obtained from an amplifier rated at 6 watts.

Styling is simple yet elegant and the enclosure is compact enough to fit satisfactorily into the smallest rooms.

The incredibly successful **Cadet II** Stereo Amplifier and Control Unit first introduced at last year's Fair is continued unchanged but an additional Booster Unit is now available as an optional extra and enables the Control Unit to be used with low output magnetic pick-ups so further increasing the versatility of the system.

An improved Mark II version of the **Master** Stereo Control Unit is being reintroduced, salient features including: higher sensitivity, cascade input stage, provision for stereo headphones, provision for Remote Balance/Volume Unit, mixing facility and lower noise level. The Unit is now self-powered.

Demonstrations will feature the new **Cadet II** Horn-Loaded Speaker Systems and two groups of equipment will be housed in standard **Lowline** Equipment Cabinets.

The units used for demonstration and static displays are standard reproduction models in every respect and have not in any way been modified or specially prepared for exhibition purposes. This applies particularly to the standard of wiring to be seen on the equipment used for Static Display.

SCOTCH

Booth 45
Demonstration
Room 334

Minnesota Mining & Manufacturing Co. Ltd.,
3M House, Wigmore Street,
London, W.1
Hunter 5522

Magnetic Recording Tape

Featured by the Minnesota Mining & Manufacturing Co. Ltd. is the full range of **Scotch** Magnetic Tapes and Accessory Items.

The range includes three standard play tapes. **No. 111** acetate all-purpose tape enjoys a world-wide reputation for high fidelity and clarity of reproduction. **No. 311** All-Purpose has the same fine coating as **No. 111** and its P.V.C. coating, the finest available, gives additional strength and ease of handling. The third standard play tape, **No. 102,** has a tough polyster base and is manufactured to the same critical standards as a high-grade Instrumentation Tape such as **Scotch No. 499** Heavy Duty Instrumentation Tape as used in American space projects.

No. 150 is the Extra-Play Tape of the range and has a tough polyester base of similar characteristics to **No. 102.**

The fifth tape in the range is **No. 200** Double-Play, which, with its super thin yet tough polyester base, gives an improved signal to print-through ratio, excellent reproduction and double the playing time of standard tapes.

Accessory items include **No. 24** coloured leader and timing tape in five colours, **No. 51** sensing tape, tape clips and an accessory kit which includes a tape splicer.

Copies of the popular "How to do it Booklet of Tape Recording" and the **Scotch** Playing Time Calculator will also be freely available on the ground floor booth and in the 334 Demonstration Room.

SCOTT

Booth 2A

H. H. Scott Inc.,
111, Powdermill Road,
Maynard (Mass.), U.S.A.

High Fidelity components

Exhibits will include :

Scott 299C *80-watt Complete Stereo Amplifier

The most widely used, highly respected stereo amplifier made in America, delivers a full 40-watts per channel (IHFM power band rating) over the ENTIRE audio range. This magnificent amplifier incorporates ALL worth while facilities required of equipment of this type, including individual bass and treble controls for each channel.

Scott 350B Wide-Band F.M. Multiplex Stereo Tuner

Will receive the new F.M. STEREO broadcasts in addition to the regular monophonic F.M. Broadcasts. Scott's Wide-Band design assures IHFM sensitivity of 2.2 microvolts and Stereo separation that matches exacting American FCC transmission specifications.

Scott 333 AM/FM/Stereo Multiplex Tuner

This superb tuner incorporates all the features of the widely respected 350B F.M. Multiplex tuner. In addition 333 includes Scott's famous Wide-Range AM with two position bandwidth switch which makes AM listening practically indistinguishable from FM.

*Scott 299C amplifier will be demonstrated in room 122 in conjunction with the famous TANDBERG Series 6 Tape Deck.

WORLD LEADER IN AMPLIFIERS AND TUNERS

Scott has been a leading manufacturer of superb high fidelity components since 1946. During this period Scott has been responsible for the introduction of many new concepts in both the engineering and design of hi-fi equipment. Scott produced the first high fidelity amplifier (in the modern sense of the term). Scott was the first manufacturer to introduce a successful Wide-Band F.M. Tuner. Scott was first to deliver multiplex tuners that met the requirements of the FCC approved transmission system.

Many of these Scott innovations have been copied by other manufacturers. There is one thing, however, that cannot be copied. The Scott reputation for quality, integrity and leadership—a reputation hard-won by consistent attention to detail—by continual advance in engineering—by imaginative innovation—by a philosophy that states: "Purchase by customer marks a beginning—not the end." Our best salesmen are unpaid—our satisfied customers.

Sole Distributors: Elstone Electronics, Ltd., Edward Street, Templar Street, Leeds, 2. Telephone 35111.

SHERWOOD

Booth 6
Demonstration
Room 420

Sherwood Electronic Laboratories Inc.,
4,300, N. California Avenue,
Chicago 18

Amplifiers, Tuners, Stereo Receivers, Stereo Adaptors, Speaker Systems.

In July, 1961, a further step in broadcasting history was added when Radio Station WKFM, Chicago, transmitted the world's first stereo multiplex broadcast using equipment designed, constructed and installed by Sherwood Electronic Laboratories Inc. The broadcast was received throughout Chicago via Sherwood S-8000 FM/MX stereo receivers—the first such unit on the market.

Now Sherwood achieve another first by demonstrating, for the first time in England—FM stereo reception.

In room No. 420 you will be able to hear FM stereo on such equipment as—the new **Sherwood S-8000 II FM/MX 64 watt Stereo Receiver** — the new **Sherwood S-7700 AM/FM/MX 80 watt Stereo Receiver** — and America's top rated FM/MX Tuner, the **Sherwood S-3000 III.**

Also being demonstrated will be the **Sherwood S-5000 II 84 watt Integrated Stereo Amplifier** — the **Sherwood S-5500 II 64 watt Integrated Stereo Amplifier** and — the hit of the New York Audio Fair — **Sherwood's** experimental **XP-1,** a fully transistorised 200 watt FM/MX stereo receiver.

Ed Miller, General Manager of Sherwood Electronic Laboratories Inc. and Jim Blare, Sherwood's Sales Director, will be on hand to answer your questions.

Equipment used in transmitting the FM/MX signal include : Brenell s.t.p. 1 Tape Recorder, Sherwood Multiplex Generator, Marconi TF995A/5 FM Signal Generator and Marconi TF1331 Oscilliscope.

U.K. Agent : Audioson Ltd., Orchard House, Orchard Street, London, W.1. Telephone : MAYfair 5431.

SHURE

Booth 67
Demonstration
Room 418

Shure Brothers Inc.,
222, Hartrey Avenue,
Evanston, Illinois, U.S.A.

Microphones, Cartridges, Pick-ups, Tape Heads

Shure audio components are the prelude to fine sound reproduction. Pick-ups, microphones and tape heads set the standard for any system and must be carefully chosen if the capabilities of amplifiers and loud-speakers are to be exploited to the full.

The Shure range of pick-ups and cartridges is more comprehensive than that of any other manufacturer. The Shure Dynetic moving-magnet system covered by world patents combines the most faithful and distortion-free reproduction with absolute reliability and consistency. Stylus assemblies which can be replaced instantly in the home without special tools are a valuable feature. Shure range includes cartridges to match the characteristics of any arm, player unit or record changer.

For playing weights of 5-8 grammes the **Model M8D** Standard Stereo Dynetic Cartridge provides excellent performance at modest cost. With arms and units permitting a slightly lower playing weight the **Model M7D** is recommended.

Model M3D, the cartridge which set the standard for stereo reproduction throughout the world, finds particular application in professional sound systems.

Introduced at the Audio Festival in 1962, the **M77** and **M33** Series Cartridges incorporate the most advanced design features—even more simple stylus replacement, superior hum shielding, higher output, improved compliance.

The **M33-5** is the superlative cartridge for use with the finest transcription arms and is designed for tracking at pressures of ¾—1½ grammes. Alternative stylus assemblies for playing mono L.P. and 78 records may be fitted without removing the cartridge from the shell.

Mono records still attract the attention of many users and the **M5D** (L.P.) and **M6S** (78) Cartridge meet the requirement of these users admirably

Professional Transcription Arms **Model M232** and **M236** enable cartridges of any make to be used to the best advantage.

The Shure Studio Dynetic Integrated Pick-ups are the supreme result of treating design of arm and cartridge as complementary and provide unequalled performance for the connoisseur.

Shure microphones cover broadcast, recording, public address and communications grades, the range including moving-coil, ribbon, controlled magnetic, ceramic, crystal and carbon types with directional characteristics to suit any application.

