

*A remarkably efficient  
2-volt General Purpose Valve*

# Marconi

Type H.L.210

## VALVE

Whatever the calibre of the set—  
one valve or five—vastly improved  
performance is assured if you fit the  
new Marconi Type H.L.210 Valve  
which is a wonderfully improved  
General Purpose Valve embodying  
the results of the latest research in the  
manufacture of thermionic valves.



#### CHARACTERISTICS.

Filament volts	2.0 max.
Filament current	0.1 amps.
Anode volts	150 max.
Amplification factor	15
Impedance	25,000 ohms.

Marconi Type H.L.210 is suitable for  
the following purposes:—

1. A High Frequency Amplifying Valve.
2. As a Detector Valve.
3. For Transformer or Choke coupled Low Frequency Amplifiers.

Marconi H.L.210 is extremely economical, the power required to heat the filament being only  $\frac{1}{5}$  watt.

Price **10/6**

*Full particulars of Marconi H.L.210 and supplies of other Marconi Valve Literature sent on request.*

**THE MARCONIPHONE COMPANY, LTD., 210-212, Tottenham Court Rd., LONDON, W.1**

The name that guarantees *Marconi* all that is best in Radio



# STILL SOARING SALES!



Up! Up! Up! Still they rise. Public favour has definitely turned to Triotron Valves. Day by day, sales show a steady increase, striking proof of the growing popularity of these better valves. Triotron Valves sell at a most attractive price—less than half that of other leading valves.

Make certain, dealers, that *you* are getting the benefit of Triotron sales. Remember, 250,000 wireless users are now using Triotron on their sets with remarkable results. Build your goodwill the Triotron way.

## POWER VALVES

- Type ZD 2  
2 Volt 0.1 Amps.
- Type ZD 4  
4 Volt 0.15 Amps.
- Type UD 4  
4 Volt 0.1 Amps.

And a splendid range of general purpose valves.

## RESISTANCE COUPLING

- Type WD 4  
4 Volt 0.05 Amps.
- Type WD 2  
2 Volt 0.07 Amps.

# TRIOTRON

**DARK EMITTERS**

(British Patents)

*If your factor cannot supply, apply direct to :*

**Electric Lamp Service Co.,**  
39, Parker St., Kingsway, W.C.2.  
Telephone .. .. Holborn 6631-6635, 0070  
Telegrams .. .. Eleclamp, Westcent, London

**Chorlton Metal Co., Ltd.,**  
18, Amber St., Shudehill, Manchester  
Telephone .. .. Manchester Central 7379  
Telegrams .. .. Chorlmet, Manchester

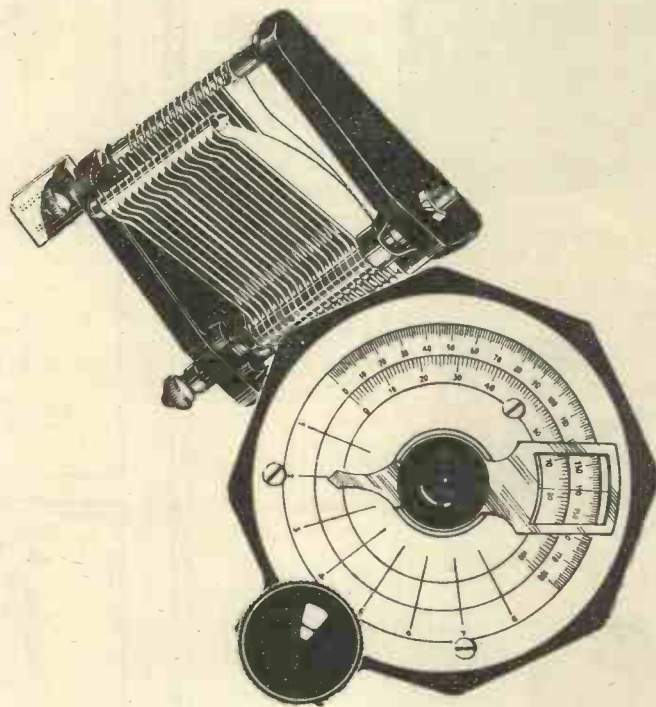
# This is the Condenser and the Dial *that Cossor specify*

The Ormond S.L.F. Condenser and the famous Ormond Slow Motion Dial were selected by Cossor for the Melody Maker to ensure razor - sharp tuning and utmost selectivity.

You will be well advised to sell your customers only the specified parts for the Melody Maker—for only the precision and the fine adjustment of the Ormond S.L.F. Condenser operated by the Ormond Slow Motion Dial can give the Melody Maker its selective tuning.

The Ormond Ideal Loud Speaker is also recommended for the Melody Maker—it ensures the ultimate perfection of reproduction from a very fine circuit.

The Ormond Slow Motion Dial is being used and specified for more and more sets and circuits, and the Ormond S.L.F. Condenser is the standard by which all tuning is judged. You cannot afford to be out of stock of these lines—order to-day to meet the demand.



**ORMOND ENGINEERING  
CO., LTD.,**  
199-205, PENTONVILLE RD.,  
KING'S CROSS, LONDON, N.1



Telephone : Clerkenwell 9344-5-6.  
Telegrams : Ormondengi, Kincross.

Factories : Whiskin Street, and  
Hardwick St., Clerkenwell, E.C.1

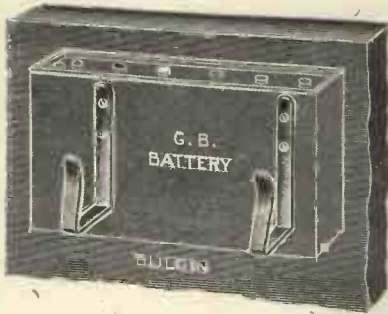
Continental Agents: Pettigrew & Merrimen, Ltd., "Phonos  
House," 2 & 4, Bucknall St., New Oxford St., London, W.C.1

WHEN REPLYING TO ADVERTISEMENTS PLEASE MENTION "THE BROADCASTER."

# BULGIN

RADIO PRODUCTS

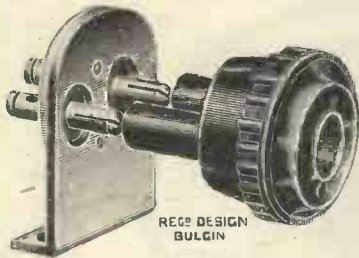
**OUR NEW CATALOGUES  
ARE NOW READY  
A STILL LARGER SELECTION  
OF QUICKSELLING LINES**



**NO. 5 TYPE  
G.B. CLIPS**

An appealing line not only to the amateur constructor but also to all manufacturers. Effective in operation and attractively carded.

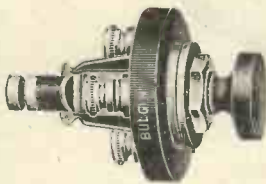
PRICE 2d. each  
SUBJECT 14



**MAINS  
SAFETY PLUG**

Specified in all 'Simpler Wireless' Circuits. A necessity to all users of any mains supply. Do not fail to carry a stock of these.

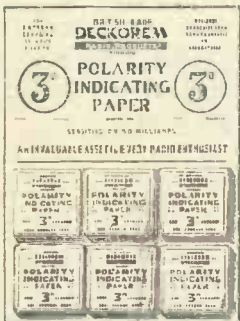
PRICE 3/9 EACH  
SUBJECT



**TRIPLE SHORT  
CIRCUITING SWITCH**

Another addition to our large range of radio switches.

PRICE 2/- EACH  
SUBJECT



**POLE FINDING  
PAPER**

Dealers will find no difficulty in disposing of large quantities of this attractive line at the popular price of 3d. per packet. It commands a ready sale. Procure a sample card now.

OUR PRODUCTS CAN BE OBTAINED FROM EVERY RECOGNISED FACTOR IN THE UNITED KINGDOM BUT IN CASE OF DIFFICULTY WRITE

## A. F. BULGIN & CO

RADIO MANUFACTURERS,  
9, 10, 11, CURSITOR ST., CHANCERY LANE, E.C.4.

Phone: HOLBORN 2072.

## It Sells at Sight



### IT'S A "GOODWUN"

See page advertisement in March Broadcaster for full particulars.

EVERYTHING is contained in the Cabinet except the Aerial and Loud Speaker.

Write for details and terms to

**GOODWIN RADIO**  
395, St. John St., LONDON, E.C.1

## TELSEN Radiogrand

L.F. TRANSFORMER  
FOR BETTER RADIO RECEPTION



STILL LEADS THE WAY FOR VALUE and EFFICIENCY.

The popularity of this L.F. Transformer has been enormous since its introduction and the demand is unprecedented. Constructed of the finest materials these capable instruments give results that cannot be rivalled by even the most expensive on the market.

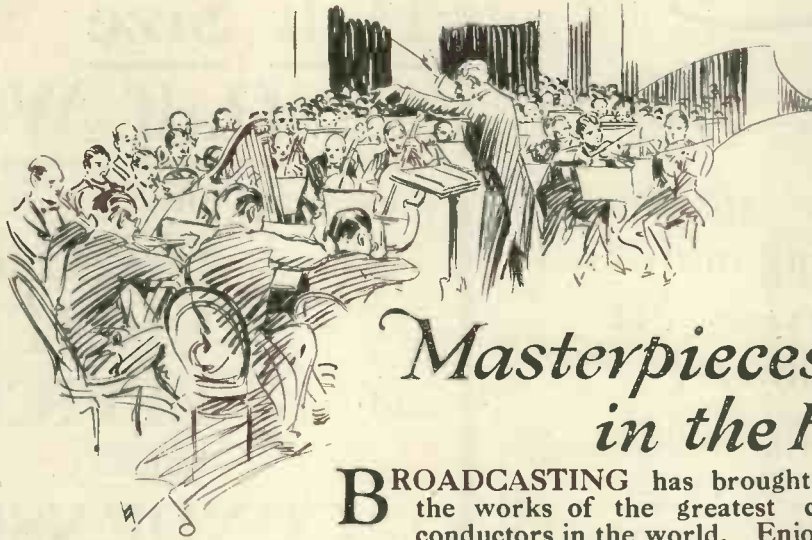
RETAIL PRICE **12/6**  
Ratios 5-1 and 3-1

TELSEN-ACE L.F. TRANSFORMERS

5-1, 3-1 Ratios  
RETAIL PRICE **8/6**

Immediate delivery from stock guaranteed by the sole London agents:

**THE SEL-EZI WIRELESS SUPPLY Co., Ltd.,**  
GREEK STREET, SOHO, LONDON, W.1.



## Masterpieces in the Home

**B**ROADCASTING has brought to the home the works of the greatest composers and conductors in the world. Enjoyment of their art to the full is possible only by securing purity of tone and faithful reproduction.

Recommend your customers to use "HART" Batteries for both Low and High Tension supply, and their sets will be improved out of all knowledge. The valves will be supplied with steady current that will enable them to work at their best, and nothing of the beauty of the actual performance will be lost.

Further proof of this is evidenced by the fact that many of the greatest musicians personally use and recommend "HART" batteries.

# HART BATTERIES FOR ALL WIRELESS CIRCUITS

Write Dept. 'B' for full particulars,  
trade terms and FREE Booklet of  
Interest to all wireless users.

**HART ACCUMULATOR CO. LTD.**  
**STRATFORD. LONDON, E.15.**

- BIRMINGHAM: 165, Edmund Street.
- BRISTOL: 37, Victoria Street.
- CARDIFF: 50, Charles Street.
- GLASGOW: 107, Wellington Street.
- MANCHESTER: 88, Chapel Street, 3
- WESTMINSTER: 36, Victoria St., S.W.1.
- YORK: 6, Bridge Street.



Goodall Ad.

# "EKCO"

Breaks fresh ground

A remarkable statement offer and warning addressed to all Wireless Set manufacturers!

**THE STATEMENT**

Manufacturers must already realise that there is no doubt whatsoever, that power supply for Radio in the immediate future will be from the Electric Mains. This being so, sooner or later, manufacturers must instal "EKCO" (H.T., L.T. or "All-Power") units in their sets.

**BECAUSE**

(a) Like the magneto of a motor-car, the Power Unit of a receiving set is an intricate piece of mechanism—essentially the work of SPECIALISTS.

(b) We, as manufacturers of the world-wide popular "EKCO" Units can justly claim to be the only SPECIALISTS and the

**PIONEERS** of Radio Units in this country. Moreover, "EKCO" sales exceed those of any other unit.

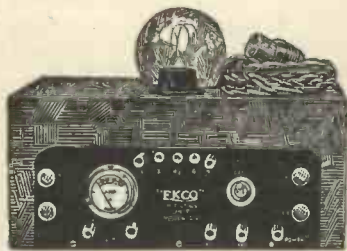
**THE OFFER**

We cordially offer to cooperate with and assist Manufacturers in installing an "EKCO" as a component part of their set by providing the advice and service of experts free and without obligation. Inform us of your especial requirements or arrange for one of our representatives to call upon you—LET US HELP YOU.

**THE WARNING**

Instal "EKCO" and only "EKCO"! Now is the time, whilst you are considering your next season's programme.

*Safe! Silent! Sound!*



**THE FOREMOST BRITISH COMBINED UNIT.**

Model C2. D.C. for H.T., L.T., and G.B.

Price Complete:

**£6 - 7 - 6**

**E.K. COLE LTD**

DEPT. G., "EKCO" WORKS, LONDON ROAD, LEIGH-ON-SEA.



**Half Size**

**Half Weight**

Absolutely the

**SMALLEST  
LIGHTEST  
EFFICIENT**

and most

variable

**CONDENSER**

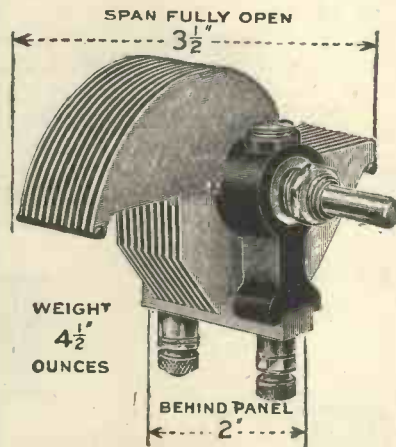
**"1928" LOG**

·00035  
and  
·0005

**5/-**

DUAL GANG  
15/6

TRIPLE GANG  
£1 : 1 : 0



WEIGHT  
4 1/2  
OUNCES

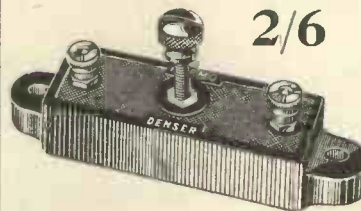
BEHIND PANEL  
2"

**THE**

**FORMO-DENSOR**

A high grade Variable Condenser costing no more than a Fixed Condenser.

From  
**2/6**



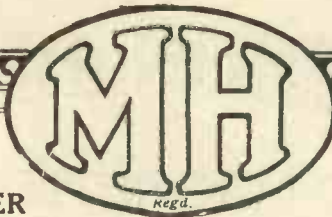
A sound variable condenser which fills a long-felt want. Specially designed to take the place of the hitherto generally used Fixed Condenser. For use as:

- Neutralising Condenser
- Aerial Condenser
- Grid Condenser
- Reaction Condenser
- Phasing Condenser
- Tone Control Condenser

Full Catalogue free on request.

'Phone :

Crown Works, Cricklewood, N.W.2. Hampstead 1787.



**THE No 5 VALVE PORTABLE RECEIVER**



**"THE SCREENED DIMIC THREE"**

**IMPORTANT NOTICE**

We have pleasure in advising traders that our new Screened Dimic Three will be available to definitely booked orders as from 16th April.

The demands on our demonstrators are heavy, but if you are interested please write us, and we will endeavour to give demonstrations. Heavy advance orders have already been given, and initial supplies must be dealt with in rotation. You are therefore advised to get in touch with us at once.

This instrument will undoubtedly be one of the outstanding successes of this and the coming season. It possesses a truly remarkable range and gives extraordinarily full and perfect volume. We are prepared to guarantee at least thirty stations on the loudspeaker in the normal Broadcast and Long-Wave bands, and in addition, two to three American stations on the ultra-short (15/100 metres) band, to which range the set is readily adaptable by the simple changing of two plug-in Dimic Coils.

The price has been fixed at .... **18 GNS.**  
Royalties 37/6. Valves 58/- extra. *Retail*

**MH 5 VALVE PORTABLE RECEIVER**

First class reception guaranteed up to 40 miles from any main B.B.C. Station, and 300 miles from Daventry.