U.K. Distributors: Shure Electronics Ltd., 84, Blackfriars Road, London, S.E.1. WATerloo 6361.

SIEMENS

Booth 19
Demonstration
Room 422

Siemens Norge,
Rosenkrantgaten 11,
P.O. Box 1384, Oslo

Mains Operated Transistor Stereo Recorder.

Siemens has been a name to conjure with in the professional recording field for over 10 years. They have now developed the Model 10 all transistor stereo mains-operated domestic recorder.

This new machine incorporates all the refinements one would expect from a company with such a respected name. "Plug in" amplifier panels, precision engineering in the mechanical components, cross-track trick "sound on sound" recording facility, etc., etc. Wow and flutter, frequency response and distortion figures are all very impressive and they are borne out in the excellent performance of this fine machine.

Benjamin Disraeli said something to the effect that there are three types of lies. There are lies, there are damned lies and there are Statistics. This is particularly applicable to the tape recording trade. When the final arbiter of performance is the human ear, no strings of impressive figures can do more than confirm the favourable impression caused by listening to a recording macnine.

A visit to Room 422 during the Audio Fair should prove well worth while.

The Model 10 is ideal for the discriminating Hi-Fi equipment user who cannot afford anything but the best.

The Siemens tape recorder factory is in Norway, a country already famed for producing excellent equipment. This fame will be greatly enhanced when the Model 10 becomes more widely known.

U.K. Address: Denham & Morley Limited, Denmore House, 173/5 Cleveland Street, London, W.1. Telephone: EUSton 3656-7.

S M E

Booth 37

SME Ltd.,
Steyning, Sussex, England
Steyning 2228

Precision Pick-up Arms

The **SME Precision Pick-up Arm** combines a unique standard of engineering with flexibility of use permitting the highest possible performance from any cartridge. In the comparatively short time since its introduction it has earned recognition from technical reviewers, thousands of enthusiasts throughout the world, and was one of the ten Design Centre Awards for 1962. Following a policy of continuous development we introduce this year an ultra light-weight shell. This, with its companion balance-weight, is available as an accessory to the standard Series II arm to meet the low moving-mass requirements of cartridges having a compliance of 20×10^{-6} cm/dyne and upwards. Made throughout in aluminium alloy with over 100 perforations it is by far the lightest interchangeable shell obtainable (total weight including mounting hardware approximately 6 grammes). The SME arm meets the following essentials for optimum use :—

Minimum vertical and lateral friction.

Resonances placed where they will not influence the audio range.

Longitudinal and lateral balance adjustable for a wide range of cartridges.

Good geometry so that distortion due to tracking error can be minimum.

Compensation for the natural tendency of a pick-up arm to try to move towards the centre of the record.

The arm must be quickly and easily adjustable for optimum performance with any cartridge.

In addition a built-in hydraulically damped control effects raising and lowering anywhere over the record. Different stylus positions are conveniently accommodated by moving the base on its bed plate which is graduated for easy reference.

Built throughout to instrument standards. All parts precision machined, heat treated and ground where necessary. Finished in satin chrome plate, gun black and polished stainless steel and alloy.

Model 3009—Nominal length (stylus to pivot) 9 in. **Model 3012**—Nominal length (stylus to pivot) 12 in. **Shell S.1.**—for standard phono cartridges. Low mass **Shell S.2.**—for light-weight cartridges having a compliance of 20 and upwards. **Adaptor D.2.**—For Decca heads.

SONY

Booth 73
Demonstration Room 321

Sony Corporation of Tokyo,
Tokyo, Japan

Tape Recorders, Tapes, Microphones

The Sony Corporation of Tokyo is an internationally known organisation with an unparalleled reputation of leadership in the field of electronics. Their products range from all transistor miniature radio to data recording instruments, and their world firsts include pocket transistor radio, single and two waveband, and all transistor VHF/FM radio.

From the Sony range at this Audio Festival there will be displayed :

Sony 521. The 521 is the centre of the Sony display. This has a most impressive specificatian and includes the following features :

2 and 4-track monaural/stereo record and playback. Frequency response of 30-18,000 cps at 7½ ips. Flutter and wow less than O.15 per cent. at 7½ ips. Separate channel recording level controls and indicators. Professional mixing facilities. Complete facilities for editing and cueing. Full safety and easy-to-use controls. Advanced rim drive motor principle. All accessories including two dynamic microphones.

Sony 464CS. An exciting new addition to the Sony range of Tape Recorders is the 464CS—a four-track recorder with a completely self-contained Stereo System, two extended range speakers and such additional features as sound on sound recording, push button channel selection, dual recording indicators, automatic tape lifters, digital counter, pause control and FM Stereo recording inputs. All accessories include two F7B microphones, tape, recording leads, splicing tape, etc., etc.

The Sony range of tape recorders is fully comprehensive and other instruments on display include the :

Sony 362B. A luxury, general purpose, 3-speed, high fidelity, tape recorder, with every facility of control and specification for home use. It incorporates push-button mixing, earphone monitoring, single control functioning, and a synchronous hysteresis motor for constant tape speeds.

Sony 464. This multi-purpose tape recorder permits 2/4-track monaural recording and playback, and stereo recording with playback through an extension speaker amplifier. Its facilities include mixing and parallel recording, 8 mm. synchronisation, a full technical specification, and instantaneous control.

Sony 262. A compact high quality tape recorder with the specification and features necessary for an exacting user.

Sony 101. This is a full specification small, light, and compact tape recorder which will take up to a 7 in. reel, and fulfil all the requirements of home use.

Sony 111. A truly portable tape recorder with an outstanding performance for its size, supplied complete with accessories and carrying case.

These Sony tape recorders with tape, microphones, including a condenser microphone C-37A, and speaker systems, are on display, and all visitors will be welcome either at Booth No. 73 or in Demonstration Room 321.

Sole Distributors in the U.K. : Tellux Ltd., Avenue Works, Gallows Corner, Romford, Essex. (Tel.: INGrebourne 43971.)

S.T.C.

Booth 14

Standard Telephones and Cables Ltd.,
Electro-Mechanical Division,
Edinburgh Way, Harlow, Essex
Harlow 26811

Microphones

Standard Telephone & Cables Limited, who are the leading manufacturers in the United Kingdom of studio grade microphones, will be exhibiting their complete range of instruments :

4021-J. A moving coil microphone, designed for high quality studio work and particularly suitable for acoustical measurements. Acoustic baffle available to give high frequency directional properties.

4032-G. A very robust microphone, with pressel switch fitted in the handle, used by commentators and interviewers on radio and television. An all-weather instrument with full marine and tropical protection. Windshield available.

4033-A. This model incorporates two elements, i.e., moving coil and ribbon. By means of a switch at the rear, these elements may be used separately or in combination to give a cardioid response. For stand or boom mounting.

4035-D. A fully tropical microphone for general purpose use. When fitted with the 4001-A windshield wind noise is effectively reduced by approximately 15 db.

4037-A and C. Light and unobstrusive omni-directional microphone ideal for television interview work. Can also be stand mounted. A windshield is available.

4038-A. A ribbon instrument which is accepted as one of the world's best microphones. It is widely used by the British Broadcasting Corporation and other leading broadcasting authorities. The frequency response is substantially flat from 30-15,000 c/s. It has excellent transient response and extremely low (non-linear) distortion.

4104-B and C. Noise-cancelling microphones for use by broadcast commentators where the highest quality and signal to noise ratio are required.

4105-A. A small, moving coil microphone with a cardioid characteristic. For use in high quality sound reinforcement systems where a high degree of intelligibility and a good feed back margin are required.

4106-A. A wide range cardioid microphone similar in performance to the 4033-A. Designed for broadcasting and recording use. It employs a new plastic diaphragm which is highly resistant to damage.

4108. A high quality electrostatic microphone for studio use. It has an extended frequency response and an accurately maintained cardioid directional response. A special power supply unit with connecting cable is available.

4112. A newly developed moving coil microphone designed for high quality speech reproduction of broadcasts, commentaries, announcements, etc. It is light in weight and is provided with a slim neck cord and band clip as well as a length of thin, flexible, P.V.C. insulated, screened cable.

Accessories. A range of accessories and cables for use with STC microphones will also be shown.

Cables. The cables used with STC microphones and miscellaneous audio equipment are manufactured at the Newport (Monmouthshire) factory and include such types as heavy, light and medium duty cables. There are also various miniature cables which are extensively used with systems where space is extremely limited.