Retail Price, 30 Gns. Complete and including all Royalties.

**The "McMICHAEL FIVE" (Transportable) RECEIVER**

The ideal "Frame Aerial" Receiver giving a wide choice of stations and being quite self-contained, can be moved about as desired.

Retail Price, 21 Gns. (Exclusive of Royalties, Valves and Batteries.)

Every MH Receiving Set reveals the highest technical skill in designing the most expert engineering and the finest craftsmanship.

**L.M. MICHAEL LTD**

Manufacturers of Wireless and Scientific Apparatus  
**WEXHAM ROAD, SLOUGH, BUCKS.**

Telephone: SLOUGH 441-442

Telegrams: "RADIETHER, SLOUGH"

LONDON OFFICE AND WHOLESALE SHOWROOMS:  
179, STRAND, W.C.2 Telephone: Central 6988.



The truly remarkable qualities possessed by McMichael receivers, and more particularly the latest achievement, the Screened Dimic Three, are the result of intimate knowledge of coil design, choke efficiencies, and practical engineering.

The following components will help the amateur to efficiencies in his constructions unattainable by any other units:—

Retail Price

- MH Balancing Condenser 4/9 each
- MH Three Point Switch 3/6 "
- MH H.F. Choke ..... 9/- "
- MH Dimic Coil ..... 9/- "
- Base 2/- Extra.



# EDISON BELL

## ELECTRO-MAGNETIC PICK-UP FOR GRAMOPHONES.

SIMPLICITY ITSELF!



Cat. No. R/395.

This Pick-Up has been designed to facilitate the reproduction and amplification of Gramophone Records through the medium of a Wireless Set, *without* disconnecting any existing aerial, earth, battery or loud-speaker leads.

The patent adapter is plugged into the Detector Valve Holder and the valve inserted in the adapter. By disconnecting junction plug in leads between Pick-Up and Adapter, ordinary broadcast reception is possible without any further adjustment whatever.

*Write for further particulars and read what the experts say.*

JUST PLUG IN YOUR VALVE HOLDER. Complete with Flex, Plug and Adapter **27/6**

### THE PROMPT FACTOR

BEST LINES OF ALL MANUFACTURERS KEPT IN STOCK.

147-149, NEWINGTON CAUSEWAY, LONDON.

Phone: Hop 5794

Also 36, MARSH STREET, BRISTOL

## CLARK & MOIR, Ltd.

**5<sup>D.</sup>** per Set of **15**  
ASSORTED NAMES.

SELF-FIXING TERMINAL LABELS.

ASSORTMENT  
IN EACH  
PACKET.

- Aerial.
  - Earth.
  - Phones +
  - Phones -
  - Loud Speaker +
  - Loud Speaker -
  - High Tension +1
  - High Tension +2
  - High Tension +3
  - High Tension -
  - Low Tension +
  - Low Tension -
  - Grid Bias +
  - Grid Bias -1
  - Grid Bias -2
- (Positive Labels are in Red.)



This counter box contains 12 packets, each containing 15 assorted terminal labels.

Retail Price  
5d. per pkt.

Trade Price  
3/6 per doz.

DISCOUNT  
TO FACTORS.

SPECIALLY NOTE.—The assortment includes TWO Phone Labels; other makes have only one.

THE BEST VALUE YET OFFERED.

POST THIS COUPON AT ONCE.

To CELLGRAVE CO., 232, Perry Hill,  
London, S.E.6.

Send.....Doz. Pkts. "CELLBEST" LABELS at 3/6 doz

NAME .....

ADDRESS .....



Are you getting  
your share?

Over 250,000 Sifam Radio Meters have been sold, providing conclusive proof of their efficiency and popularity amongst all classes of listeners.

The Sifam Sales campaign has created a profitable new line, with a staple sale, for hundreds of traders. The demand has spread all over the country, but we are still receiving direct orders from some districts—is yours one of these?

Take the first step to secure the business in your district by displaying the handsome velvet plaque and a series of arresting window bills, supplied free to stockists. Ask for trade terms and catalogues.

SELL



RADIO METERS

The Sifam Electrical Instrument Co., Ltd.  
(Sales Dept. B),  
10a, Page Street, Westminster, S.W.1

M.B.



NEW MODEL  
Pocket Voltmeter.

High Resist.  
4,000 ohms.  
Heavy Nickel  
case

**9/6**

WHEN REPLYING TO ADVERTISEMENTS PLEASE MENTION "THE BROADCASTER."



# To Our Many Friends —THE FACTORS and RETAILERS

We now have ready the DX Transformer. Like the famous DX Coil—it is a really good job—and for efficiency (which is after all the only thing that matters in RADIO) cannot be beaten.

*The many thousands of users of DX Coils will want the DX Transformer—please see that they get it.*



Actual Size  
3 1/4" High  
3 3/8" Wide

Weight 24 ozs

Ratio 3-1

# 8/-

(Subject to our usual Terms and Conditions No Price Cutting)


**FACTORS ONLY SUPPLIED**

# DX COILS LTD LONDON E 8

Throughout the Year your Wholesaler will recommend

# POLO BATTERIES—

Made under the famous Sachs System.

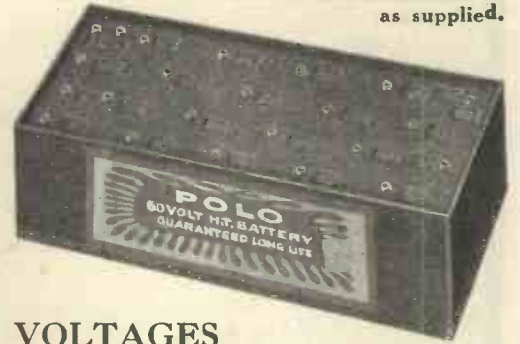
Because—Every genuine Polo Battery is guaranteed.  
None genuine without our  Trade Mark.

For particulars of our full range write to :

ONE TRIAL WILL ENSURE SATISFACTION.

**POLO BATTERY MANUFACTURING COMPANY, LTD.,** 142, Moorgate Station Chambers, E.C.2.  
Telephone : London Wall 1425. Telegrams : "Satalolo, Ave., London."

The POLO H.T. BATTERY as supplied.



VOLTAGES

from 4.5 to 100 volts.

Attractive Showcards Supplied.

WHOLESALE ONLY.

## THE "VAROTO" CONSOLE MODEL

Combined 3 valve Wireless Receiver and Gramophone



PRICE  
£17 - 1 - 6

Including Royalties.

Liberal discounts to the Trade

Send for our latest illustrated catalogue.

**W. BIRD & SONS,**

33, Fulham Palace Rd., Hammersmith, W.6

'Phone: Riverside 2738.

## 50

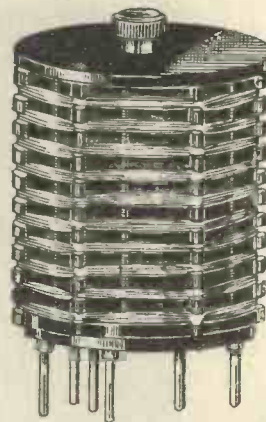
Lines of "POPULAR" Components.

The Latest and Best

Mullard Master  
3 COIL

We challenge comparison for  
LOUD SIGNALS,  
SELECTIVITY,  
STURDINESS,  
APPEARANCE  
AND PRICE.

Send for sample and test  
it on broadcast.



EBONITE



PANELS

ROD TUBE

SHEET

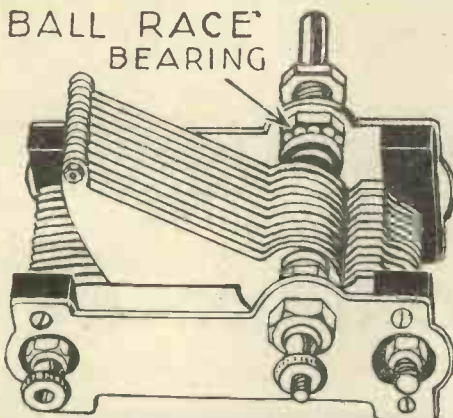
The DANIPAD RUBBER CO.  
LIMITED,

5-7 MARKET STREET, FINSBURY, E.C.2.

'Phones: Bishopsgate { 7322.  
7323.

'Grams: Padonko, Finsquare,  
London.

BALL RACE BEARING



# M.R. PRODUCTS

CONDENSERS

\*0005 5/-

\*0003 4/9

Fully Tested and Guaranteed. Less 33% and 5% for Cash.

IMPORTERS OF AMERICAN COMPONENTS.  
BAKELITE RHEOSTATS 30 ohm 15/- Doz.

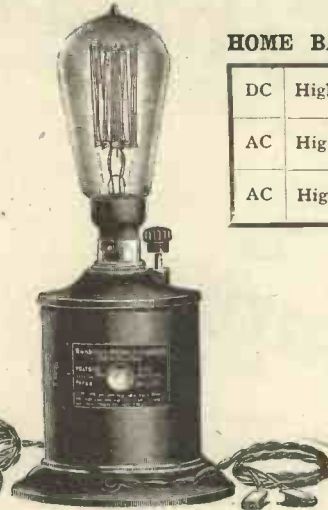
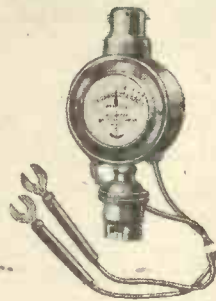
Miniature Jack for Portables 9/- doz.

Large variety of Vernier Dials from 1/-

**M.R. PRODUCTS** Earls Blds., Featherstone St., City Rd., E.C.1  
'Phone: Clerkenwell 5479.

WHEN REPLYING TO ADVERTISEMENTS PLEASE MENTION "THE BROADCASTER."

**YOU CAN HAVE ANY OF THESE UNDER OUR GUARANTEE OF SATISFACTION**



**ARDWICK HOME BATTERY CHARGERS**

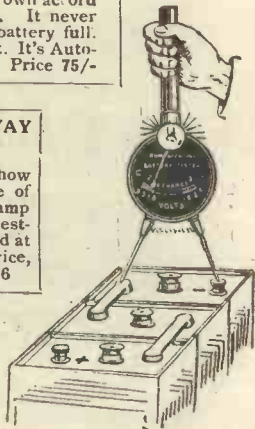
DC	High and Low Tension	30/-
AC	High Tension ... ..	42/6
AC	High and Low Tension	75/-



**NEW RUNBAKEN AUTOMATIC BATTERY CHARGER**  
 Makes a perfect power supply for your set. Can be used with any battery. Works on its own ac. cord whenever set is used. It never forgets to keep your battery full. Connect it and forget it. It's Automatic. Price 75/-

**NEW CHEMICAL POLE-FINDER**  
 Lasts for years. Any voltage. No Wireless Dealer or user can afford to be without this useful Pole-finder. Retail Price, 5/6 Complete in case.

**THE RUNBAKEN WAY TO TEST RADIO BATTERY**  
 In an instant you can show your customer the state of the charge. Small lamp illuminates dial while testing, and load is applied at the same time. Retail Price, complete in Case, 17/6



**AGENTS WANTED.**  
 WRITE FOR LISTS AND TERMS.  
 ALSO LISTS OF RADIO COMPONENTS.



Rev. Office & Works  
 TIPPING ST. MANCHESTER. Ardwick 2515 3 lines.  
 240, DEANS GATE, MANCHESTER  
 LONDON: 39, VICTORIA STREET, S.W.1. 84/2 3 V ctorla



**A.C. & D.C. HIGH-TENSION ELIMINATOR**  
 Send for List.

*It's right if it's Runbaken!*

# MAGNAVOX

ELECTRO DYNAMIC AND PERMANENT MAGNET  
**SPEAKER UNITS**

Read what Mr. W. James says about the Magnavox Speaker Unit in the "Morning Post" of January 18th. 1928 :-  
 "I have lately been testing a loud speaker of American manufacture that, regardless of price, is the very best I have ever listened to. The instrument is of the moving coil type."



**MOVING COIL UNITS R.4.**  
 £9 10 0

Field Volts 6. Consumption 5 amps. Resistance 12 ohms. The field can be taken from your accumulator or any standard trickle charger. Has built in input transformer.

**R.5 £10 10 0**  
 105/120.V. D.C. Field Volts—or 220/240.V. D.C. Consumption 5 watts. Resistance 2,500 ohms. Has built in input transformer.

**PERMANENT MAGNET UNITS. M.7K.**

For those who have not the facilities for the R.4 or R.5, the Magnavox M.7K, will give faultless reproduction with quality unsurpassed by any other speaker units.

Furnished complete with input cords and cover for protection of magnets .. **£3 2 6**



**THE GREATEST SENSATION IN RADIO'S HISTORY**  
 A Revelation in Quality and Performance

Our new 1928 Catalogue and Circuit Supplement is now ready.

**THE ROTHERMEL CORPORATION, LTD.,**  
 24, Maddox Street, W.

Telephone : Mayfair 0578  
 0579

Telegrams : "Rothermel" Wesdo London

WHEN REPLYING TO ADVERTISEMENTS PLEASE MENTION "THE BROADCASTER."

# Here's the Portable that Sells

## The Empire

**Empire Means Perfection In Radio Equipment**

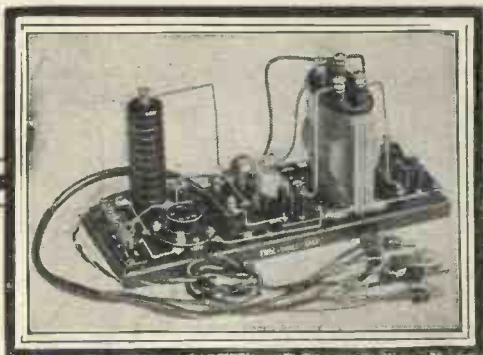
With practically no advertising, the Empire Portable has been selling as fast as we could turn it out. Every demonstration sells a set—that's our experience. It looks so neat, so portable, that it makes an immediate appeal to your customers. No knobs, no earth, no aerial—just press in the spring door at the side and it plays. Reproduction is perfect, and the range and volume remarkable for a Portable weighing only 15 lb. Both 3- and 4- valve Models are equipped with Mullard Valves, a special 2-volt unspillable accumulator, and 100-volt H.T. Battery with combined grid battery.

The EMPIRE PORTABLE 4, complete with self-contained Loudspeaker. £12-12-0. Marconi Royalties extra. Range 25 miles. Daventry 100 miles. Langenberg can also be received at good Loud-speaker strength. De Luxe Models in Real Leather, Morocco, Lizard, etc., at £14-14-0.



The EMPIRE PORTABLE 3, complete with self-contained Loudspeaker. £10-10-0. Marconi Royalties extra. Range 15 to 20 miles. Daventry 50 miles. De Luxe models in Real Leather, Morocco, Lizard, etc., at £12-12-0.

**EMPIRE ELECTRIC CO., 303, Euston Rd., London, N.W.1.**



*The last word in SET BUILDING Simplicity!*

Tell your customers that the TRIX Three-Base has made set building so simple that the veriest novice can construct the "Melody Maker" or "Master 3" or other 3-valve sets with professional precision and finish at less than the usual cost and quarter the usual time. They have only to decide on the tuning circuit, connect up required coils and condensers, and a highly efficient set is ready to receive everything on 3-valve strength. To sell the TRIX Three-Base is just as simple too, as you will discover! Manufactured and guaranteed by:

**ERIC J. LEVER (TRIX) LTD.**  
8-9, Clerkenwell Green, E.C.1  
*(Kindly Note Change of Address).*  
Telephone - - - Clerkenwell 5014-5.

**TRIX**  
**THREE-BASE**

RETAIL PRICE  
**45/-**

Send for particulars of the TRIX Three-Base TO-DAY.



FOR  
**PORTABLE CABINETS**



Put your portable set into a Camco Cabinet! Best design, best materials, best workmanship.

"Ideal" model illustrated, built to accommodate any cone unit, complete with inner frame, baseboard, etc. and with lock and nickel-plated fittings.

List Price 52/6d in Oak  
58/- in Mahogany

Send for leaflet No. 4 describing the "IDEAL" Cabinet models in full.

**CARRINGTON**  
Manufacturing Co. Ltd.

Camco Works, Sanderstead Road, SOUTH CROYDON  
Telephone: Croydon 0623 (2 lines)

WHEN REPLYING TO ADVERTISEMENTS PLEASE MENTION "THE BROADCASTER"

# THE NEW IDEA— WIRELESS ALL OVER THE HOUSE



Everywhere people are realising that a house isn't effectively equipped with wireless unless provision is made for simultaneous reception and independent control in every room.