STUZZI

Booth 25
Demonstration
Room 313

Stuzzi Radiotechnischer Betrieb,
28-30, Stattermayergasse, Vienna 15.
Austria

Tape Recorders and Accessories, Tuners, V.H.F. Radio, Portable Recorders.

At this year's Audio Fair, two new tape recorders join the famous range marketed by Recording Devices Ltd.—the Stuzzi 401 and the M.A.S.T.E.R. Recorder which is made by Recording Devices Ltd. for their sister company, Electronic Classrooms Ltd.

The **Stuzzi 401** is a recorder with really up-to-the-minute specifications but no frills. It is a two-speed machine (3¾ and 7½ i.p.s.) with a four-track system. Frequency range is 40-14 Kcs. Wow and flutter are approximately .15% (Papst motor). The speaker has a ceramic magnet 12,000 lines flux and is 9″ x 5″. Spool size 7″. A second pre-amplifier to play stereo tapes is built-in.

Special features of the 401 is Intertrack Transfer. A built-in, transistorised, frequency corrected unit makes it possible to listen to one track while recording on the other end and to re-record from one track to the other and mix with additional sounds through the built-in mixer.

Price complete with microphone and tape—59 guineas.

The **M.A.S.T.E.R.** is a master and student track educational recorder that offers the language student big advantages over traditional methods.

The machine operates on the 4-track principle and two tracks are in use simultaneously. The master track on the tape contains the lesson with appropriate pauses for the student's responses. The master track is not available for recording to the student. On record, the student makes his responses on the student track. He also hears his own voice through the earphones so that he is not limited to hearing his voice by bone conduction only, a very important feature in language learning. On replay, the student hears the master track and his own response simultaneously.

The student track may be erased and rerecorded but the master track cannot be erased by use of the normal recorder controls. The student can perfect his efforts by repeating his recordings as often as desired. However, a special pre-set control switch, which needs the use of a screwdriver, enables the machine to be set to record on the master track so that the machine can be used for recording the lesson.

When not required for study purposes, the **M.A.S.T.E.R.** can be used as a good quality domestic recorder and it has a built-in loudspeaker. Price, complete with tape, microphone and earphones, 42 guineas.

These new recorders, together with the **Stuzzi Magnette, Stuzzi Tricorder, Junior 4M** and **Mannequin** recorders, the **Stuzzi Tuner** and the **Minerva MA/FM Transistor Radio Tuner** will be on display at Booth 25 and will be demonstrated in Room No. 313.

CHROMASONICS

During the Fair, there will be regular demonstrations of Chromasonics in Room 313. These demonstrations of this fascinating new art form in which **Sound** is the artist will be given on Stuzzi equipment by the Technical Editor of *Amateur Tape Recording,* F. C. Judd, A.Inst.E. who is the actual creator of Chromasonics.

U.K. Distributors: Recording Devices Ltd., 44, Southern Row, Kensington, London, W.10. (LAD 4775.)

SYMPHONY

Booth 23
Demonstration
Room 213

Symphony Amplifiers Ltd.,
16, Kings College Road,
London, N.W.3
PRImrose 3314

High Fidelity Sound Equipment

Symphony No. 1 High-Fidelity Stereo Amplifier. 5 + 5 watt outputs into 15 ohms. Integrated and fully encased in black/gold cabinet. Ganged treble, middle and bass controls. Dual-concentric volume controls. Inputs for crystal or Deram cartridges, radio tuners and tape units. Tape take-off socket for recording. Valve line-up: 3x ECC83, 2x 6BW6, 1x GZ34. **Price: 24 guineas.**

Symphony No. 2 High-Fidelity Stereo Amplifier. 10 + 10 watt Push-Pull outputs into 15 ohms. Integrated and fully enclosed in black/gold cabinet. Ganged volume, treble and bass controls; Balance control and low pass filter. Inputs for crystal, Deram and Magnetic cartridges, radio tuners and tape units. Tape take-off socket for recording. Frequency response flat from 20-20,000 cycles or plus or minus 1 db. Hum and noise better than 70 db below 10 watts. Valve line-up: 2x ECC83, 4x ECC85, 4x EL84, 1x GZ34. **Price 34 guineas.**

Symphony No. 2 FM Tuner. Frequency coverage 88-100 megacycles. Sensitivity better than 2 microvolts for 20 db of quieting. Automatic frequency control. New tuning heart of advanced design. Valve line-up: ECC85, 2x EF89, EF80, EM84. Fully enclosed in black and gold cabinet measuring 12½ in. wide x 4 in. high x 4½ in. deep. **Prices** (unpowered) **16 guineas** (powered) **18 guineas.**

Symphony Bass Reflex Cabinets and Kits. Available in kit form, ready built or fully finished in walnut, mahogany or teak veneers. Special finishes to order. Basic material: Special heavy, inert acoustic board. Sizes: For 8 in. or 10 in. speakers 30 in. x 16 in. x 13½ in. For 12 in. speakers 30 in. x 17½ in. x 16 in.

Prices	Plain Kit	Plain Built	Veneered
10″	£5 7s. 6d.	£6 2s. 6d.	£11 10s. 0d.
12″	£5 17s. 6d.	£6 12s. 6d.	£12 10s. 0d.

Slim-line cabinet to Wharfedale design in veneer **£11 10s. 0d.**

Symphony Equipment Cabinet. 20 in. wide x 17 in. deep x 17 in. high. plus 12 in. legs. Motor board 19¼ in. x 15½ in. available in Walnut and Mahogany. Will take most Amplifiers, Tuners and Gram Units. **Price: £10 19s. 0d.**

Symphony Fully Automatic Recorder, enables the setting up in advance for recording of radio programmes in operator's absence. Incorporates Stuzzi 3-speed tape unit, clock-type time switch and warming up delay timer. **Price: 75 guineas.**

Symphony Tape Timer Units. Incorporates the time control mechanisms of the Automatic Recorder housed separately in handsome shelf-cabinet. **Price:** Model A **10 guineas.** Model B **15 guineas.**

TANDBERG

Booth 2
Demonstration
Room 122

Tandbergs Radiofabrikk A/S,
Kjelsasveien 16, Oslo, Norway

Tape Recorders and Language Laboratory Equipment

The name **Tandberg** commands respect throughout the entire world of tape recording. Fourteen years ago when the first Tandberg Tape Recorder appeared it was immediately recognised to be an outstanding example of mechanical and electronic engineering. Although primarily designed for domestic use its outstanding merit quickly made it popular with most Scandinavian countries for government departments, armed forces, post offices, industry, education, etc.

It is unlikely that any tape recorder manufacturer has a larger, more forward-looking, experienced team of clever design engineers. In 1961/2 a new nine-storey research and development building, costing £500,000, was built adjoining the main Oslo factory.

With the advent of " Stereo " Tandberg took a major step forward, being one of the first to recognise the potentialities of this new development. The original **Tandberg Model 3 Stereo** made a big impression and firmly established **Tandberg** as a top name with American, and later British, High Fidelity enthusiasts. Most of these machines continue to give excellent service to-day, after many years of continuous use.

Stereo models 4 and 5 followed, achieving a standard of four-track performance never previously thought possible with a domestic tape recorder; as a result Tandberg began to be asked for a really fine 4-track deck specially for use in high-quality Hi-Fi installations. The world-famous **Tandberg Series 6** was produced to meet the demand of this most critical and fastidious market.

In the United States and Great Britain **Tandberg 64** (4-track) was immediately recognised as a "world-beater," but Hi-Fi enthusiasts in other countries quickly followed. To-day the Tandberg factory is sold out for many months ahead supplying the demands of Tandberg distributors in U.S.A., Norway, Sweden, Great Britain, France, Germany, Switzerland, South America, Canada, Denmark, Finland, Holland, Iceland, Belgium, Italy, Spain, Greece, South Africa, Australia, New Zealand, Hong Kong, Singapore, Lebanon, Syria, Jordan, Iraq, Thailand, Japan.

At our special request, to cater for 2-track preferences, Tandberg recently produced **Tandberg Model 62.** This version of Series 6 is normally only available in the U.K.

In the autumn of 1962 **Tandberg Series 7** was released with 4-track and 2-track models. Due to its unusual versatility, complete stereo facilities, portability, and the usual Tandberg quality, Series 7 rapidly proceeded to outsell its famous companion. Note :— Series 7 is additional to, and does not supersede, Series 6.

We are exhibiting and demonstrating **Tandberg Series 6** and **Tandberg Series 7,** also world premiere of **Tandberg Electronic Teaching Systems.**

Sole distributors: Elstone Electronics, Ltd., Edward Street, Templar Street, Leeds 2. Phone 35111.

TANNOY

Booth 16
Demonstration
Room 349

Tannoy Products Ltd.,
West Norwood,
London, S.E.27
GIPsy Hill 1131

High Fidelity Systems

For more than 30 years the Tannoy Organisation has been one of the few offering a complete range of High Quality Audio Equipment for domestic and professional use. The policy of perfection, rather than price consideration, remains unaltered and, as always, all products are designed and manufactured entirely within the Tannoy Group, thus enabling the most stringent quality control to be exercised at all times.

The **Tannoy** 12in., 15 in. and **IIILZ Monitor Dual Concentrics:** These dual systems continue to set the standard for high-quality loudspeakers. The adoption of these units as listening standards by broadcasting, television, and recording companies throughout the world, is an indication of their supremacy.

Tannoy Loudspeaker Enclosures. The Guy R. Fountain Autograph provides both front and rear horn loading for the 15 in. Dual Concentric unit. It makes use of the exclusive Tannoy expanding source principle and gives reproduction of the highest quality where space is not an important consideration.

The G.R.F. Enclosure has many of the advantages of the Autograph, but is of smaller size, thus increasing its appeal. This enclosure provides horn loading and is fitted with a 15 in. Dual Concentric, being used by many leading British record manufacturers and television companies as a quality standard.

The introduction last year of a rectangular free-standing version still further increased the versatility of this unit.

The York and Canterbury are dual ported, bass reflex, enclosures, of simple design, suitable for home construction and give excellent results.

The Chatworth Enclosure is a critically damped infinite baffle, suitable for either 12 in. Monitor or the IIILZ Monitor, it is available as a corner cabinet or a rectangular free-standing cabinet.

The IIILZ Enclosure is designed specifically for the IIILZ Monitor Unit. It is sufficiently small to be placed on a shelf or small table, but nevertheless, provides outstanding reproduction over the entire audio frequency range, extending to well below 40 cycles in the bass.

The Tannoy Variluctance Mono Cartridge, Mark II, is well established as a standard with many companies manufacturing television and broadcasting studio equipment, and is selected for use in quantity by the B.B.C.

The Tannoy Vari-Twin Stero Cartridge, Mark II, is designed for the reproduction of stereophonic records in conjunction with equipment of the highest grade. The frequency response extends beyond 16 K/cs and channel separation is in excess of 20 db.

The Tannoy Range of High Quality Microphones. The new " Slendalyne " range of Microphones was exhibited for the first time in prototype form last year, and the " Slendalyne " velocity ribbon Microphone is now in production. This Microphone has an extremely level frequency response, between 25 and 14,000 c.p.s. and a complete absence of peaks and uncontrolled resonances. The acoustically designed case gives a clearly defined bi-directional response which is particularly useful when dealing with difficult reverberant conditions.

TAPE RECORDING MAGAZINE

Press Lounge 153

Print & Press Services Ltd.,
7, Tudor Street,
London, E.C.4
FLE 1455

Publishers

Tape Recording Magazine was established at the beginning of 1957 and is thus the oldest British magazine dealing exclusively with tape recording. It deals in popular fashion and very fully with all aspects of amateur recording activity. It is edited by Douglas Brown, for several years the compere of the B.B.C. "Sound" programme, and its regular contributors include such distinguished audio experts as James Moir, John Borwick, Alec Nisbett and H. Burrell Hadden.

The magazine sponsors the British Amateur Tape Recording Contest in association with the Federation of British Tape Recording Clubs and maintains close contact with the club movement in this country and abroad.

Its associated publications include *Tape Recording Yearbook* and a series of popularly-priced *Tape Recording Handbooks.*

Tape Recording Magazine gives a very full coverage and yet is the only magazine of its type selling for only 1s. 6d.

TELEFUNKEN

Booth 58
Demonstration Room 314

Telefunken G. M. B. H.,
Hanover Linden, Göttinger Chaussee 76,
West Germany

Tape Recorders

Telefunken tape equipment is first choice with major European radio stations. It should be, because **Telefunken** have more than a quarter century research experience behind their name. Experience built into every machine. Select the recorder that suits your requirements—there are nine models for the enthusiastic beginner or the studio professional all full of exclusive features and great **Telefunken** quality. Each is fine on its own, or coupled with your Stereo or Hi-Fi equipment, to produce an integrated recording system. You will find **Telefunken** has sound quality taped!

New Magnetophon 85 De Luxe. New look, new magic-eye recording level indicator, new mixing facilities. Two speeds—7½ and 3¾ i.p.s. Frequency response 40-18,000 c.p.s. ± 3dB; 40-16,000 c.p.s.; DC heated pre-amp valves. **83 Gns.** (excluding microphone).

New Magnetophon 98 Stereo. Twin-track stereo; ideal for the recording enthusiast requiring high-quality trick facilities. **95 Gns.** (excluding microphone).

Magnetophon 97 Stereo. Four-track stereo or monaural recording and playback. Additional speaker in lid for stereo playback. **95 Gns.** (excluding microphone).

Magnetophone 96. Four-track plus full controls for trick recording, superimposing, intertrack transcription. Frequency response 30-18,000 (7½ i.p.s.); 30-16,000 (3¾ i.p.s.); 30-9,000 (1⅞ i.p.s.). **69 Gns.** (excluding microphone).

Magnetophon 95. Twin-track, 3-speed. Frequency response as Magnetophon 96. Easy operation. **59 Gns.** (excluding microphone).

Magnetophon 75K-15. Six-hour playing time on 5¾ in. double-play tape. There is a wide range of accessories for this 2-track, 2-speed machine. **50 Gns.** (excluding microphone).

Magnetophon Automatic. Brilliant design eliminates most controls to make this a truly automatic machine. Marvel at it in operation. **50 Gns.** (excluding microphone).

And now, for high performance, top fidelity recording **Telefunken** introduce **Magnetophon M26KL and Magnetophon M24KL.** These two machines bridge the gap between home and studio quality tape recorders. Extremely low wow and flutter on all speeds! The machines are identical in appearance, differing only in speeds. Both machines have separate record and play-back amplifiers. **M26KL 246 Gns. M24KL 209 Gns.** (excluding microphone).

Full details and new **Telefunken** brochure are available from **U.K. Agent: Welmec Corporation Limited, 147/148, Strand, London, W.C.2; TEM 3357.**

TEPPAZ

Booth 50
Demonstration
Room 322

Teppaz S.A.,
170, Boulevard de la Croik Russe.
Lyon, France.

Sound Reproduction Equipment

Oscar Stereo

Full stereo portable record player mains operated; 4-speed turntable; double amplifiers; 3 watts output each channel; 7 in. speaker and tweeter in each detachable "Spatio Dynamic" baffle lid.

Oscar Record Player

Mains operated; 4-speed turntable; 3 watts output; valves; 2 (UCL82, UY85); bass and treble controls; 7 in. "Spatio Dynamic" speaker in detachable lid. Size 13½ in. x 11 in. x 6¼ in. Weight, 10 lb. Finish: Grey or Beige leatherette.

Presence Record Player

Mains operated; 4-speed turntable; 3 watts output; valves: 3 (EBF80, EL84, EZ80); bass and treble controls; 7 in. "Spatio Dynamic" speaker in detachable lid. Size 14 in. x 11 in. x 6¼ in. Weight, 11 lb. Finish: Pigskin, Parchment, Black or Green.

Octave Record Player

Mains operated; 4-speed turntable; 4 watts output; valves 3 (EF86, EL84, EZ80); independent bass and treble controls; 2-7 in. "Spatio Dynamic" speakers in detachable lid; coaxial socket for stereo operation. Fitted with stereo pick-up. Size: 13 in. x 10 in. x 6 in. Weight: 13 lb. Finish: Pigskin, Grey, Tweed or Blue leatherette.

448 Stereo Record Player

The complete portable stereo record producer; 4-speed turntable; double push pull amplifier; 6 watts output each channel; valves 6 (4 x ECL82, 2 x EF86); independent bass and treble controls and balance control; 2-7 in. speakers and a tweeter in each detachable "Spatio Dynamic" baffle lid. Size: 18¼ in. x 13 in. x 10 in. Weight: 22 lb. Finish: Pigskin or Blue.

Also ECO turntable units for mains, battery and stereo, and high fidelity amplifiers and speaker cabinets.