The Lotus Remote Control provides control from every Jack position. Interference is impossible.

The last plug withdrawn cuts off the filament circuit, so that the set cannot be left on.

*Recommended for use with the Cossor Melody Maker.*

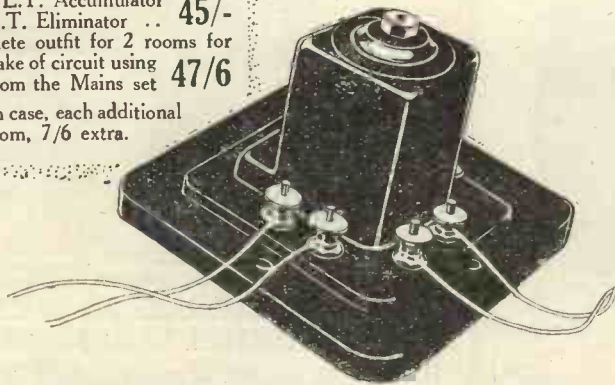
**Lotus Remote Control suits any set!**

The Lotus Remote Control is made for every type of receiving set, as follows:—

**Retail Prices:**

- Complete outfit for 2 rooms for a set using L.T. Accumulator and H.T. Battery, including 1 Lotus Relay, 2 Filament Control Wall Jacks, 2 Jack Plugs and 21 yards special 4-strand wire . . . . . 30/-
- Complete outfit for 2 rooms for set using L.T. Accumulator and H.T. Eliminator . . . . . 45/-
- Complete outfit for 2 rooms for any make of circuit using All from the Mains set 47/6

In each case, each additional room, 7/6 extra.



★ **FREE** Blueprints for distribution to the public are available on request. Why not get a supply and exhibit a few Controls and a blueprint in your windows?

## LOTUS REMOTE CONTROLS

*Made by the makers of the Lotus Vernier Coil Holder and the Lotus Buoyancy Valve Holder.*

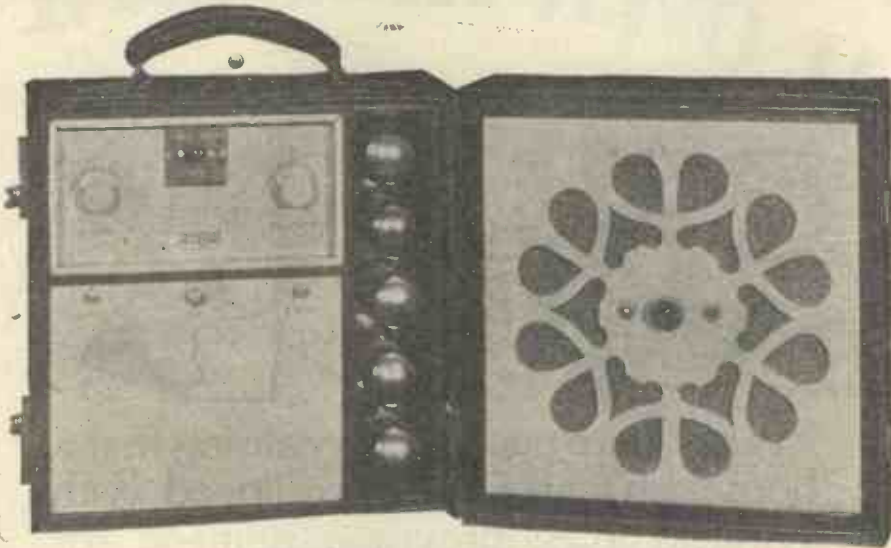
**GARNETT WHITELEY & CO., LTD., Broadgreen Rd., LIVERPOOL.**

WHEN REPLYING TO ADVERTISEMENTS PLEASE MENTION "THE BROADCASTER."

She shall have music wherever she goes with a  
**“PERFECTA” PORTABLE WIRELESS**

NO EARTH. NO AERIAL.

For the Home, Car, River, Country or Seaside



The “PERFECTA” weighs 20 lb., and can be carried from room to room, or on the river or car. Perfect reception anywhere with absolute purity of Tone and Volume. Receives all British and most foreign stations. A child can operate it.

We take over your **£8.0.0**  
 Hire Purchase—DOWN.  
 Balance twelve monthly instalments.

Ask our Representative to call.

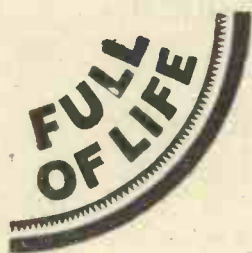
PRICE **£31.10** including Royalties

AS ADVERTISED IN THE PUBLIC PRESS.

**PORTABLE WIRELESS, LIMITED**

Phone: REGENT 0631.

189, REGENT STREET, LONDON, W.1



**ELTAX**

**NEW SYSTEM POWER H.T. BATTERIES**

Now available.

Low in price. High in efficiency.



Specially manufactured to meet present-day Radio Requirements.

- |  |      |
|--|------|
| For 2-3 V.S. recommend Eltax Red Seal 60v. | 7/6  |
| “ 3-4 “ “ “ Gold Seal “                    | 8/6  |
| “ 4-5 “ “ “ Super Cap “                    | 12/6 |
- subject to liberal discounts.

All Batteries fully tapped for G.B.

The exceptional long life of the new POWER H.T. Batteries make them the cheapest and most reliable form of H. T. supply obtainable.

Recommend Eltax and make satisfied customers.

**THE LANGHAM ELECTRICAL SUPPLIES CO.**  
 (BATTERY SPECIALISTS)

52, Dorset Street, Baker Street, W.1.

Telephone: Mayfair 0262  
 Telegraphic Address: “Distillage Baker, London.”



**DO YOU SELL IT?** If not you are losing good business. No crystal set user should be without  
 THE NEW **NON-VALVE MAGNETIC**

**MICROPHONE BAR AMPLIFIER**



Patent No. 248581/25  
 which works any **LOUD SPEAKER** from **CRYSTAL SETS** up to 6 or 8 miles from a main broadcasting Station; or makes **WEAK CRYSTAL** or **VALVE RECEPTION** **LOUD** and **CLEAR** in headphones under any conditions. Enables even **VERY DEAF** persons to hear **FROM CRYSTAL SETS**.

Operates perfectly on one or two small dry cells. No other accessories required.

**NO VALVES, ACCUMULATORS OR H.T. BATTERIES.**  
**NO DISTORTION. NO FRAGILE PARTS.**  
 Nothing to get out of order. A Child can adjust it.  
**Price 34/- Post free.**

Every Amplifier guaranteed—Liberal discounts to the Trade.  
 Printed matter, window show-card, etc. on application.

Sole Manufacturers and Patentees:  
**NEW WILSON ELECTRICAL MANUFACTURING Co., Ltd.**  
 18, Fitzroy St., Euston Rd., London, W.1.  
 Phone: Museum 8974.

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# New Eliminator Components



## SMOOTHING CHOKE

The extensive use of high power output valves calls for an eliminator capable of dealing with the necessary heavy anode current. Such current needs to be adequately smoothed, and there will be a big demand for our new smoothing chokes which fulfil all the necessary requirements, whilst being procurable at a remarkably reasonable price.

These chokes can carry the enormous current of 100 milliamperes without an appreciable fall in inductance, and with the growing popularity for eliminators these new components promise to be an exceptionally profitable line.

21/-  
EACH.

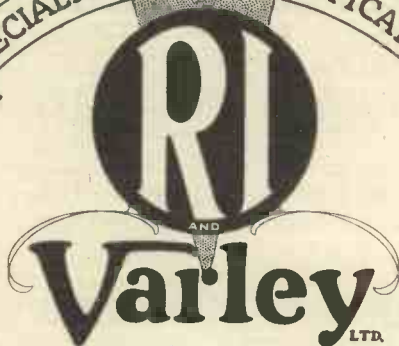
## Super Power RESISTANCES

The series resistance method for adjusting the voltage in eliminators has proved so popular that we have specially designed a new form of resistance for this particular purpose. These resistances are able to carry a heavy anode current without overheating, special care having been taken in their design to deal adequately with any slight heat generated. These new components will appeal to your customers, and they are procurable in different values which should meet all requirements.

500 ohms to carry 50 milliamperes; 1,000, 1,500, 2,000, 2,500 and 3,000 ohms, each to carry 30 milliamperes.

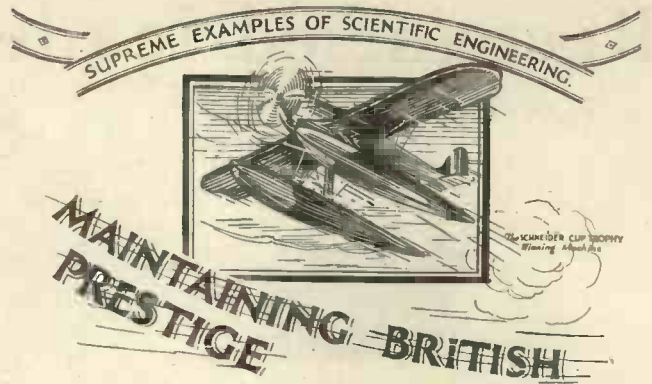
12/9  
EACH.

SPECIALISTS IN LF AMPLIFICATION



*The Mark of Better Radio*

Kingsway House, 103, Kingsway, W.C.2. Telephone: Holborn 5303.



# CYLDON

## AND POPULAR RECEIVERS

### 5 VALVE 'SOLODYNE'

We claim outstanding advantages for this special "Cyldon" production. Greater selectivity, easier tuning, better control, finer adjustment and no extra drum to buy. Built as one unit on aluminium chassis.

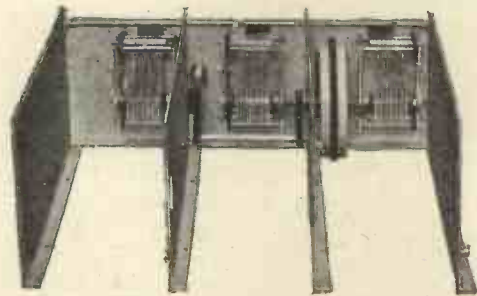
PRICE £3 12 6 or complete with screens £4 10 0

Drilled Aluminium Base, 7/6

Drilled Copper Base, 12/6

The "Cyldon" Bebe Condenser is specified by the designers of the 1928 Solodyne. Built on the square law principle. Complete with knob and dial. PRICE (.0001) 7/6.

*1928 Solodyne*



### 3 VALVE 'SOLODYNE'

This circuit specifies the "Cyldon" Twin Thumb Control Condenser. Price, complete with drums (.0005)

£2 7 0.

The designer of the MULLARD "RALEIGH" specifies three "Cyldon" Log Mid-Line Condensers (.0005) PRICE 15/6 each and one "CYLDON" S.L.F. (.00035). PRICE 15/-.

IMMEDIATE DELIVERIES AVAILABLE.

**SYDNEY S. BIRD & SONS, LTD.**

Cyldon Works, Sarnesfield Road, Enfield Town, Midd.

Phone: Enfield 2071/2.

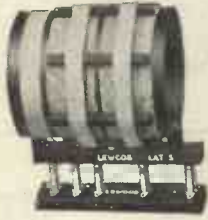
Grams: "Capacity, Enfield." B1.

Goodall Ad.

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# Recognised leaders in the design of Solodyne Coils

FOR THE 1928 SOLODYNE



**B.B.C. Coils :**  
 Aerial Circuit 1 Ref. LAA 5 } £2 - 5 - 0  
 H.F. Transformer 2 Ref. LAT 5 } Per Set  
 5-pin Bases 3 Ref. LB } including bases

**Davertry Coils :**  
 (Pat. No. 25723).  
 Aerial Circuit 1 Ref. LAA 20 } £2 - 5 - 0  
 H.F. Transformer 2 Ref. LAT 20 } Per Set  
 Additional Bases Ref. LB .. .. 2/- each. without bases



1 Lewcos Wavetrap .. .. . 13/6

# Solodyne Coils

As manufacturers of the special coils used in the original 1926 Solodyne, Lewcos established a leadership which is still unchallenged. New developments necessitate many alterations in the design of coils for the 1928 Solodyne. But again LEWCOS will give you that extra selectivity and efficiency that constructors have learnt to expect from all Lewcos Coils.

The demand for these new coils and wavetrapping will be heavy; place your order now and ensure early delivery.

THE LONDON ELECTRIC WIRE CO. & SMITHS Ltd.,  
 Playhouse Yard, Golden Lane, London, E.C.1



(Regd. Trade Mark)

## COILS and WAVETRAPH for the 1928 SOLODYNE

# MAGNAVOX

### NOTICE.

MAGNAVOX Dynamic Speaker Units (moving coil) are manufactured under the following patents :-

BRITISH PATENTS.	AMERICAN PATENTS.
No. 197,836—24th May, 1923	No. 1,051,113 Jan. 21st, 1913
Others pending.	" 1,088,283 Feb. 24th, 1914
	" 1,266,988 May 21st, 1918
Foreign Patents issued and pending.	" 1,444,524 Feb. 6th, 1923
	" 1,448,279 Mar. 13, 1923
	" 1,524,349 Jan. 13th, 1925
	" 1,579,392 April 6th, 1926
	" 1,582,417 April 27th, 1926
	Others applied for and pending.

Purchasers of these units through our exclusive Sales Representatives—

**THE ROTHERMEL CORPORATION LIMITED,**  
 24-26, Maddox Street, London, W.1,

are advised that they will be fully protected against any infringement actions.

### WARNING.

The MAGNAVOX COMPANY serves notice that infringers of the above British patent—manufacturers of moving coil speakers, assembled or unassembled, embodying any exclusive MAGNAVOX features—will be vigorously prosecuted.

**THE MAGNAVOX COMPANY,**  
 Oakland, California, U.S.A.



**FOR LARGE WIRELESS INSTALLATIONS**  
**CONSULT**  
**The OXFORD WIRELESS TELEPHONY CO. LTD.**

**SPECIALISTS IN HOSPITAL WIRELESS INSTALLATIONS**

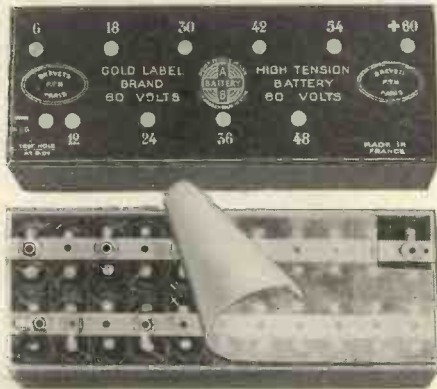
Contractors to the "Daily News" Wireless Fund, Local Government Boards, Hospitals, Institutions, etc., etc.  
**NO CONTRACT TOO LARGE OR TOO SMALL.**

**THE OXFORD WIRELESS TELEPHONY CO. LTD.**  
 TITMOUSE LANE, OXFORD.

Telephone : OXFORD 2742.  
 LONDON BRANCH : 38, FULHAM PARK GARDENS, S.W.6.  
 Telephone : PUTNEY 4329.

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## HERE IS THE FIRST ILLUSTRATION OF THE NEW "A B" GOLD LABEL HIGH TENSION BATTERY.

Incorporating features patented throughout the World.

Note the way in which the sockets are mounted on a special insulated platform instead of fixed direct on to the carbon rods. Note also the "dodge-proof" method of testing, absolutely preventing irregular use of the battery. The double case increases the strength of the container, and as no pitch is used their weight is reduced, consequently these batteries are ideal for Portable sets.

Manufactured Exclusively by  
Thomson-Houston & Co., Paris.

All Batteries Guaranteed Three Months.

OTHER EXCLUSIVE LINES  
ARE OFFERED ALWAYS AT  
TO-DAY'S KEENEST PRICES.

- Small Cabinet Loud-speakers 10/- each
- "A.B." Adjustable Head-phones, special finish .. 5/6 pair
- "A.B." H.F. Chokes, 300 to 2,600 metres. New Model.. 33/- doz.
- Solid Copper Earth Tubes, 2 ft. long. Special line .. 18/- "
- New Ridged Fabric Cones, 12 in. dia. Silver or Brown 15/- "
- Single-reading Pocket Voltmeters, various readings .. 30/- "
- Double-reading Pocket Voltmeters, 0-6 and 0-130 volts 40/- "
- New Bakelite Vernier Dials, 4 1/4 in. dia. Guaranteed .. 25/- "

All prices quoted are Net Trade, less 2 1/2% cash, Extra discounts to factors and wholesalers only.