THORENS

Booth 4A

Thorens S.A.,
Ste-Croix, Switzerland

Transcription Motors, Turntables, Units and Pick-up Arms

When it first appeared, the **Thorens** TD.124 was called by the *Hi-Fi News* "Rolls-Royce amongst transcription turntables" and since that time it has continued to gather world acclaim. This includes general comments such as that made in one technical publication "The total noise level of the **Thorens** TD.124 is lower than the recorded noise level of the majority of records" as well as the more specific quotation of figures in a National Broadcasting Corporation test laboratory report "Speed regularity equals 0.1 per cent. peak to peak for 33⅓, 45 and 78 rpm. Rumble level—62db." The **Thorens** TD.124 has many features found together in no other Transcription Turntable, these include the Inertia-controlled Drive system with two-step speed reduction. The Turntable is available with either the Standard Cast Iron Flywheel or the new Heavy Non-Ferrous Flywheel—whilst such Moving Coil Cartridges as **Ortofon** can be used with the cast iron flywheel, other cartridges of the Magnetic and Moving Iron type are better employed with the Non-Ferrous flywheel.

In the past few months, **Thorens** have introduced with tremendous success their new TD.135 Transcription Unit incorporating the new Professional Tone Arm BTD-12S. The TD.135, described by Mr. Percy Wilson, M.A., in *The Gramophone* as "a lovely Turntable," makes it possible for all High Fidelity enthusiasts to have the satisfaction of a **Thorens** unit and arm at a price everyone can afford. The **Thorens** TD.135 possesses many of the features which have helped to make the TD.124 supreme in this field but above all, it has the **Thorens** hallmark of quality acknowledged through the world. In reviewing this unit, the *Hi-Fi News* stated "flutter was measured consistent at 0.02-0.03 per cent., wow at 0.05-0.06 per cent. and total 0.06-0.07 per cent. This is a figure most tape machine manufacturers would sell their souls for!"

The BTD-12S Arm is also available separately and is of the highest professional quality. It has been specially adapted to take cartridges of the highest lateral and vertical compliance therefore the lowest possible inertia in both the horizontal and vertical planes has been the primary objective. Precision ball bearings throughout, simultaneous longitudinal and lateral balance and an integrated Raise/Lower control are just a few of its many features.

Transcription Units based on the TD.124 and TD.135 incorporating **Ortofon** Pick-Up Arms and Cartridges are also available. These composite units have been costed to show a price reduction to the consumer.

Distributors throughout the United Kingdom: Metro-Sound (Sales) Ltd., 19a, Buckingham Road, London, N.1. (Tel.: CLIssold 8506/7.)

TRIO

Booth 8A
Demonstration
Room 120

TRIO Corporation,
74, Chidori-Cho, Chofu, Ohta-Ku,
Tokyo

Hi-Fi and Stereo Equipment

The main feature of this display will be devoted to the **TRIO** range of FM, FM/AM-AM Tuners, Tuner Amplifiers and Professional/Amateur Communications Receivers. The following brief descriptions will indicate the wide field of interests catered for in this attractive equipment.

TRIO Model AF 270 FM/AM-AM Stereo Tuner. Simplicity, flexibility and superb styling have been carefully integrated in this quality instrument. Will receive the simultaneous FM-AM stereophonic broadcasts or may also be employed for FM or AM reception separately. Multiplex output included for the new stereo FM. Separate AM/FM flywheel tuning, Foster-Seeley discriminator with AFC and AFC defeat, AM whistle filter and two tuning meters. Tuning range : FM, 80—108 Mc ; AM, 535—1,605 Kc. Retail price **£43 18s. 11d. plus £7 10s. 1d. tax (49 gns.).**

TRIO Model FM-105 High Fidelity FM Tuner. Armstrong circuit with Dual Limiters and Foster-Seeley Discriminator. Low Noise Front End with tuned triode grounded grid amplifier and triode mixer. Transformer operated power supply with full wave rectification. Tuner Meter for quick and accurate tuning. Sufficient signal voltage to operate a conventional amplifier. Provision for connection with an FM multiple adapter. Tuning range : 80—108 Mc. Retail price **£27 17s. 4d. plus £4 13s. 8d. tax (31 gns.).**

TRIO Model W-38 High Fidelity Tuner Amplifier. A general purpose stereo amplifier for disc playback, and all types of broadcast reception such as AM-AM stereo, FM, SW, and, if an FM multiplex adapter used additionally, FM multiplex stereo. Audio Output of 14 watts per channel or 28 watts total. Hum eliminated by Direct Current Filament Heating System in the equaliser circuit. Rumble Filter eliminates low level disturbance. Magic eyes. Foster-Seeley FM Detector brings you stable and superb high fidelity reception. Retail price **£71 6s. 3d. plus £12 3s. 3d. tax (79 gns.).**

TRIO Model W-10 Tuner Amplifier. Provides all the advanced features found in only the most expensive home type stereo amplifiers. Covers FM, AM and SW BC bands. Input terminal for connection with radio for AM-AM stereo programmes. As a stereo amplifier 7 watts in each channel, or a monaural dual channel amplifier with 14 watts in total. Bass and Treble controls. Provision for connection with FM multiplex adapter. Retail price **£47 10s. 9d. plus £8 2s. 3d. tax (53 gns.).**

U.K. Distributors : Winter Trading Co. Ltd., 95-99, Ladbroke Grove, London, W.11. (Park 1341.)

TRUVOX

Booth 61
Demonstration
Room 304

Truvox Ltd.,
Neasden Lane,
London, N.W.10
DOLlis Hill 8011

Tape Recorders.

"SERIES 80." The Truvox display this year incorporates considerable improvements: the basic "Series 80" deck has become a leader in its field as the most modern, rugged and efficient deck on the market. There are now three speeds ($7\frac{1}{2}$, $3\frac{3}{4}$ and $1\frac{7}{8}$ inches per second), an outside rotor Papst capstan drive motor, more powerful wind motors by Garrard, an entirely new switch mechanism and revised pressure pads. The stout and simple construction of this deck, the core of the whole series, offers superlative performance and outstanding reliability.

Truvox have become known as "the tape unit people" and not without justification. We were the first manufacturers to market this type of apparatus successfully. Since last year's Audio Fair, when all six models were shown, our production has been sold well in advance, and we apologise in particular to PD86 and PD87 customers many of whom have waited for months in spite of our greatly increased manufacturing facilities.

Our Recorders, models R82 and R84 have commanded substantial sales. With the new deck incorporated, they provide even more attractive value. Their ruggedness and superior performance have commended them to most Education Authorities in this country, and countless customers abroad.

Price List.

R82	.....	55 gns.		PD88	.....	£48	10	0d.
R84	.....	59 gns.		PD85	.....	£52	10	0d.
PD82	.....	£42	0 0d.	PD86	.....	£63	0	0d.
PD84	.....	£46	0 0d.	PD87	.....	£63	0	0d.

Deck prices on application.

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Winding Time: 60 secs. for 1,200 ft. reel.
Autostop, Superimposition, Pause Control, Numerical Counter, Mixing facilities, 4 watt output (recorder only).
For further details please obtain our leaflet.

VITAVOX

Booth 35
Demonstration
Room 115

Vitavox Ltd.
Westmorland Road,
London, N.W.9
COLindale 8671

Loudspeaker and Microphones

A display representative of Vitavox products is being shown on Booth No. 35, with a member of our staff in attendance to answer questions and supply literature.

The range of our equipment can be more fully appreciated by a visit to Room 115, on the first floor, where the aim is to show high fidelity in its widest applications, which satisfy the most stringent requirements of the Services, industry, and entertainment in the home. Scale models of a dual channel loudspeaker system, as used in a cinema installation, and the world-famous **Klipschorn Reproducer** are of a special interest, but whatever your own individual needs, our technical staff are at hand to help and advise you and, on request, demonstrate the **Vitavox DU120** loudspeaker in a recommended type of enclosure.

VORTEXION

Booth 27
Demonstration
Room 342

Vortexion Ltd.,
257/263, The Broadway, Wimbledon,
London, S.W.19
LIB 2814

Audio Equipment

The Vortexion C.B.L. Recorder has had many detail improvements and additions using the latest stereo deck, "B" type monitoring after record facilities with mixing of inputs on each channel and over 6 watts total output. All the usual features of the "B" recorder are retained including metering of bias and signal plus the ability to record the signal from one track to the other together with additional signal from the mixed inputs. The separate 30/50 ohm balanced line microphone inputs allow for the microphones to be placed at any distance apart according to the result required. The right hand channel may be switched off entirely when only single channel working is desired.