At present available only in the 60-volt size, as under :

Measurements.			Actual	Rated	Tapped	Case	Retail
Length	Width	Height	volts.	volts.	every	holds	price.
9 3/8	x 3 5/8	x 2 3/4	66	60	6 v.	24	7/11



IDEAL CONDENSER  
FOR COSSOR  
MELODY MAKER, Etc.

### A SUPERBLY MADE CONDENSER AT AN EXCEPTIONALLY LOW PRICE.

A condenser of the highest class. Perfect precision construction, with slow-motion dials and adjustable geared vernier 100-1. Pigtail connection, "Trolite" ends. Single-hole fixing. Guaranteed. Complete with double dial and special spanner to fit all nuts, etc. Sells at 9/6 Retail.

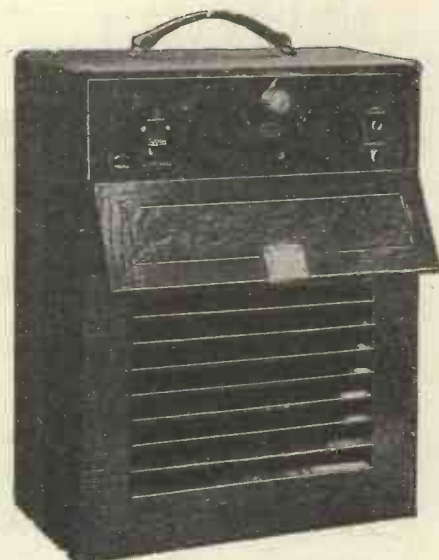
SINGLE SAMPLES 5/6 each Net.  
IN DOZEN LOTS 5/3 each Net.

### SPECIAL TEMPORARY OFFER.

We have recently purchased a limited number of Genuine "HALCYON" 5-valve PORTABLE SETS intended for export. These sets are fitted with the best components, which include MULLARD valves, GECOPHONE slow-motion condensers and transformers, EXIDE or EDWARDS' non-spillable accumulator, and CELESTION loud-speaker. All sets are new and guaranteed, and the same as sold at 35 gns.

Special Trade Price, £21 Net.

All Royalties paid, Complete with all accessories. Ready for immediate use.



**G. E. AMBATIELO & Co., Ltd.,**  
—AMBATIELO HOUSE—  
FARRINGDON ROAD, LONDON, E.C.1

AT THE JUNCTION OF  
CLERKENWELL ROAD



TELEPHONE 4 LINES  
CLERKENWELL 7440

Please refer back to previous issues for other goods advertised.



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# Short Wave! RECEIVERS

Tremendous enthusiasm among the radio public in all countries is being created by Short Wave transmissions.

You should certainly get full particulars of the "Empire" Short Wave Three.

**REPORTS FROM INDIA AND ENGLAND** confirm that short wave transmissions from the following countries are consistently received at good loudspeaker strength by owners of the

**HART COLLINS "EMPIRE" SHORT WAVE THREE**  
AMERICA (Seven Stations) AUSTRALIA—HOLLAND AND THE BRITISH STATION 5 SW

In addition to receiving short wave transmissions down to 10 metres interchangeable coils enable one to also receive stations transmitting on the normal broadcast wavelengths.

The name "Empire" gives a true indication of the wonderful selectivity and range of this set.

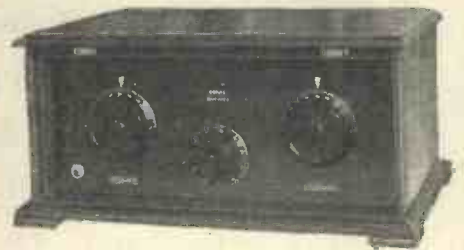
Write for further details of this set and let us also send you Illustrated Leaflets covering the full range of Portable and Non-portable sets that we manufacture.

**HART COLLINS LIMITED**  
38a, Bessborough Street, London, S.W.1, Eng.

Agents for India: Bombay Radio Co., Ltd., 73/75, Queens Road, opposite Marine Line Station, Bombay, 2.

## SPECIFICATION.

This receiver consists of 1 Det. and 2 L.F. stages. Variation in wavelengths is by interchange of special coils. It has only one tuning control and a volume control. All leads are taken to terminal strip at back of the handsome mahogany cabinet.



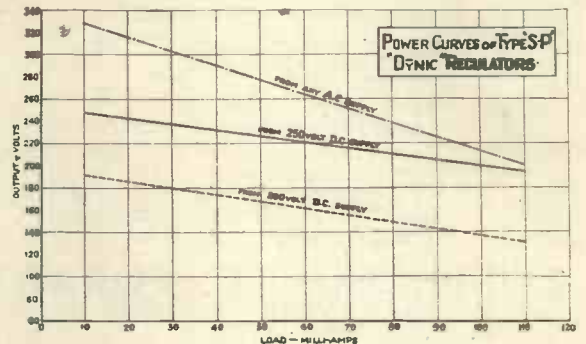
Retail Price £21.

Royalties Paid and Complete with B.B.C. waveband coil; 1 short wave coil for wavelength desired; L.T., H.T., G.B. and Valves.

## Examine the Chart

which shows the voltage and Load outputs of the New S. P. (Small-Power) range of

**DYNIC**  
REGULATORS



For Tone Purity you must have high voltage. "DYNIC" Regulators guarantee this even on heavy loads, as will be seen from the chart. Note the small voltage drop. Furthermore they are absolutely free from hum.

**PRICES** A.C. ANY VOLTAGE 25 to 100 cycles £13 : 13 : 0 (Royalty 1/2/6)  
D.C. 200 to 250 VOLTS - - - - £9 : 10 : 0

Full particulars from the Manufacturers

**JONES & STEWART**  
247a ST. VINCENT STREET, GLASGOW, C.2

Phone : Central 4932

Grams : Gadgets

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# The Dealer who deals in Rolls

Deals himself a full hand of Trumps—and can go nap every time!

The Dealer who does not deal in Rolls can take a nap for all time!



The well-known Rolls 5 VLS model. We are continuing to concentrate on this model. Still the finest value at £30.10.0—the smallest and lightest receiver of similar capabilities. 2 and 3 valve £14.7.0 to £23.10.0.



The NEW

# Rolls PHANTOM FIVE

Therefore be sure to stock this profit-making winner—the portable that sells itself! The immediate and amazing success of the New-Rolls Phantom Five is proof of the big demand for a really efficient long range portable receiver which combines all the advantages of the elaborate indoor receiver with genuine portability. On actual test it has received at full loud speaker strength the complete evening programme direct from W.G.Y. Schenectady, N.Y., and also dozens of British and Continental Stations. It is light to carry and yet immensely strong and perfectly rigid. The demand for this new Rolls is breaking all Records, and moreover it has the lowest up-keep costs of any Portable Receiver!

In best quality hide attache case, Celestion loud speaker, complete with valves, Batteries and Marconi Royalties.

**£35**  
RETAIL

The Best Value ever offered in Radio.

# DETEX

Sole Distributing Agents for the Provinces, Scotland, Wales, Ireland, etc.  
**DETEX DISTRIBUTORS LTD., DETEX HOUSE,**  
125/129, Rosebery Avenue, London, E.C.1.  
Telephone: Clerkenwell 0133 and 0134. Telegrams: "Detexacrys, Smith, London."

# THE LAST WORD!

“GOOD NIGHT EVERYBODY  
GOOD NIGHT—

—DON'T  
FORGET

# EAST LONDON RUBBER CO.



**FOR  
EVERYTHING  
WIRELESS”**

**29-33 GREAT EASTERN  
STREET LONDON E.C.2**

Telephone: Bishopsgate 4321 (20 lines)  
Telegrams: “Akerene, Phone, London.”

Branch Depot: KERRY HOUSE,  
FURNIVAL ST., SHEFFIELD.

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## BAKELITE MOULDINGS OF ALL DESCRIPTIONS

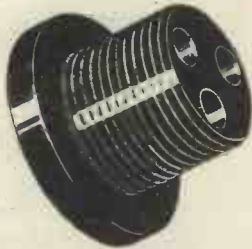
We manufacture Bakelite mouldings for all purposes — Electrical, Radio, and Bakelite mouldings for general use.

Every Bakelite moulding that leaves our factory is subjected to the most rigorous tests, and sent out perfectly designed and constructed, possessing all the properties essential to perfect insulation.

Only the best possible powder is used in the manufacture of S. & S.M. mouldings. For finish, reliability, permanence and general excellence they are unbeaten.

S. & S.M. Bakelite mouldings are made in all colours, and these colours are retained indefinitely.

All enquiries will be welcomed and attended to promptly.



## PERFECT BAKELITE



Solidite and Synthetic Mouldings Ltd.,  
Albion Works, North St., Clapham, London, S.W.4  
Telegrams: — Telephone: Battersea 5592-3.



1928  
de  
Luxe  
Model  
Halcyon

5-valve  
Set  
in  
Figured  
Walnut  
Cabinet

## THEIR NAME IS LEGION!

Every Halcyon owner is an enthusiast boasting that his set, without loss of range, gives him a far higher standard of reproduction than any other portable on the market. He who possesses the "De Luxe" Model, introduced at the B.I.F., and already in great demand, claims that his set, with its added refinement and increased range, is a work of art rather than a piece of mechanism.

There are Halcyon owners all over Britain—their name is Legion. Like all proud owners, they demonstrate their sets to their friends. Their friends are at once convinced of the justice of these claims and desire Halcyons too.

Every Halcyon sold means several more sales in the future. The demand is a snowball rolled by advertising, personal recommendation and far-sighted wireless dealers. These latter find their profits swelling in like manner, and with very little effort, for the Halcyon is as easy to sell as to operate—simply switch it on and it sells itself. Why miss this sure means of profitably increasing your business? Write now for full particulars and trade terms.

Two years' guarantee with each Set

PRICE COMPLETE including  
Full equipment Ball-bearing  
Turntable and Marconi  
Royalty **35**  
GNS

Please call, write or 'phone for full particulars to  
Dept. B

# Halcyon

PORTABLE WIRELESS RECEIVERS

"THE SETS THAT SELL THEMSELVES"

THE HALCYON WIRELESS CO., LTD  
110, KNIGHTSBRIDGE, LONDON, S.W.1

Telephone:—Slone 6236 & 7

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**"OF OUTSTANDING MERIT"**

—“The Broadcaster,” Feb., 1928.

**SUPER POWER TRANSFORMERS  
AND  
FILTER CHOKES  
FOR  
HIGH TENSION ELIMINATORS  
AND  
BATTERY CHARGERS.  
FULLY GUARANTEED FOR ONE YEAR.**

Trade  
Discount.



30  
per cent.

Regd. Trade Mark "Raderox."

**SUPER POWER TRANSFORMERS**

For Supplying H.T. Current up to 6 valves.  
I.P.1. 110 Volts 50 Cycles, 16/6 T.P.2. 220/240 Volts 50 Cycles, 17/-  
The Low Voltage Secondaries give 1.5A. at 6V. (centre tapped), whilst the High Voltage Secondaries range from 400V. (centre tapped) to 800V. (centre tapped), the maximum load being 30mA.

**FILTER CHOKES**

S.F.1. 50 Henries 30mA - 16/6 S.F.2. 20 Henries 30mA - 5/9

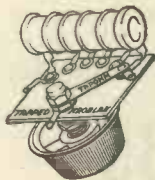
**TRANSFORMERS FOR BATTERY CHARGERS**

Charging current 2 amperes.



T.R.1. 110 Volts 40/60 Cycles, 16/6 T.R.2. 220/240 Volts 40/60 Cycles, 17/-

**"TAPOHM"**



Variable Wire Wound Tapped Resistance or Potential Divider. Specially designed for H.T. Eliminators. 30,000 ohms in five equal tapings for regulating Voltage output of H.T. Mains Supply Units. Total capacity, 10 watts.

6/9 each.

**SOME OPINIONS.**

THE BROADCASTER ELECTRICAL AND WIRELESS RETAILER, February, 1928.

"On test, we found the unit to be one of the most efficient that we have ever tested. Using the eliminator with a 5-valve receiver there was not the slightest hum whatsoever. The output voltage was sufficient for two power valves used in parallel where the current consumption was in the neighbourhood of 27 milliamps. The makers state that 30 milliamps may be passed with safety, but we exceeded this value for a considerable period without there being any apparent injury to the components. We also tested the eliminator in conjunction with a 7-valve super-heterodyne receiver, and even with this not the slightest hum could be heard, even when no transmission was being received.

"We cannot speak too highly of these components. They are the best commercial instruments that we have had before us. They are well made externally and also as efficient as can be desired. Dealers should not hesitate to get into touch with the suppliers, for the complete eliminator costs such a relatively moderate sum, and the results are so excellent, that they should find the kit a line of unusual sales merit."

DURHAM, FEBRUARY, 1928.

"We have now had your T.P.2 Transformer and S.F.1 Choke under test for about a month. They are incorporated in a three-valve set with plenty of power to spare and absolutely no hum."

Write for particulars of sets of parts for H.T. Eliminators and Battery Chargers, A.C. or D.C. Wiring diagrams free of charge.

Sole Distributors:

**THE WHOLESALE WIRELESS CO.,  
103, Farringdon Rd., London, E.C.1.**

**THE MOST  
EXPERIENCED  
RADIO MEN  
USE**

**BENJAMIN**

CLEARER TONE ANTI-MICROPHONIC

**VALVEHOLDERS**

**AS A  
MATTER  
OF COURSE**



Because Benjamin is the only Valve-holder that absorbs every quiver of vibration, eliminates every rustle of microphonic noise and combines these 5 essential features:

- (1) Valve sockets and springs are made in one piece with no joints or rivets to work loose and cause faulty connexions.
- (2) Valves are free to float in every direction.
- (3) Valves can be inserted and removed easily and safely.
- (4) Valve legs cannot possibly foul the baseboard.
- (5) Both terminals and soldering tags are provided.

**RETAIL PRICE 2/-  
EVERY RETAILER  
SHOULD STOCK THEM.**

**THE BENJAMIN ELECTRIC LTD.**

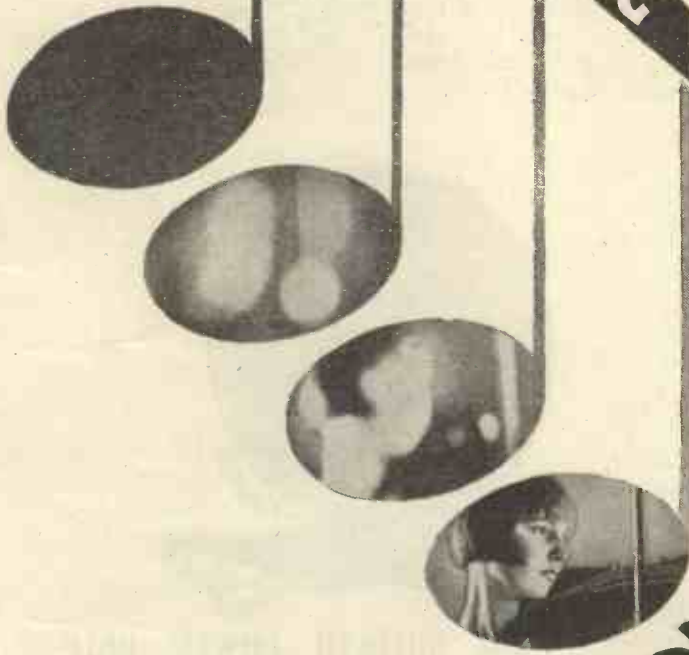
Brantwood Works,

TARIFF ROAD, TOTTENHAM, N.17.

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# THE M.P.A. CREATES SALES RECORDS

HEARING THAT IS ALMOST SEEING



Nothing in recent wireless history can compare with the sensational success of the new M.P.A. Plaque Speaker. It has become a saying amongst M.P.A. dealers—"When they hear it, they buy!" The makers are straining every effort to keep abreast of the enormous demand. Thousands of listeners in your district are ready prospects for this remarkable speaker with its wonderful sprung diaphragm and symphonic woods, which gives such amazingly real reproduction, and which costs only 29/6. Get the M.P.A. into your shop, show it in your windows, demonstrate it to every customer!

## ARE YOU ON OUR MAIL LIST?

To M.P.A. Wireless Limited (Dept. 14) 62 Conduit Street, London, W.1.  
 Please send me illustrations and full details of the new M.P.A. Plaque Loud-speaker, and add my name to your registers to receive your trade bulletins and special offers as and when they appear.

Name.....  
 Address.....

# TELEPHONE BERLINER (LONDON), LTD.

COLINDALE AVENUE, HENDON, N.W.9.

Telephone :

COLINDALE 6135.



**TEFAG CONE**  
**£3 : 19 : 6**

Mellow tone, volume and attractive appearance are three amongst many of this excellent speaker's selling points. The diaphragm is of golden brown.



**TEFAG CORONET**  
**£1 : 15 : 0**

The peculiar horn design of this model admits of very powerful volume and a full, rich tone. High grade, quality finish.



**TEFAG BABY**  
**15/-**

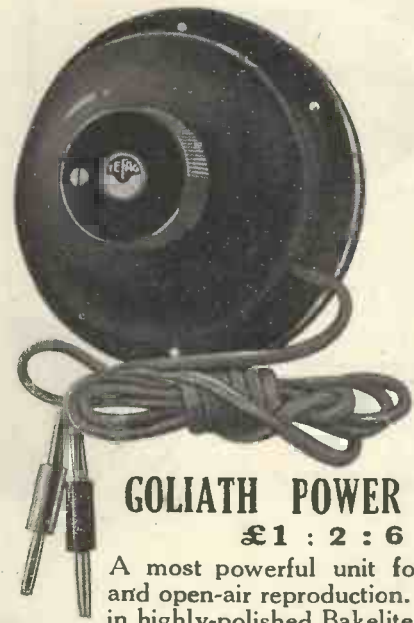
A "Baby" only in size. There is no better speaker selling at double the price.



**TEFAG SUPER**  
**£3 : 17 : 6**

A user wrote :— "I have never known greater volume combined with such purity of reproduction, and I have tried other higher-priced speakers." A worthy demonstration-speaker.

Samples sent to responsible traders on application



**GOLIATH POWER UNIT**  
**£1 : 2 : 6**

A most powerful unit for concert and open-air reproduction. Finished in highly-polished Bakelite.

**NO BETTER VALUE EXISTS IN THE WORLD.**

The foremost name



in foreign radio.

All goods sold by Telephone to be the

Berliner, Ltd., are guaranteed products of

**TELEPHONFABRIK BERLINER, A.G., BERLIN.**

WHEN REPLYING TO ADVERTISEMENTS PLEASE MENTION "THE BROADCASTER."



*In the air On the ground  
At a glance - Houghtons found!*



BRITISH MUSEUM STATION C. L. Ry.

THEOBALD'S ROAD. Buses and trams from Highbury, Tooting, Victoria, Walthamstow, and East London.

SOUTHAMPTON ROW. Buses from Chalk Farm, Victoria, Tooting, Norwood, Raynes Park, S. Croydon.

HIGH HOLBORN Buses running East and West—13 Services

HOLBORN STATION Piccadilly Line.

KINGSWAY. Buses to Southampton Row.

HOUGHTONS

CHANCERY LANE STATION. Central London Railway.

LINCOLN'S INN FIELDS

GRAY'S INN ROAD. Buses and trams from London Bridge, Clapham Common, Acton, King's Cross, Willesden, and North and East London.

# HOUGHTONS

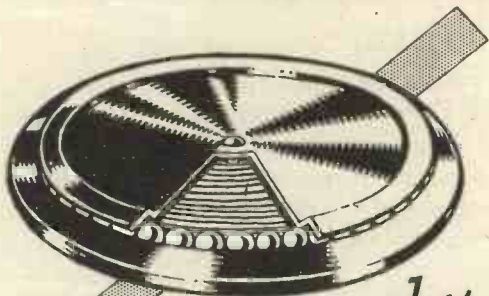
*The National Wholesalers*

HIGH HOLBORN, LONDON, W.C.1.

Make HOUGHTONS Trade Counter Yours!

## 33 1/3 PROFIT—AND QUICK SALES TOO!

### The 'Selector' Turntable for Portable Sets.



*Selling by the Hundred!*

**Retail Price  
12/6**

**〔33 1/3 off the Selling Price for the Dealer〕**

Here is a line that sells quickly because it offers splendid value for money and is sold in an attractive box to make a good counter display. The turntable is made of polished aluminium, has a smooth ball-bearing movement and is fitted to any set in a moment or two by means of three ordinary screws. It is practically invisible when fixed and enables the set to be swung round easily in order to obtain the maximum advantage of directional tuning.

Send your first order to-day and you will find you need further supply in a very short time.

Act NOW. Fill in the coupon below.

To Selectors Ltd., 1, Dover Street, London, W.1.

Please supply at once

....."SELECTOR" TURNTABLES. Price 12/6 each  
Less 33 1/3% as advertised in "Broadcaster" April.

Name .....

Address .....

**SELECTORS LTD., 1, Dover St., Piccadilly, London, W.1.**

# HENDERSON RECEIVERS



## The PEDESTAL MODEL

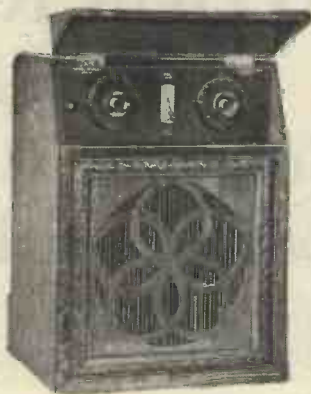
Comprises a five-valve self-contained receiver mounted on a mahogany pedestal of distinctive appearance and design. No aerial or earth are required, while a turntable enables the receiver to be turned in any direction without moving the pedestal. The pedestal stands approximately 3 feet high.

□ □ □  
**£35** INCLUDING ROYALTIES.

*Both models are capable of pure reproduction with volume :: anywhere in England ::*

## The PORTABLE

The Henderson portable, already remarkably popular, carries a guarantee for two years—the result of two vital factors—first class components and workmanship. The following are some of the components used in its construction: Dubilier Grid Leaks, Ferranti Transformers, G.E.C. Variable Condensers, T.C.C. Fixed Condensers, R.I. & Varley Anode Resistance, Celestion Loud Speaker, &c., &c.



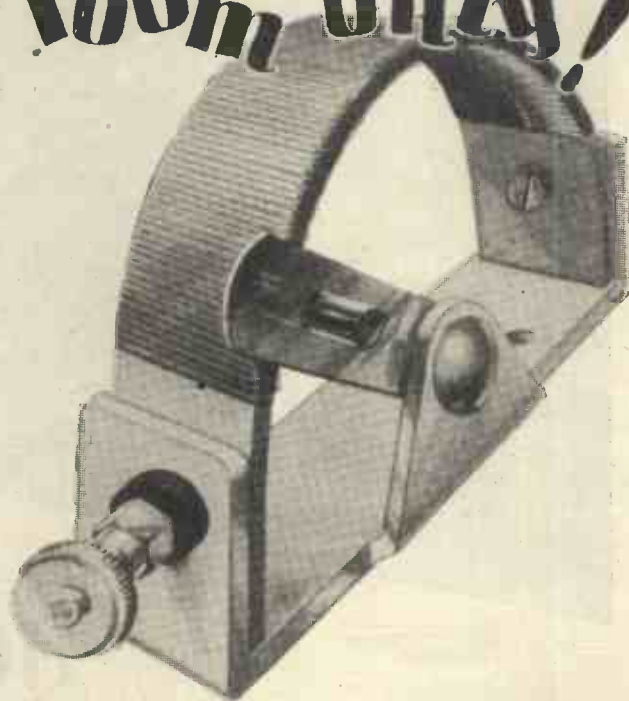
**£30** INCLUDING ROYALTIES. Weight 30 lbs.

*Both sets are subject to liberal discounts.*

*Full particulars and trade terms from:*

**W. J. HENDERSON & CO., LTD.**  
351, FULHAM RD., LONDON S.W.10.  
Telephone - - - - - Kensington 8983.

# Standing room only!



However crowded the baseboard there is room for a "Peerless" Varistor. For the Varistor stands up—clears complicated wiring and offers its arm for easy setting.

Each "Varistor" is wound with the best resistance wire and is fitted with a Phosphor Bronze adjustable arm. Terminals are fixed in the most convenient positions. There is a resistance to suit each type of valve—3, 6, 10, 15 and 20 ohms.

*Then fit*  
**PEERLESS  
VARISTOR**

*Order a full range to-day! Full particulars and terms from:*

**The Bedford Electrical & Radio Co. Ltd.**  
22, Campbell Road, Bedford.  
LONDON: 21 Bartlett's Bldgs., Holborn Circus, E.C.4  
GLASGOW: 113, St. Vincent Street, C.2

**1/3**

WHEN REPLYING TO ADVERTISEMENTS PLEASE MENTION "THE BROADCASTER."



For  
**PORTABLE  
SET USERS!**

**A NEW AND  
BETTER VALVE**

In neutralised and stabilised High Frequency Amplifiers the new H.L. 210 OSRAM VALVE gives a more sensitive response to weak signals from distant stations.

The ideal valve for Portable Sets where only a small frame aerial is used. Gives maximum volume with minimum number of valves.

Its characteristics allow it to be used as a grid leak detector for sensitivity, or as an anode bend detector for highest quality reproduction.

Also used in the first stage of low frequency amplification, and ideal for choke coupled amplifiers.

Write for full particulars.  
**Made in England**



**Characteristics**

Filament Volts : 2.0 max.  
 Filament Current : 0.1 amps.  
 Amplification Factor : 15.  
 Impedance : 25,000 ohms.

**PRICE  
10/6**

**Osram  
Valves**

**ALL YOU NEED  
TO KEEP YOUR  
STOCKS UP  
TO DATE -**

*Not a vast unwieldy book  
Not a complicated jumble*

But 150 pages of illustrations, etc. Prices of the types of Radio Receivers and Components that you want to sell. Will you send a card for it? Many dealers have been kind enough to say that L.E.S. Service is the most reliable they have experienced. See for yourself that that is true on your next rush order.



**LONDON ELECTRIC STORES Ltd.,**  
9, St. Martin's Street, Leicester Square.  
London, W.C.2.

## The Runnymede Two-valve Junior

This is a new Runnymede Model housed in a neat and attractive cabinet. It will give every satisfaction to the most critical user.

Complete with Royalties paid.

**£10**

**DISTANCE  
—VOLUME  
—PURITY**

A three-valve model at a slightly higher price is also made.

Full particulars of our Hire Purchase Scheme on these receivers, and also Amplions and Celestion Loud Speakers, will be sent on application.

*Keep an eye on our future announcements for details of our other new products.*

**RUNNYMEDE** ENGINEERING AND ELECTRICAL COMPANY,  
Dacre House, Victoria St., London, S.W.1.

Telephone: Victoria 2346.

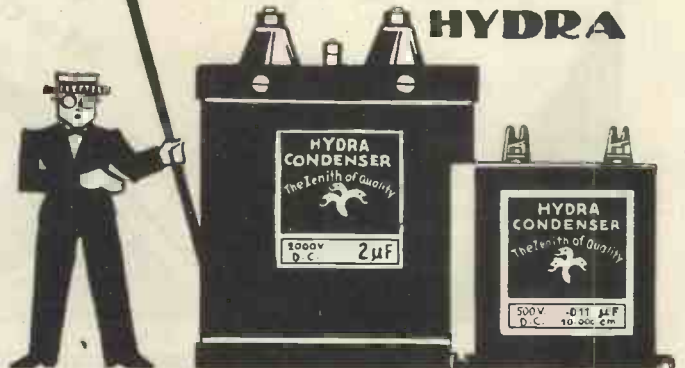
"POPULAR RADIO" (U.S.A.), Sept 1927.  
In order to secure long life from the paper condensers used in an assembly, the condensers employed should be of a working voltage rating that is ample for the work to be done.

## A TIP FROM U.S.A.

All Hydra Condensers are tested on a working voltage which allows very wide margin of safety. For instance: Hydra Eliminator Condensers are tested at 750 d.c. are for 375 working voltage. That gives a margin of 150 to 175 volts on the mains supply. Tested on 500 v. A.C. equalling 750 v. D.C.  
1 mf. 3/-, 2 mf. 4/-, 4 mf. 6/9

Take the tip and fit

**HYDRA**



LOUIS HOLZMAN, 34, Kingsway, London, W.C.2.

Phone: Holborn 6209.

WHEN REPLYING TO ADVERTISEMENTS PLEASE MENTION "THE BROADCASTER."

# FERRANTI

## RADIO PRODUCTS



Fixed Condenser Type C1, Capacity 2 MF, Tested 1000 volts DC, for smoothing circuits of Battery Eliminators and Receivers.



Fixed Condenser Type C2, Capacity 2 MF, Tested 500 volts DC, for smoothing circuits of Battery Eliminators and Receivers.



Push Pull Transformers, Audio Frequency, Types AF3c, AF4c, AF5c, and output types OP3c, OP4c, OP6c.



AF3, AF4 and AF5 Audio Frequency Transformers, for L.F. amplification.



Single Range, Projecting Pattern Radio Meter, for Panel Mounting, Type R1Pa. Accuracy at any part of the range is within 1%.



SPEAKER. With a tone conduit of true exponential shape.



Single range, Flush Type Radio Meter, for Panel Mounting, Type R1Fa. Accuracy at any part of the range is within 1%.



Three Range, Portable Radio Meters, with and without switch, Type PR3a. Accuracy at any part of the range is within 1%.



Three Range, Flush Pattern Radio Meter, with switch, for Panel Mounting, Type R3Fa. Accuracy at any part of the range is within 1%.



FIXED RESISTANCE for Battery Eliminators.



Permanent Trickle Charger, incorporating a Ferranti Transformer and the Westinghouse Patent Metal Rectifier. For charging L.T. Accumulators at home. Consumes 1 unit in 100 hours.



OUTPUT TRANSFORMER. Types OP1 and OP2.



Chokes Types, B1, B2 and B3, for use in the smoothing circuits of Battery Eliminators

**FERRANTI—HOLLINWOOD—LANCASHIRE**

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# "U.K.R.S.A"

UNITED KINGDOM RETAIL SHOPKEEPERS' ASSOCIATION

WE SUPPLY THE RIGHT GOODS at the RIGHT PRICES

## DRY BATTERIES

British Made at our own Works		nett
"REGAL" H.T.	66 volts	4/9 each
"	" 108 volts	8/- "
"	Grid. 9 volts	10d. "
Continental Make		nett
"ROBOT" H.T.	60 volts	4/3 each
"	" 100 volts	7/6 "
"	Flash Lamp Batteries 4½ volts	25/- per 100

All makes of Dry Batteries supplied.

Batteries made at our own works to suit Portable sets, etc.

## COPPER WIRES

Square tinned Copper Wire in 2ft. lengths, 16 or 18 S.W.G	
56 lb. lots	1/- lb nett
28 lb. lots	1½ lb. "
14 lb. lots	1 lb. "
7 lb. lots	1½ lb. "
Red and Black Flex 14/36	9/- gross yds.
" " 12/36	8/6 " "
Double Cotton Covered Copper Wire in ¼ lb. reels	
S.W.G. 20	1/6 lb. S.W.G. 26...2/1 lb.
" " 22	1/7½ lb. " " 28...2/4
" " 24	1/10½ " " 30...2/8

Quotations for Copper Wires of every description Deliveries 2/3 weeks

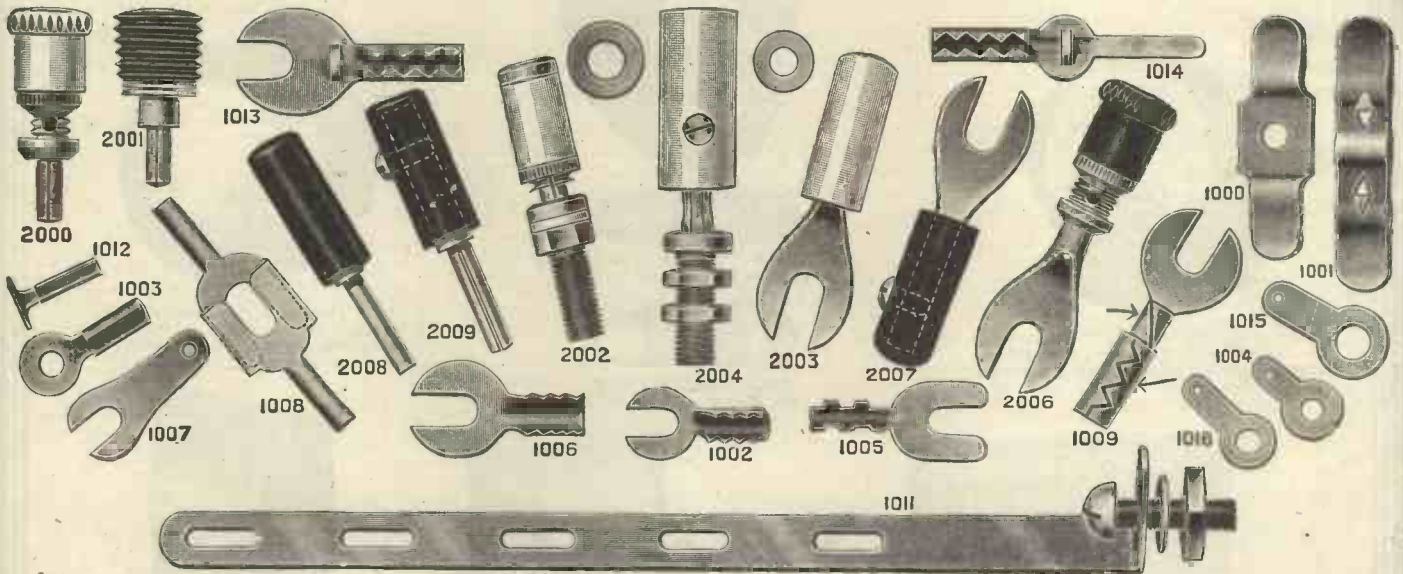
Special nett prices for Members and all goods sent Carriage Paid

Write for particulars of Membership

address all communications to **115, Camberwell Rd., Camberwell, S.E.5**  
Head Office:

Works & Stores: **56, Coleman Road, Camberwell, S.E.5** Telephone: Rodney 2716

## TURNED SPECIAL PARTS TO SAMPLE OR SKETCH.



Also:  
BRASS and N.P.  
TURNED TERMINALS,  
PLUGS and SOCKETS,  
SHORTING PLUGS, Etc.