The Vortexion "B" Recorder is noted for its very high audible quality and professional standards. The microphone input can have over a quarter mile of ordinary twin flex for outdoor use and will load from normal voice at a distance of 20 feet being of 30/50 ohms balanced line needing only 8 micro-volts. The Radio input can accept any signal from 17 m.v. to 10 volts on .5 megohm. Monitoring after record facilities are provided with A-B switch for comparing the before and after quality whilst recording and the erase head may be switched out, the bias reset and monitored on the meter for superimposing and adding echoes, etc. The handbook contains the accurate meter bias settings for various makes of tape and 3½ watts of power heavily damped by negative feedback on 15 ohms is available.

The W.V.A. Recorder is similar except for the "B" type monitoring.

Electronic Mixers. A variety of mixers are available, 3-channel with accurate within ldb Peak Programme Meter, 4 channel, 12 channel and 2 x 5-channel Stereo. All feature long life without attention tropical controls, built in screened supplies, balanced line mic. inputs and .5 volt or alternative 1 m.w. 600 ohm balanced unbalanced or floating outputs. A version is available which has recording erase and bias, play back and echo facilities with metering of bias and signal.

WAVERLEY RECORDS

Booth 3

Geo. Jeffrey Ltd.,
23, Earl Grey Street,
Edinburgh 3
FOU 8389

Gramophone Records.

Waverley Records continue in their policy of producing recordings of Scottish material with International appeal.

With the opening of their new recording studios last summer, they have all the added facilities of modern recording techniques so essential for high quality results.

Top sellers in the Waverley catalogue continue to be the exclusive recordings of the now famous "Edinburgh Military Tattoo" (this year will see the 5th recording of this event), the Scottish Country Dance Series (also in its 5th volume), the popular album of Scottish Songs sung by Dennis Clancy, and the EPs of Rory and Alex McEwen, the folk-singing brothers of BBC "To-night" fame.

Important recent releases include the first LP album to be recorded by The Scottish National Orchestra under its brilliant young conductor Alexander Gibson. This notable release includes the first recorded performance of Iain Hamilton's Scottish Dances, and the first Western recording of Shostakovich's "Festival Overture" — a work which was premiered in this country by the S.N.O.

The spoken word has not been overlooked in Waverley issues, the two most important being "The Poetry of Hugh McDiarmid" — an album released to commemorate the 70th birthday of this famous and controversial poet—and "The Bible in Scots"—a record devoted to exerpts from The Holy Bible, translated and read in true Scots dialect by Rev. James L. Dow.

There is a wealth of wonderful recording material to be found in Scotland, and it is the business and the duty of Waverley Records to seek it out and present it to you, the public.

WHARFEDALE

Booth 70
Demonstration
Room 147

Wharfedale Wireless Works Ltd.,
Idle, Bradford, Yorkshire
Idle 1235/6

Loudspeakers.

Of the many improvements which have been made to our range of loudspeakers over the past year, one of the most notable has been our Super 8/RS/DD model. With the new ceramic high flux magnet, an aluminium speech coil and using the well proved roll surround suspension, this loudspeaker with its special tweeter diaphragm gives an exceptionally well balanced performance over the whole frequency range. Results from a single Super 8/RS/DD in the 9 cubic ft. corner enclosure are nothing short of phenomenal, yet on the other hand it is a unit capable of a first class performance in an enclosure only 1 cubic ft. in volume. The Super 8 takes its place along with the Super 10 and Super 12 (all with roll surround and double diaphragm) to give a worthy selection of high-performance full range loudspeakers.

Another development has been the fitting of polystyrene diaphragms to all our 12 in. bass speakers, which give a much cleaner response at lower frequencies, and also enable such units to be effectively used in small enclosures. A good example is the Slimline 2, introduced last year, which is fitted with just such a bass speaker. This model has been very well received, both in this country and abroad, giving as it does an excellent clean performance at the expense of very little space.

Wharfedale cabinet models can be heard in our demonstration room No. 147. A comprehensive range of our products is also on show at our Booth No. 70.

WHITELEY

Booth 42
Demonstration Room 415

Whiteley Electrical Radio Co. Ltd.,
Victoria Street, Mansfield, Notts.
Mansfield 1762/5

Loudspeakers, V.H.F. Tuners, Amplifiers and Ready-to-assemble Cabinets

The wide range of Whiteley High Fidelity products comprises loudspeaker units, enclosures and matching equipment cabinets, stereophonic and single-channel amplifiers and radio tuners. The whole range of sound-reproducing equipment is thus manufactured within the Whiteley organisation and close control is exercised at every stage of manufacture.

Stentorian Loudspeakers

The range of loudspeakers varies in size from 1¾ in. in diameter up to 18 in. in diameter and these units are available with a variety of cone construction, speech coil impedance and magnet strength to suit all requirements. The universal speech coil is fitted on the 8 and 10 in. units and this feature is of great value in providing satisfactory matching to most systems.

The H.F. 1216 and H.F. 1016 Major Loudspeaker units have suspension systems which enable them to be used in the more compact type of cabinet. This enables reproduction of the highest quality to be obtained in a relative limited space and designs of cabinet will be on display and demonstration.

Ready-to-Assemble Cabinets

A range of acoustically designed enclosures suitable for use with various types of loudspeaker will be on display and a selection of items will be demonstrated. These "break-down" cabinets are of bass reflex design and can be assembled with the aid of a screwdriver. The finishes are in Sapele Mahogany or Walnut Veneer and the completed items form an attractive piece of furniture.

The Clumber Compact Loudspeaker system is available as a loudspeaker complete in cabinet and is extremely suitable for stereophonic use as well as forming an ideal book-shelf type unit for the small, high-quality system.

Amplifiers and Tuners

The Whiteley range of amplifiers and complementary tuners has been redesigned for present-day needs. The heart of the system is the improved W.B. 12 Amplifier having the same high standard of performance. A Control Unit with facilities for stereophonic and single-channel reproduction enables either tape, gramophone or radio inputs to be coupled to the main amplifier system. This control unit is suitable for all types of magnetic and crystal pick-up and has a comprehensive system of tone compensation and built-in filters.

To cater for the potential requirements of stereophonic radio reception, a switched V.H.F. tuner has been designed giving instant choice of Third, Home or Light programme. The tuner incorporates comprehensive A.F.C. system ensuring that the station selected is always accurately tuned and an output is available for multiplex stereo.

To cater for users requiring a less complex system, a redesigned integrated 8 watt amplifier is available. This amplifier can be used with most types of crystal pick-up and will accept radio and tape input and conform the basis of a high-quality single-channel system.

Our equipment will be on display at Booth 42 and continuous demonstrations by our engineering staff will be given throughout the Exhibition in Demonstration Room 415.