## E. J. FRANCOIS

89, CLERKENWELL RD., LONDON, E.C.1  
Phone: HOLBORN 6055. Grams: "NOŠAMFRAN, HOLB., LONDON."  
Code: ABC 5TH EDITION.

Also:  
BRASS and N.P.  
TURNED SCREWS,  
NUTS AND WASHERS,  
2, 4, 5, 6, 8 B.A.

ALWAYS IN STOCK FOR IMMEDIATE DISPATCH

WHEN REPLYING TO ADVERTISEMENTS PLEASE MENTION "THE BROADCASTER."

# SALES ARE CLIMBING STEADILY FOR THESE FINE WIRELESS RECEIVERS

The new six valve Freed-Eisemann Neutrodyne receiver is advancing rapidly in the public favour. Every week sees the number of enquiries from our press advertisements growing steadily, and it is our practice to pass all these enquiries on to the trade.

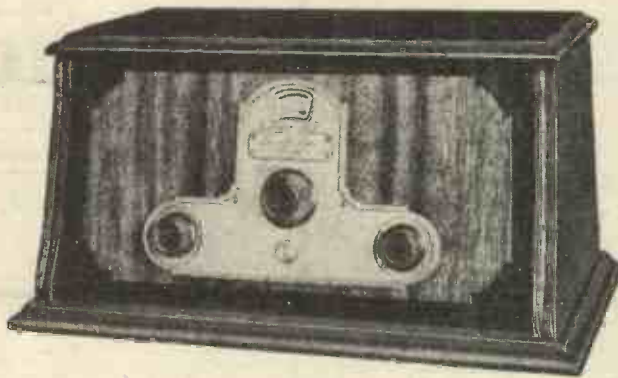
The Freed-Eisemann is unique among radio receivers. Forty or fifty European stations are obtainable in pure tone at full loud-speaker strength anywhere in the country. The stations slide in and slide out as the single tuning control is rotated.

The Neutrodyne circuit—for which Freed-Eisemann paid over £100,000 in Royalties last year—ensures that the set cannot possibly oscillate, shriek or howl. The remarkable selectivity is due to the new and exclusive feature the Freed-Eisemann Inductor which also provides for the first time equal amplification on all wave lengths.

## NEW CONSTRUCTION FEATURES

1. New Telephone Switchboard Type Wiring.
2. New 100% Safety Factor in design of all moving parts.
3. New Oversize Accurate Bearings on all controls insuring rigidity.
4. New Drive System of Tuning Controls giving velvet - smooth operation.
5. Rigid inspection after every step in construction.
6. New Service - proof Volume Control with Automatic Switch.
7. New Freed-Eisemann "Inductor," an exclusive feature which, for the first time, provides equal amplification on all wave lengths.
8. A new High Standard of Selectivity.

Freed-Eisemann sets are designed for music lovers who have discriminating taste for tone quality, and who desire to select their music from the most attractive items in the European programmes. The price is kept as low as the highest standard of quality will permit.



N.R. 9.

*You are invited to write for full particulars of the Freed-Eisemann sets together with trade terms and all necessary information.*

'Phone: Gerrard 6804

## THE FAMOUS N.R.

### 9 SIX VALVE NEUTRODYNE

complete with high wave attachment is reduced from

**£37.5**

to

**£25**

(inclusive of Royalties.)

Write for particulars by return. It is fitted in a beautiful drop-lid Mahogany Cabinet and is the most wonderful value on the market.

Remember  
**FREED-EISEMANN**  
give large discounts

# FREED-EISEMANN

RADIO OF GREAT BRITAIN, LTD., 91, REGENT STREET, LONDON, W.1.

WHEN REPLYING TO ADVERTISEMENTS PLEASE MENTION "THE BROADCASTER."

# MILLET *for* METERS

These Instruments are made under a new patent and have Electro-Magnetic Movement, and are fitted with a resistance and a new mechanism which does not injure even if the H.T. voltage is accidentally connected to the L.T. terminals. They are Deadbeat, and the consumption is only 5 milliamps on 120 volts.

Write for particulars of our full range. Wholesale only.

**J. MILLET, 39 FARRINGTON RD., LONDON, E.C.1**

'Phone: Holborn 0293

'Grams: Alembic, Smith, London.

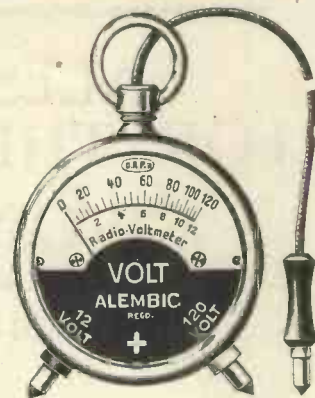
## "ALEMBIC"

TYPE M3.

0 - 12 VOLT AND  
120 VOLT COMBINED.

PRICE 7/6d.

Subject to Trade Discount.



**Sorry, Sir** — but we haven't received it yet!

Ignominious omission! How often do you apologise for the non-delivery of some out-of-stock component? And why should you apologise when the Murdoch Trading Co. is ready to give you delivery of practically any popular wireless part by return?

Murdoch's stock of wireless goods is comprehensive. Their service is intelligent and their delivery swift. You can trade in confidence with them. Will you make a start by writing for the new edition of their catalogue?

Don't apologise—wire, write or 'phone:  
**MURDOCH TRADING COMPANY**

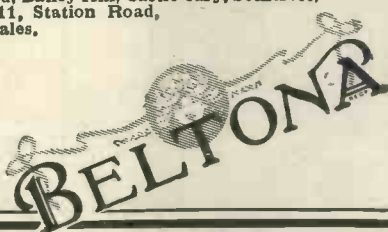
(Incorporated with John G. Murdoch & Co., Ltd.)

ACCREDITED WIRELESS WHOLESALERS,  
59-61, CLERKENWELL ROAD, LONDON, E.C.1.

Telephone: Clerkenwell 6144-5. Telegrams: "Puttel-Smith, London."

And Branches at

38, Charles Street, Cardiff; 77-79, Dunlop Street, Glasgow;  
64, Edgbaston St., Birmingham; 24, Eldon Square, Newcastle-on-Tyne;  
Francis's Yard, Bailey Hill, Castle Cary, Somerset;  
Prudential Buildings, 11, Station Road, Colwyn Bay, North Wales.



## SHEETS and PANELS

**E** S.L. GRADE Smooth Finish.  
**B** REGAL Polished one and both sides. Free from Surface Leakage. High Dielectric Strength. Cuts and machines easily.  
**O**  
**N**  
**I** Send for copy of tests made by National Physical Laboratory and convince yourself that these qualities are the BEST for  
**T**  
**E**

### RADIO WORK

**ESSELLITE** Connecting Wire and Genuine Original **SISTOFLEX** Slewing

Very generous terms to large users.

Varnished Silk, Cloth and Paper Tapes, Insulating Tapes, Brown, Black and Mottled Bakelite Moulded Articles.

Wholesale only:

# SPICERS

LIMITED

Insulation and Wireless Dept.,

19, NEW BRIDGE ST., LONDON, E.C.4.

Telephone: City 6251.  
Pie. Exchange: Ex 49.

Telegrams: "Nykoping,"  
Lud, London.

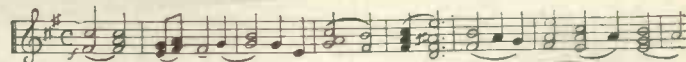
## WAVERLEY

Portable Broadcast Receivers

Still leading for  
quality of reception

Sole Agents: South Africa: Charles Westwood & Co., Conner Main and End Streets, Johannesburg.  
France: Messrs. Constable et Cie, 69, Rue de Morceau, Paris 8.

**CECIL SHARP, Sole Distributor,**  
Riv. 2648. 188 Blythe Road, W.14

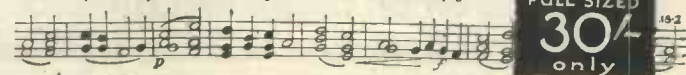


# Orphean

## "GEM"

British Made

The "Gem" is such a handsome Speaker with its chocolate finish that it will soon attract a crowd. When they see the price, people will hardly believe that such a fine instrument can be sold at 30/-. When they hear it, they'll be amazed—and buy. The Trade terms make it well worth handling. Send for illustrated list. **THE LONDON RADIO MFG. CO., LTD.** Head Office & Works: Station Road, Merton Abbey, London, S.W.19. Telephone: Wimbledon 4658

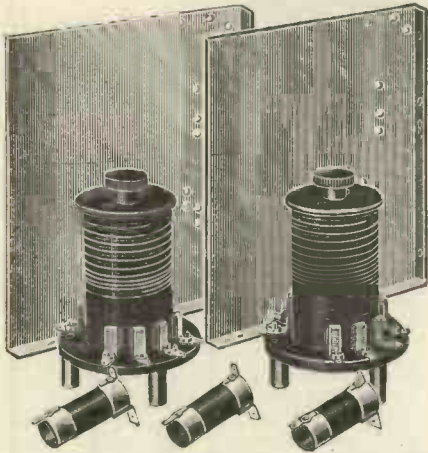


FULL SIZED  
**30/-**  
only

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# This new development affects YOU



Short-Wave H.F. amplification—the latest Igranic achievement — has really got people talking. Australia on the loudspeaker! Who would not be thrilled? Never before has the post brought so many enquiries.


Where it affects you is that everybody is *buying*. Do something now to get your share of the business.

## The Igranic Neutro-Regenerative Short-Wave Receiver

is supplied in kit form with detailed instructions to enable anyone to make a super three-valve short-wave receiver. Feature the kit and a complete receiver in your window. It will draw a crowd and mark you as the man who can supply this wonder short-wave set in your neighbourhood.

Kit, as illustrated, with Transformers, for 15-40 metres. Price £2 - 5  
 Two additional Transformers for 30-70 metres. Price 19s. per pair  
 The remaining parts required to complete the receiver are standard Igranic Radio Devices.





### Igranic Short-Wave Coils

There are many existing sets of the detector and low frequency amplifier type which can be easily converted to short-wave reception by merely replacing the broadcast coils with Igranic Short Wave Coils.

While not giving the efficiency of the Igranic Neutro-Regenerative Short-Wave Receiver, such an arrangement is very satisfactory owing to the remarkable efficiency of Igranic Short-Wave Coils. They embody every feature essential in a perfect short-wave coil.

2 turns	Price	2/6
4 " "		2/9
6 " "		3/-
9 " "		3/3

Write for List No. J511 for full particulars.

149, Queen Victoria St.,  
 LONDON, E.C.4



Works :  
 BEDFORD

Branches: Manchester, Birmingham, Newcastle, Cardiff, Bristol, Glasgow, Leeds.

WHEN REPLYING TO ADVERTISEMENTS PLEASE MENTION "THE BROADCASTER."

# 'MERCO'

**MOVING COIL  
LOUD-SPEAKER**



*For High Quality and  
Lifelike Reception.*

**SOLD IN PARTS  
READY FOR ASSEMBLY**

Leaflet supplied with each set of parts enables speaker to be assembled with absolute simplicity

**RETAIL PRICES:**

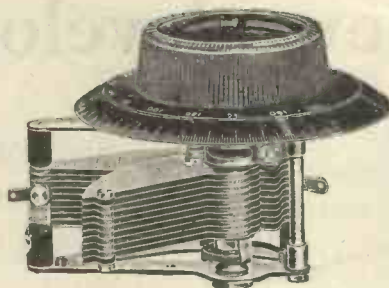
220 volts £6 10 0      6-8 volts £6 0 0  
Other Voltages, Prices on application.

Write for leaflet and full information.

**MIDLAND ELECTRICAL REPAIRS**

202c, ASTON ROAD, BIRMINGHAM.

## THIS CONCERNS YOU

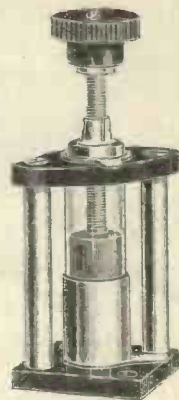


J.B. S.L.F.

The successful trader is he who is skilful in buying products which sell easily and quickly, and which, by virtue of their quality, satisfy customers and so establish a lasting confidence.

In the Radio Industry this is sometimes difficult to achieve, but, at least as far as condensers are concerned, there is one name that stands out as a symbol of High Quality. That name is J.B.

J.B. products have brought prestige and satisfied customers to thousands of traders. Are you numbered among them?



J.B. Neutralising



Non-Hygroscopic.

High Tension.

## INSULATING TUBES, CYLINDERS BOBBINS & SHEETS

*PROMPT DELIVERIES and  
MODERATE PRICES.*

# "BAKOLIN"

A Super Grade Bakelized Product.

**HIGH TENSION BAKELIZED PRODUCTS, Ltd.**

49, Moor Lane, London, E.C. 2.

Telephone: Clerkenwell 0975

## LOEWE RADIO

The Famous

**LOEWE** High Vacuum  
Resistances  
and  
**LOEWE** High Vacuum  
Block Condensers



Should be installed in every wireless receiving set.

They are  
Free from atmospheric influences.  
Moisture and dust-proof.  
Free from losses.  
Fully guaranteed.

Delivery from stock.

Ask for illustrated leaflet.

**LOEWE RADIO COMPANY LIMITED,**

4, Fountayne Road,  
Tottenham, London, N.15.

Telephone: Tottenham 2076.

# Does the Power Station keep your set going?



Does it supply you with music as well as light and other home comforts?



With the Met-Vick 5 Mains Set this is now possible. It is just plugged into a lamp socket or wall plug and switched on, like any other Electric Appliance, and all the little annoyances of accumulators that *will* run down, and H.T. batteries that cost so much and last such a short time, trouble you no more.

Inherently better than a battery operated set, the reproduction is so near perfection that to ask for more is hypercritical. Selectivity and range are outstanding features, and the controls, while quite simple to use, do respond to that little extra skill of the sympathetic operator which is so delightful.

With the Met-Vick 5 it is at last possible to obtain a wireless receiving set which will always give the satisfaction that only comes from really brilliant performance, and which will remain a constant source of pleasure and interest to all who hear it.

Send for a supply of Brochure 7117/9

## MET-VICK

SETS, VALVES & COMPONENTS

\* \* \*

**METRO-VICK SUPPLIES LIMITED,**  
155, CHARING CROSS ROAD, LONDON, W.C.2.

R  
Z133.

WHEN REPLYING TO ADVERTISEMENTS PLEASE MENTION THE "BROADCASTER."

# Dr. NESPER

*Gives you another opportunity*



N. 21.

£1 : 7 : 6

Parabol Type. Height 15 in.  
Diameter of face 11½ in.  
Polished Copper Bronze Finish.



## DR. NESPER H.T. BATTERY

60-volt - - 4/6 nett  
100-volt - - 7/9 ,,

Pocket Lamp Batteries, 4½-volt,  
25/- per 100 [nett.