WILLIMAN EXPORT

Trade Lounge 246

K. H. Williman & Co., Ltd.
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ZONATAPE — Booth 56

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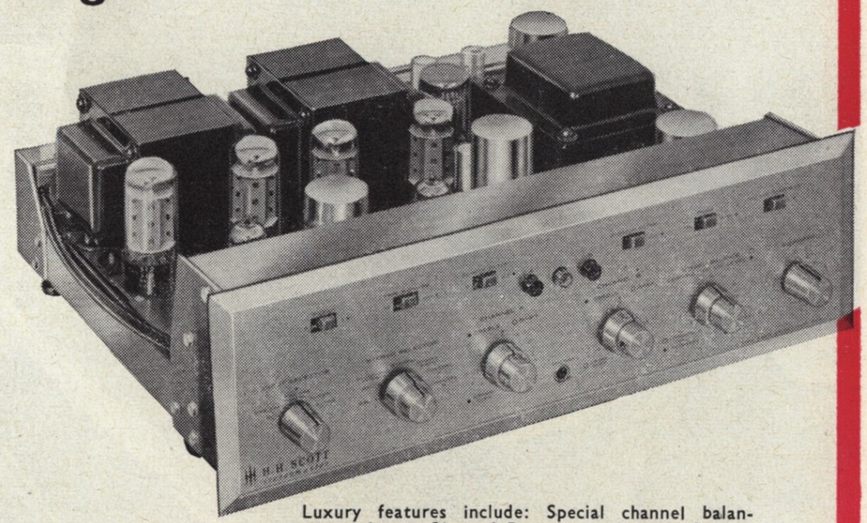
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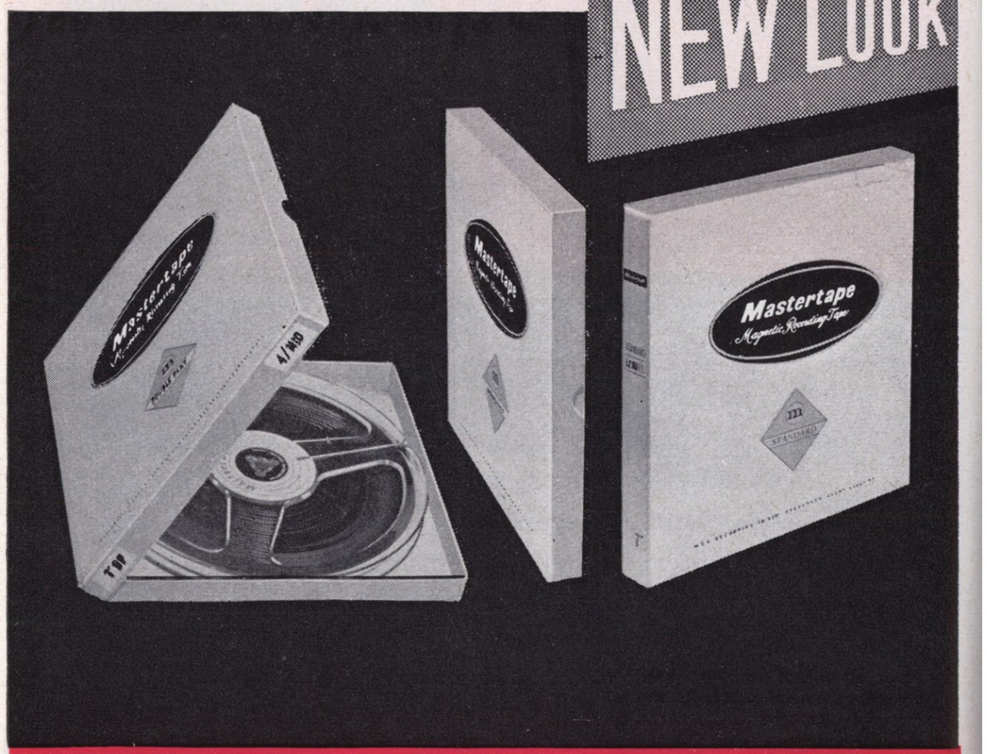
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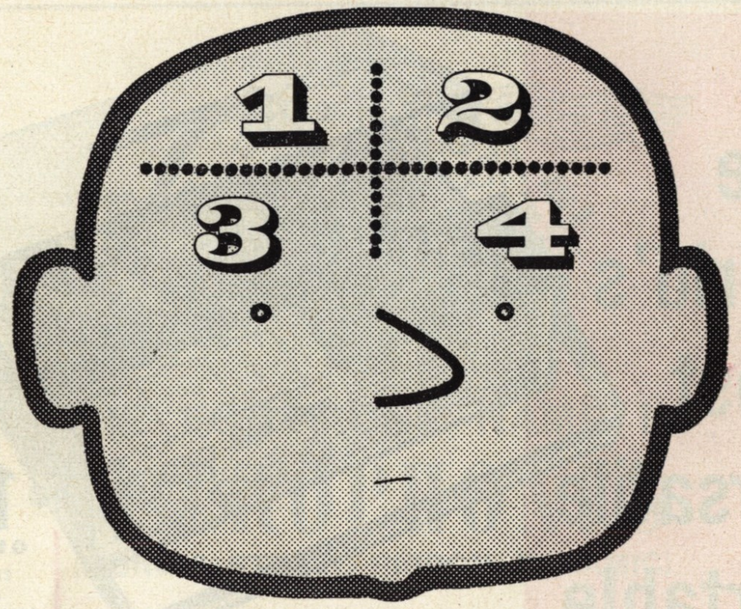
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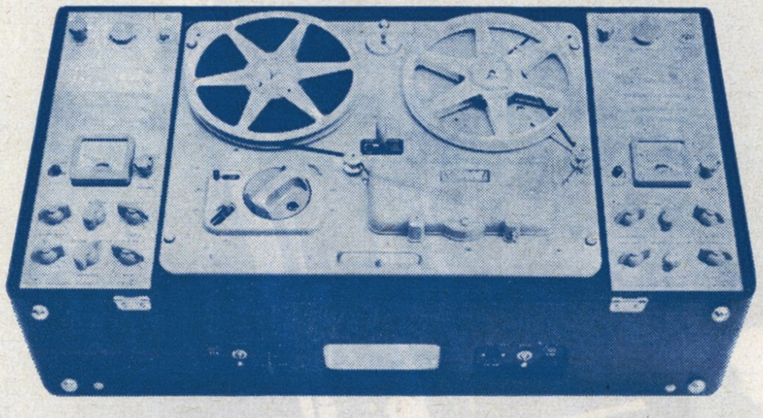
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Additional details on Page 131.

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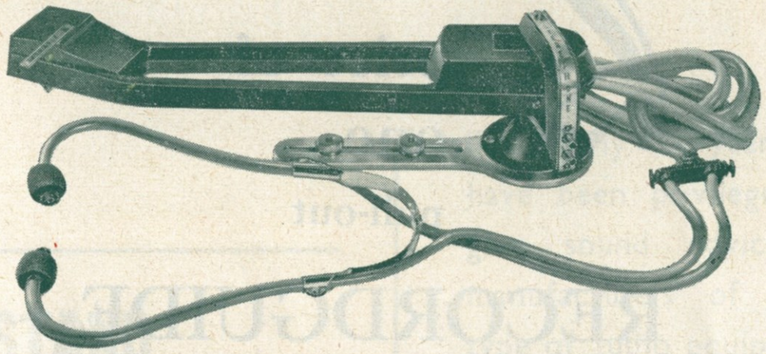
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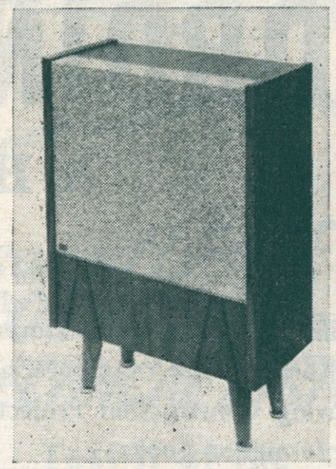
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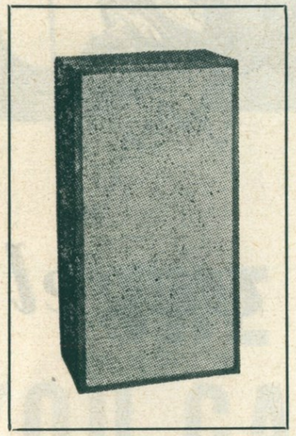


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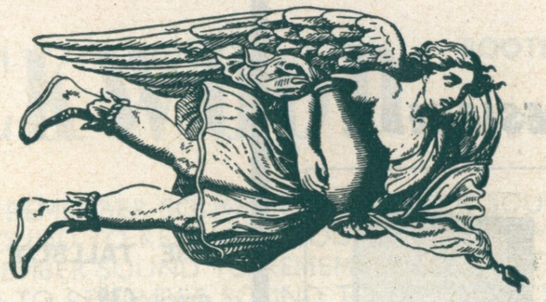
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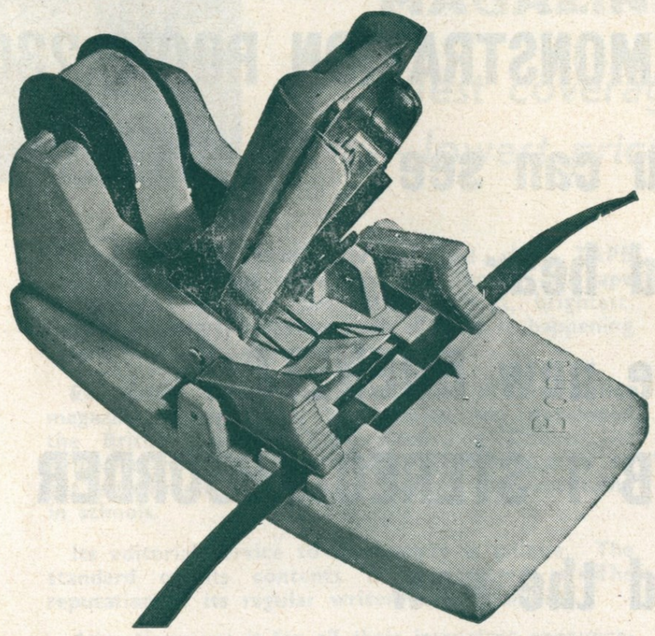
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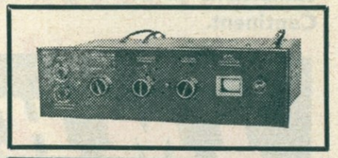
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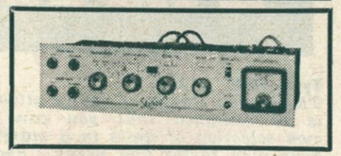
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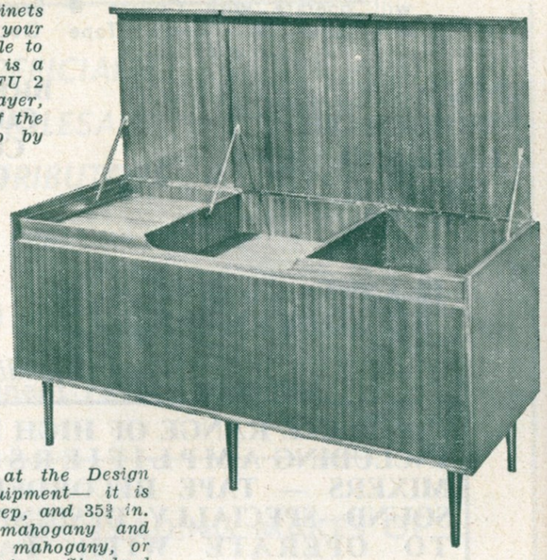