GRID BIAS. 9-volt - - 11d. each



N. 151. £1 : 4 : 6  
Polished Copper Bronze  
Finish.  
Height 13 in. Flare 9½ in.



N. 61.  
£1 : 17 : 6  
Polished  
Copper  
Bronze  
Finish.  
Height 21 in.  
Flare 14 in.

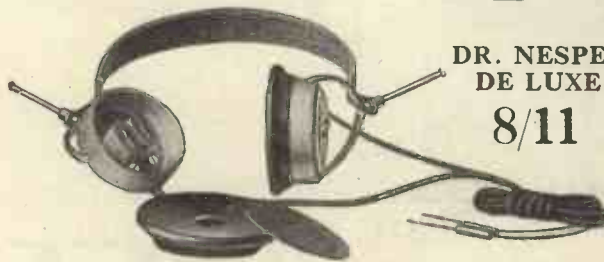


12/6

Dr. Nesper ADJUSTABLE  
Also  
NON-ADJUSTABLE  
Price 8/11

ALL SPEAKERS AND  
HEADPHONES ARE  
SUBJECT TO VERY  
LIBERAL DISCOUNTS

BATTERIES NETT TRADE PRICES.



DR. NESPER  
DE LUXE  
8/11



N. 91.  
£1 : 2 : 6  
Black-frosted Neck and Stand.  
Polished Black Enamelled Flare.  
Height 14 in. Flare 10 in.

# DR. NESPER, LTD.

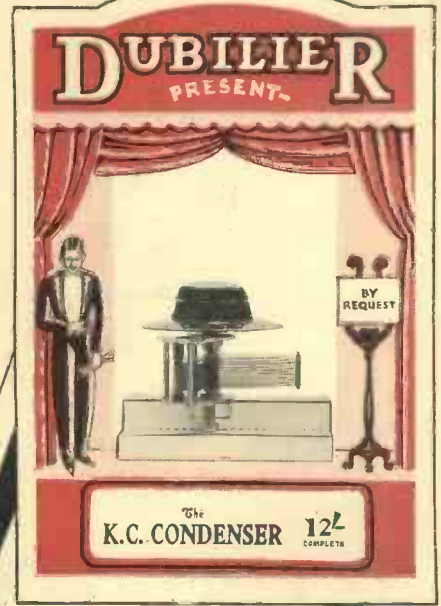
COLINDALE AVENUE,  
HENDON, N.W.9

'Phone : Colindale 6135.



# Many will admire your window display

Every dealer appreciates the potency of appeal which his shop window provides—dressed attractively it compels the passer-by to pause and inspect its contents: which is a decided step towards enticing him inside the shop, either to enquire or to examine, but at any rate as a potential customer. As an aid to dealers' sales of their products, the Dubilier Condenser Co. have produced two very fine showcards in colours, which are here reproduced. Exhibited in your window, they will add distinction to your display and attract favourable notice.



Send for them now and they will be despatched to you carefully packed and post paid.

The showcard reproduced above is beautifully printed in five colours and strikes a happy note. Attached to it is a fixable strut and a tag loop, by means of which it can be stood in your window or on your counter, or hung up in your shop as desired.



The Cut-out Showcard reproduced above is in the form of a stage on which all Dubilier products can be displayed in turn with a tag bearing the respective name and price inserted in the slot below the stage. Rigid when fixed. Printed tags are supplied.

Adv. of the Dubilier Condenser Co. (1925) Ltd., Ducon Works, Victoria Road, North Acton, W.3.  
 WHEN REPLYING TO ADVERTISEMENTS PLEASE MENTION "THE BROADCASTER."



1928



1927



1926

1925

1924

*And now—the new “Rolls”*

## “PHANTOM FIVE”

Letters of praise on our supreme new model, “PHANTOM V,” continue to pour in on us. Regal homes, suburban villas, public institutions, the stage, the screen, all are enthralled by “PHANTOM V’s” amazing powers of reproduction, its wonderful range, simplicity of control and its portability—weight under 28 lbs.

Only years of experience could produce such an astoundingly efficient portable, and as pioneers of portable radio, we can justly claim to have the most experienced and the most advanced technique incorporated in this new wonder model.

*The comparative diagram shown on left indicates the phenomenal increase in “Rolls” sales since inception. Note particularly the huge increase since the advent of the “Phantom V.”*

### HOARE & JAGELS Ltd.

28 & 29, Great Sutton Street, E.C.1

Telephone :

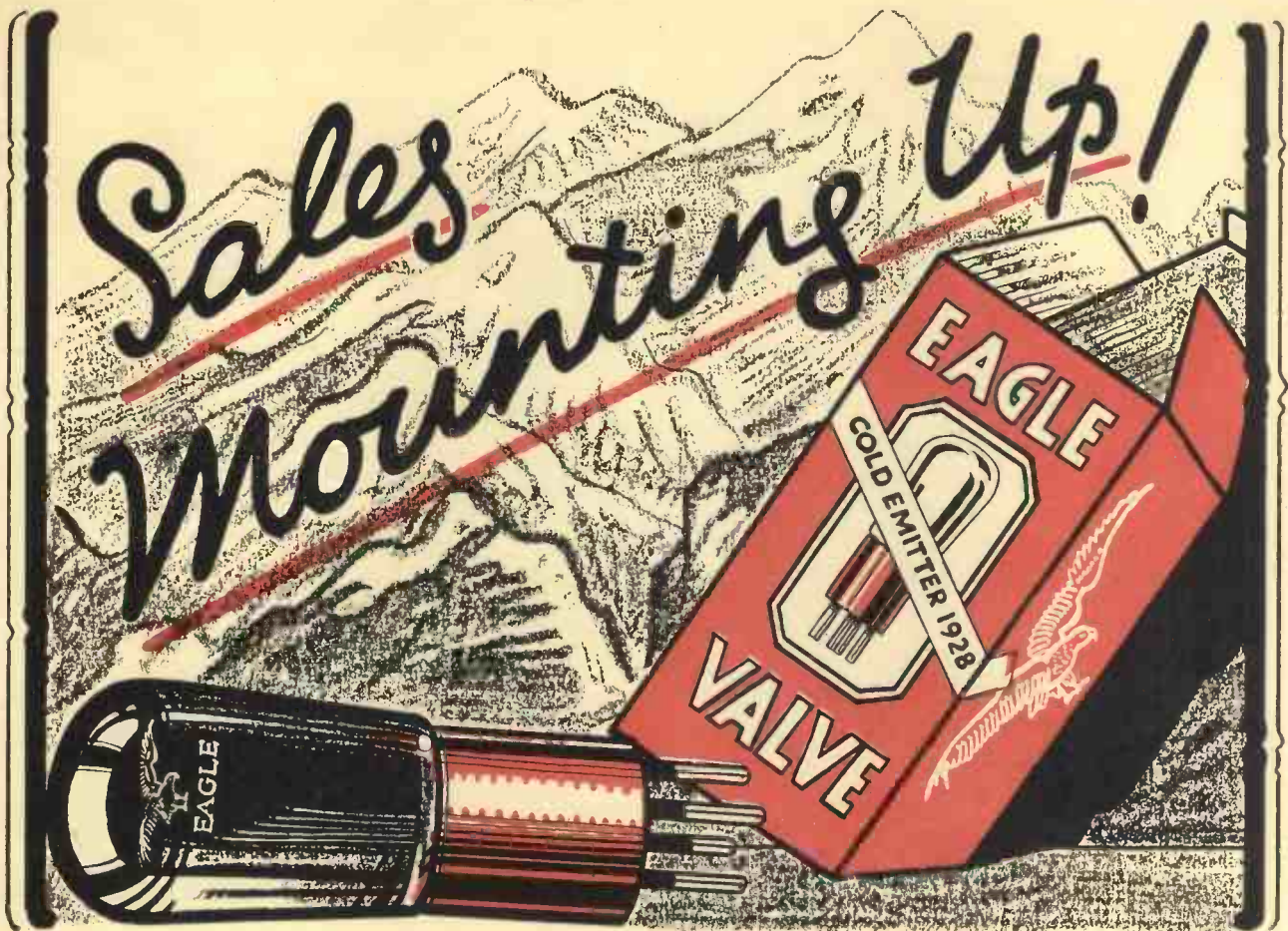
Clerkenwell 8393.

The  
NEW 5V.  
**Rolls**

**£35**  
Retail, including  
Marconi  
Royalty

Write for full details and free illustrated literature without delay.

Detex Distributors Ltd., 125/9, Rosebery Avenue, E.C.1  
Sole Distributors for the Provinces, Scotland, Ireland and Wales.



The High Quality and Low Price of the  
NEW 1928 TYPE

# EAGLE VALVE

COLD EMITTER

is responsible for Sales Mounting Up.

*Samples of all types including R.C. supplied on request.*

LIBERAL TRADE TERMS.

---

## EAGLE VALVES LIMITED

47, FARRINGDON ROAD, LONDON, E.C.1

Telephone: HOLBORN 0622.

---

WHEN REPLYING TO ADVERTISEMENTS PLEASE MENTION "THE BROADCASTER."

# SIX-SIXTY



**NO VALVE  
LIKE IT**

## BALANCE

Everything depends upon getting the Valves in a wireless set to pull together.

You would not suddenly put Jack Hobbs, excellent cricketer though he be, into the Cambridge boat and expect him to pull stroke.

Why then sell an assortment of valves of different makes for a set and expect them to give balanced reproduction?

It is balance first and balance every time that is required amongst valves. That is why you should recommend your customers always to buy SIX-SIXTY Valves for every circuit.

*All types and voltages,  
from* **10/6**

**SIX-SIXTY  
GLOWLESS VALVES**

**THE ELECTRON CO., LTD.,  
122-124, Charing Cross Road, London, W.C.2.**

*Telephone: Regent 5336.*

WHEN REPLYING TO ADVERTISEMENTS PLEASE MENTION "THE BROADCASTER."



*A British Triumph!*

“**THE K.N.**”

GOES  
ROUND  
CORNERS

# Electric Soldering Iron

## THEY WILL ASK FOR IT BECAUSE

*It is years ahead of all others*

Every Progressive Wireless and Electrical dealer should get ready to meet the demand for the “K.N.” Soldering Iron. It is a ready seller and shows a handsome profit. Furthermore, its low price puts it well within the reach of everybody. A customer has only to handle a “K.N.” and it is as good as sold.

The following points explain its pre-eminence:—

1. It is most scientifically designed.
2. Beautifully finished—all brass work is nickel-plated and the wood work ebonised (giving it an artistic finish).
3. An unique angle bit (goes round corners) is presented with each “K.N.” in addition to the ordinary straight one.
4. The Element is genuine Steatite (the only really efficient one).
5. The Resistance Wire used is the best and purest on Earth.
6. There is an unique recess on the shank to keep the Element immovable.
7. Each turn of wire on the Element lies in a separate cavity which renders “fusing” impossible.
8. The shank or container is in one single piece. The patent adaptors are made of special insulating material.
9. The handle is fitted with a strong nickel-plated spring wire flex guard.
10. Every part is thoroughly examined and tested before leaving the Factory, and each “K.N.” is sent out accompanied by a printed form of Guarantee for one year.
11. Every part of the “K.N.” is removable and replaceable. Price List of Spare Parts and Renewals accompanies each “K.N.”
12. Can be used on A. C. or D. C.

**GUARANTEED FOR ONE YEAR**

RETAIL PRICE ONLY

**12/6**

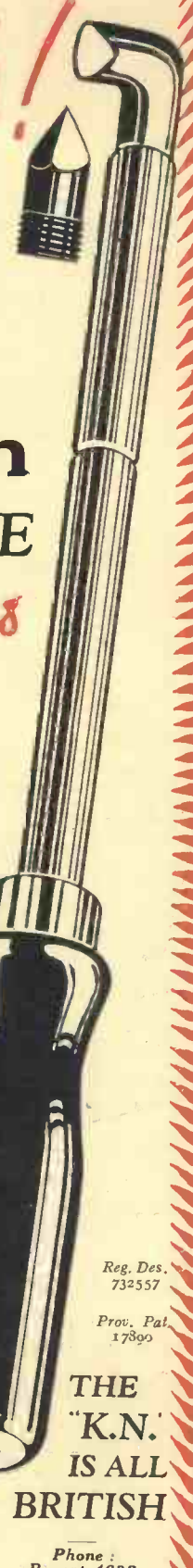
Complete with 2 bits (straight and angle) & 5ft. flex and patent Lamp Socket Adaptor.

**AGENTS WANTED  
THROUGHOUT THE WORLD**

Write us now for literature and particulars of generous Trade Terms.

Sole  
Manufacturers  
and Patentees:

**KNOWLES & SON,** 87, Wardour Street,  
Oxford St., London, W.1



Reg. Des.  
732557

Prov. Pat.  
17390

**THE  
“K.N.”  
IS ALL  
BRITISH**

Phone:  
Regent 4632.

# These batteries sell in Millions

The  
**100%  
Battery**

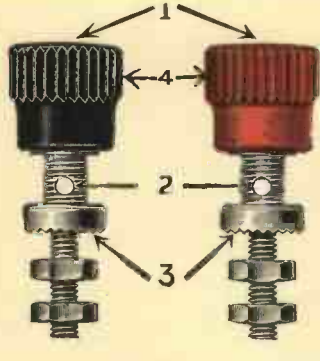
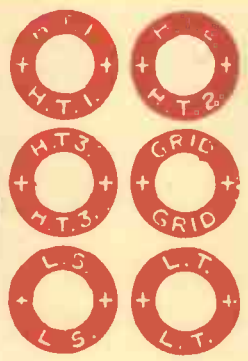


## Columbia

Columbia Dry Batteries are made by the world's largest Battery manufacturers, and in the course of a year millions are sold. Columbia Batteries are world famous. Wherever the best in radio is demanded there you will find Columbia. And what are the reasons? Quality and Lasting Power. Columbia Batteries last much longer than any other Dry Battery obtainable, and that, as you know, is the greatest selling point that any battery can possess.

*Send for descriptive literature and display material.*

**J. R. MORRIS, 15, Kingsway, London, W.C.2**  
Scotland: J. T. CARTWRIGHT, 3, Cadogan Street, Glasgow.



### SPECIAL FEATURES:

- (1) Hole for use of Banana Plug.
- (2) Provision for (a) PIN or WANDER PLUG; (b) WIRE; (c) SPADE TERMINAL.
- (3) CUTTING TEETH carefully made, giving perfect SERRATION on panel.
- (4) ENGRAVED KNURLED Insulating Knob, Non-Detachable.

+ WITH RED KNOBS.

- WITH BLACK KNOBS.

A NEW **UNIVERSAL TERMINAL** embodying all possible advantages, packed in attractive boxes containing one gross assorted.

*Always in stock for immediate dispatch.*

The above terminals are specially suitable for use in the Cossor "Melody Maker" and Mullard "Master Three" circuits.

OBTAINABLE FROM THE  
**LEADING FACTORS**

or direct from:

**E. J. FRANCOIS**  
89, CLERKENWELL RD.,  
LONDON, E.C.1.

'PHONE: HOLBORN 6055. GRAMS: "NOSAMFRAN," HOLB, LONDON.

CODE: ABC 5th EDITION.

RETAIL AT

**4<sup>D.</sup>  
1  
2** EACH

*Liberal trade discounts.*

WHEN REPLYING TO ADVERTISEMENTS PLEASE MENTION "THE BROADCASTER."



# The Star Turn

## By Day

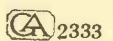
EACH day sees the Cossor "Melody Maker" creating new records in profits for the Trade. Never has there been such a wonderful season for components. The Cossor "Melody Maker" has brought radio to thousands of new customers. It is the finest value-for-money proposition ever conceived. There is more than £3 profit for you on every kit of parts.

## By Night

EVERY night in thousands of homes new radio enthusiasts prove the claims of the Cossor "Melody Maker." "As easy to use as it is to build—seven countries on one dial." Never before has any set given such satisfaction or been acclaimed with such enthusiasm, and this phenomenal success is due to the design of the set and the superb quality of Cossor Valves.

You can rely on the  
**COSSOR "MELODY MAKER"**  
for Good Profits  
during the  
**SUMMER**

Advt. A. C. Cossor, Ltd.  
Highbury Grove, N.5.



WHEN REPLYING TO ADVERTISEMENTS PLEASE MENTION "THE BROADCASTER."

**THE BATTERY**



**THAT SELLS!**

SURE-A-LITE Batteries sell on sight. For value and service they have no rivals. Our advertising has attracted the attention of all the wireless public, and nobody who has tried a SURE-A-LITE will buy any other kind.

Are you getting your share of this business?