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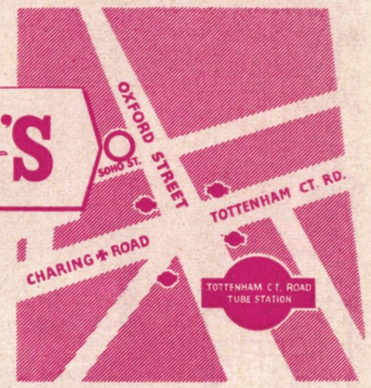
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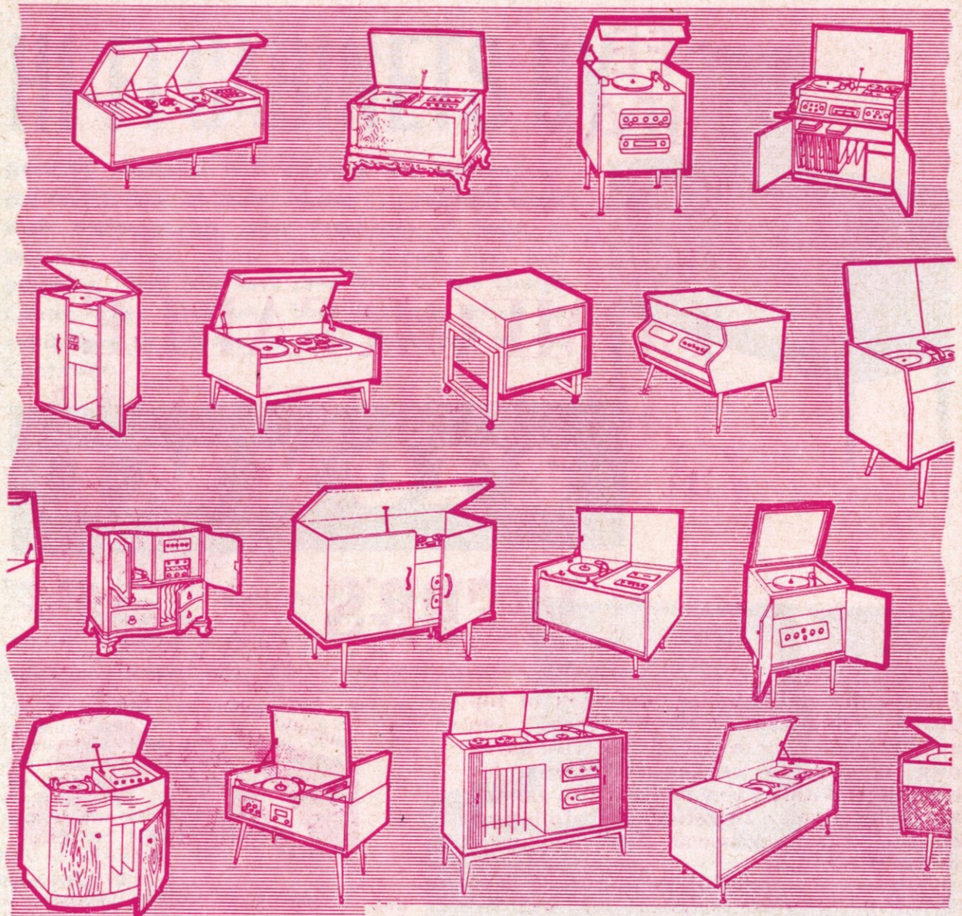
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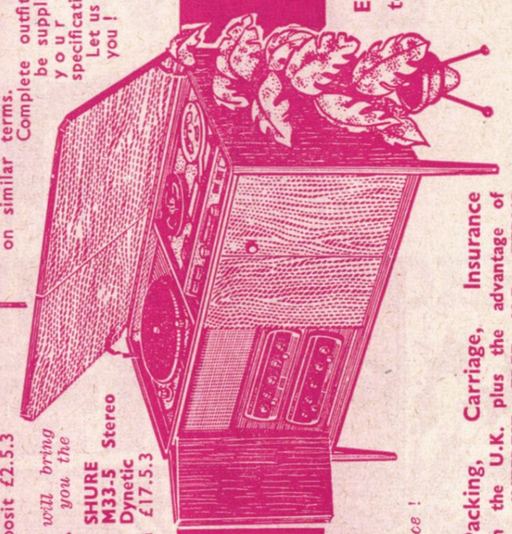
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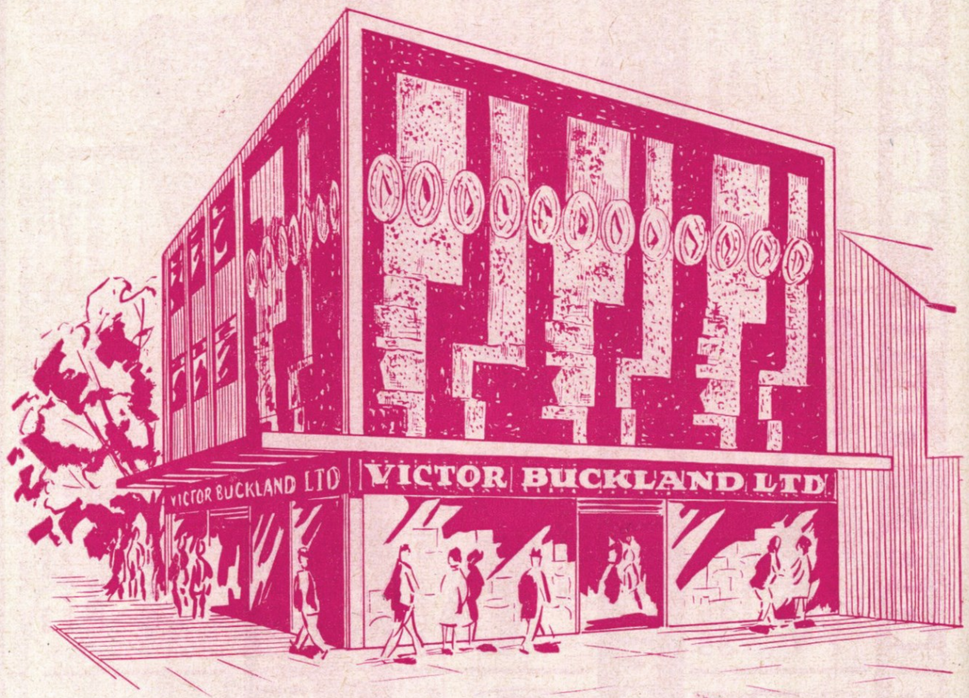
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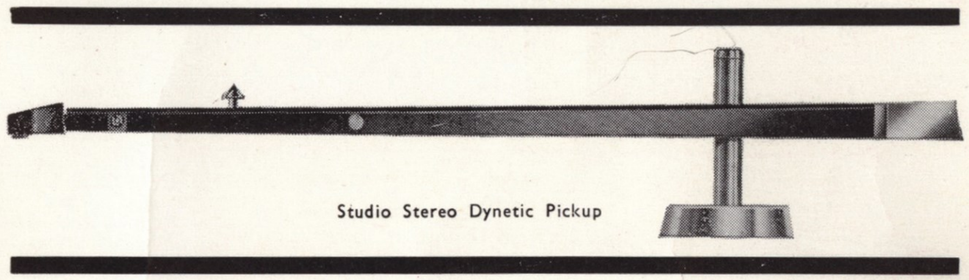
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