SURE-A-LITE means satisfied customers for you, and a quicker turnover. They are backed by a service no other maker can give you. If any defect should be found in a SURE-A-LITE by you or your customer the Battery will be replaced free of charge and without question.

		Retail	Trade		Retail	Trade
"Supra"	66 volt	7/11	5/6	"Giant"	66 volt	10/6 7/-
"	108 volt	14/3	10/4	"	108 volt	17/6 11/8

Display Box, retail lists and showcards free.

**SURE-A-LITE**

**BRINGS MOST IN — GIVES MOST OUT**

REGISTERED TRADE MARK

Grid Bias : Each 66 volt Battery tapped every 1½ volts up to 6 volts.  
Each 108 volt Battery tapped every 1½ volts up to 9 volts.

**THE BETTER BATTERY**

THE BATTERY COMPANY, 92, HURST STREET, BIRMINGHAM.  
WHEN REPLYING TO ADVERTISEMENTS PLEASE MENTION "THE BROADCASTER."

# IMPORTANT NOTICE



## SHROUDED TRANSFORMER



~~10/6~~

8/6

From **May 1st** the price to the public of the above well-known Transformer will be reduced from 10/6 to 8/6

**TRADERS.** Please apply for **NEW TERMS**, and be prepared for the increased business that will result from this attractive reduction. Extensive Advertising will commence in all the popular wireless journals from May 1st. *Orders received from April 1st WILL BE EXECUTED ON NEW PRICE & DISCOUNTS.*  
**THE FORMO CO., Crown Works, Cricklewood, N.W.2.** Telephone: HAMPSTEAD 1787.

*Portable Receivers  
are easy to  
Sell.*

## Profit by PORTABLES



Spring time—when sales of most Radio lines are dropping—Portable Receivers sell more readily. Make sure of your share of this profitable business and help to maintain your turnover by concentrating on Portables. It is unnecessary to carry a large stock, just rely on A. J. Dew & Co's prompt wholesale service. We will satisfy you and you can satisfy your customers.

We have always ready for immediate despatch all popular Portable Receivers, including Pye, Halcyon, McMichael, Rolls, Ormond, etc., etc. While you should have one demonstration model at least, you can call on our stocks as required for promptly supplying your customers.

*Maintain  
your turnover in  
the Spring and Summer Months.*

# A.J. DEW & CO

Wholesalers of 'Everything Radio'  
 33-34 RATHBONE PLACE, OXFORD ST., LONDON, W.1  
 Telephone: Museum 8686 (10 lines). Telegrams: "Dewmofac" London.

WHEN REPLYING TO ADVERTISEMENTS PLEASE MENTION "THE BROADCASTER."

# T. C. C. CONDENSERS

are specified for the  
**COSSOR MELODY MAKER**  
and as all wise constructors  
know the dangers of substitution,  
you will do well to look to your  
stocks of T.C.C.



*Adv. Telegraph Condenser Co., Ltd., Wales Farm Rd., N. Acton, London, W.3.*



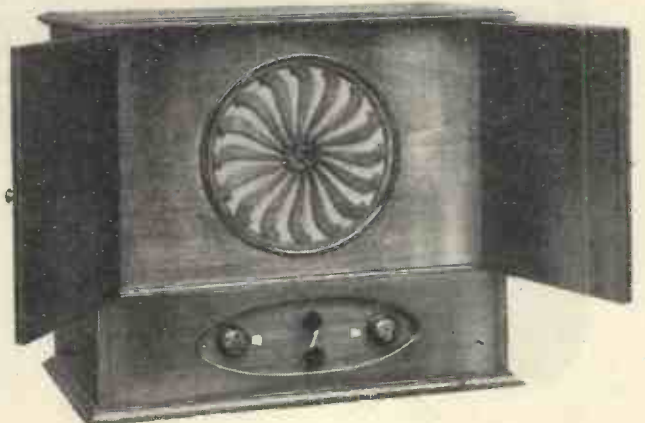
## The Westminster TRANSPORTABLE RECEIVER

All Stations. :: :: Gramophone Attachment.  
Price 35 Gns.

ARMITAGE MANUFACTURING CO.  
9, ST. STEPHEN'S HOUSE, WESTMINSTER  
Phone: Vic. 0480.

## CANTOPHONE MAINS RECEIVERS

Entirely self-contained: including Aerial, Power Valves, Balanced Armature Cone Speaker; H.T., L.T., and Grid Bias derived from Mains. No battery troubles or expense. Perfectly safe and simple. Wonderful tone quality with ample volume.



*(May be used with an aerial and earth if desired).*

D.C. MODEL, as illustrated, 4-VALVES. 32 Gns. complete.  
A.C. MODEL.—prices on application.

*Write for leaflets and generous terms to—*

**The CANTOPHONE WIRELESS Co.**  
Remo House, 310, Regent Street, W.1. Phone Mayfair 2532

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*Special  
Announcement*

# SIEMENS

HIGH CAPACITY  
**H.T. BATTERIES**  
FOR  
**PORTABLE SETS**



There is a real need for a better and longer-lived Battery for Portable Sets, and this requirement has induced us to manufacture a special type for this purpose.

*Particulars of two standard sizes are given below ; other voltages are made to order.*

**No. 1075.** 126 volts,  $9\frac{7}{8}$  x  $5\frac{7}{8}$  x 4 ins. high.

**Retail Price 30/-**

**No. 1077.** 108 volts, 10 x 5 x 4 ins. high.

**Retail Price 25/-**

Both of these sizes are fitted with plug sockets at every six volts.

Tappings for grid bias can be arranged if desired.

We invite enquiries from manufacturers of Portable Sets for Batteries to suit their own special requirements.

**SIEMENS BROTHERS & CO., LTD.,**  
WOOLWICH, LONDON, S.E.18.



### A THREE HOURS' TEST

A THREE hours' test was recently carried out by the Wireless Editor of the "Worthing Herald" and resulted in the reception, at good loud-speaking volume, of the following stations:

**Long Waves:** Daventry 5XX, Radio Paris, Huizen.  
**Short Wave:** London, Daventry 5GB, Bournemouth, Langenberg, Kattowitz, Vienna, Barcelona, Stuttgart.

Other stations received with volume almost as good were: Frankfurt, Munich, Brunn, Hamburg, Prague, Berne and Toulouse.

NOTE: No outside aerial or earth were used and the set was used exactly as supplied by us.

We have always prided ourselves on the PURITY of reception which the "Nulli Secundus" gives, and this record of RANGE is one that will still further assist traders in making sales.

DEMONSTRATIONS GLADLY ARRANGED.

A Descriptive Leaflet and Trade Terms will be sent you on request.



The Retail Price of this standard  
**"NULLI SECUNDUS"**  
 FIVE VALVE PORTABLE  
 is only  
**32 Gns.**  
 Royalties Paid. Complete with Valves, L.T. super capacity H.T. and fitted with turntable. Ready for immediate use.

**C. CRESWICK ATKINSON, 35b, HIGH ST., BEDFORD.**

Telephone: Bedford 2514.

## DEMONSTRATE YOUR SETS!

Why not demonstrate your sets with the Whiteley Boneham Cone speaker. Every Whiteley Boneham Speaker has a special cone unit embodied which eliminates rattle and distortion, giving ample volume even for demonstration purposes and absolute truth of utterance.

Fine craftsmanship is revealed in every line of this cabinet speaker, making a quality cone at a price that the public will appreciate.



Oak or mahogany Cabinet cone speaker (as illustrated)

Retails at

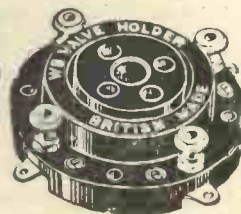
**£3 : 0 : 0**

**WHITELEY, BONEHAM & COMPANY, LIMITED,**  
 Nottingham Rd., Mansfield, Nottingham.

### SPECIFIED IN LEADING RADIO CIRCUITS

The W.B. Anti-phonics valve holder has been specified more often than any other in the best circuits of the leading radio journals. Vibratory noises, valve shocks and losses are unknown on the W.B. Specified in the Cossor "Melody Maker" and selling rapidly for this sensationally successful set.

**The W.B. ANTI-PHONIC VALVE HOLDER**  
 RETAILS AT  
**1/9**



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# THE SUPER AERIAL

## NEGROLAC

(REGISTERED)

The remarkable success attained by the NEGROLAC AERIAL is due to sheer merit.

Experts report, and users confirm :

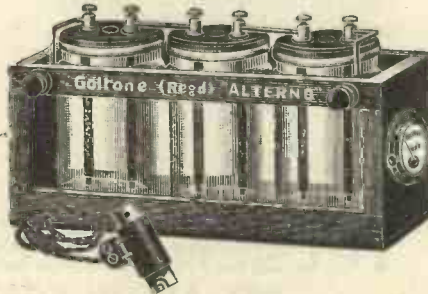
- 25 per cent. increase in volume of reception.
- Selectivity improved beyond measure.
- Distant stations, hitherto unobtainable, brought in at loud-speaker strength.
- Constant tuning.
- Immunity against acid and chemical laden atmosphere.
- High insulation and protection against surface leakage.
- Easier to handle than 7/22 Aerial Wire. Will not kink.

**PRICES.**

Coils of 50 ft. 9/-; 80 ft. 15/-; 100 ft. 18/- (subject).

Send for sample and pamphlet.

**"NEGROLAC" INDOOR AERIAL.**  
Extraordinarily efficient. Prices from 3/- (subject).  
**FULL PARTICULARS ON REQUEST.**



### "ALTERNO"

#### CHARGER (A.C. Circuits only)

This rectifier is recommended for charging H.T. Radio Accumulators. Will charge at negligible cost. Complete with adaptor, connecting cords, and full instructions.

Price 21/- each (subject).

With Ammeter (as illus.), 12/6 extra.

#### WHAT USERS SAY

Mr. A. S., Narborough Road, Leicester, 21st Jan., 1928:—  
For your interest I would say that I first saw your Charger being used as a commercial proposition at a Battery Charging Station here in Leicester. I made enquiries about it from the owner, who said the charger had put pounds in his pocket.

### "INDISPENSO"

#### CHARGER (D.C. CIRCUITS ONLY)

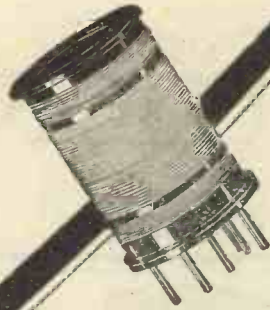
1928 NEW MODEL WITH POLARITY INDICATOR.

Unsurpassed as a charger for both H.T. and L.T. Accumulators.

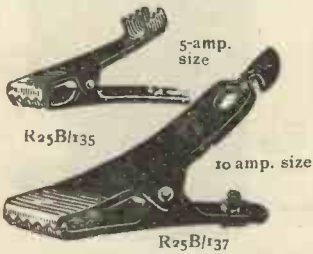
Thousands in use.

Price complete

**6/-**  
SUB.



**"GOLSTONE" PLUG-IN COILS**  
for the  
**"MULLARD MASTER 3."**  
Wound with best silk-covered wire.  
**BROADCAST WAVE—**  
Price 5/9 (each, subject).  
**LONG WAVE—**  
Price 6/6 (each, subject).



### "GOLSTONE" (Regd.) QUICK-GRIP CONNECTORS

Invaluable for making a quick and certain connection. "A clip with a thousand uses." R25B/135, 2/- doz. R25B/137, 5/- doz. All prices subject.



### "SELECTA" (GOLSTONE) WAVE TRAP

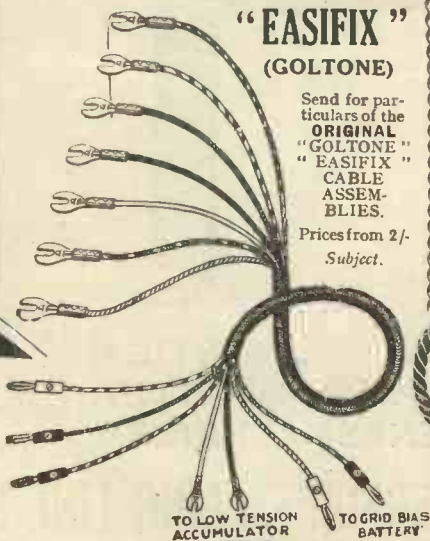
Cuts out 2 LO at 2 miles, and enables a range of home and foreign stations, hitherto unobtainable, to be brought in. For all wavelengths up to 550 metres. Complete with instructions, 30/- (subject).

See Lists.

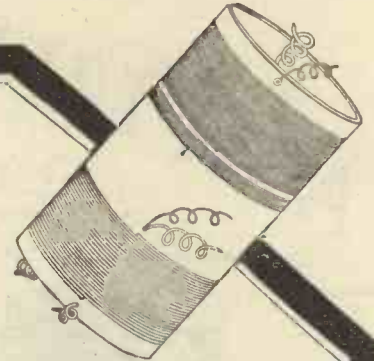
### "EASIFIX" (GOLSTONE)

Send for particulars of the ORIGINAL "GOLSTONE" "EASIFIX" CABLE ASSEMBLIES.

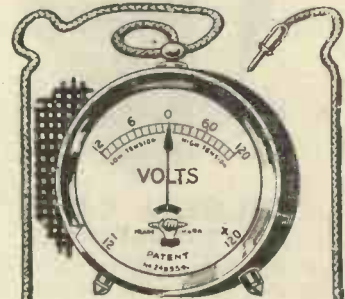
Prices from 2/- Subject.



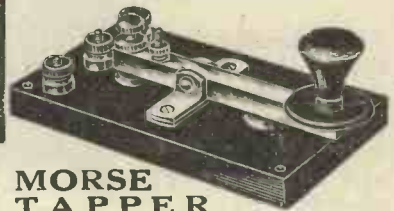
TO LOW TENSION ACCUMULATOR TO GRID BIAS BATTERY



**"GOLSTONE" COILS for**  
**COSSOR MELODY MAKER.**  
Accurately wound to specification.  
Best D.S.C. Wire. Price 5/-  
Each, subject.



**"GOLSTONE" RADIO METERS**  
High-grade BRITISH MADE  
"GOLSTONE" Instruments  
—in insulated cases, reading high and low tension voltages.  
SIDE READING, price 7/6 subject.  
CENTRE ZERO READING (as illus.), (subject) 10/6  
Every genuine "GOLSTONE" instrument has the Trade Mark on dial.  
For full range of RADIO-METERS see Catalogue—sent on request.



### MORSE TAPPER

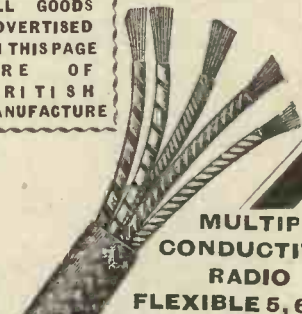
Superior instrument with nickelled fittings and moulded base.

List No. R. 43/210 (as illus.), Price 7/6. Subject.

List No. R. 43/19, Popular Model, Price 3/- Subject.

For sounder and combined Buzzer-Sounders see Radio List B/R.117.

ALL GOODS  
ADVERTISED  
ON THIS PAGE  
ARE OF  
BRITISH  
MANUFACTURE



### MULTIPLE CONDUCTIVE RADIO FLEXIBLE 5, 6 & 7 way.

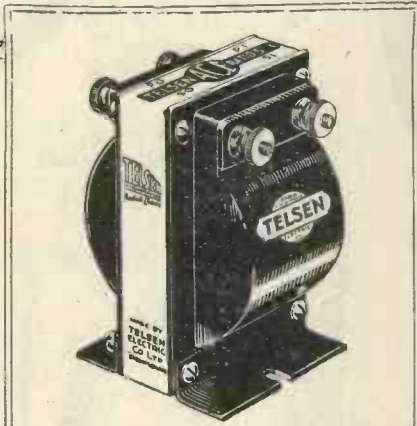
High grade insulated flexible conductors with distinctively coloured braiding. Full particulars on request.



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# AMPLIFICATION without DISTORTION

These instruments are unrivalled for giving large volume and purity of tone equalling, and in many cases excelling the most expensive L.F. Transformers on the market. This is the reason for our record sales.



### TELSEN "ACE" L.F. TRANSFORMER

A smaller model, specially constructed for use with Portable Sets or receivers where compactness and light weight are required.

Retail Price **8/6**

Shrouded and with ratios 5-1 or 3-1.

### TELSEN **Radiogram** L.F. TRANSFORMER FOR BETTER RADIO RECEPTION

A really high-class component which has no rival for quality of workmanship, design or general efficiency.

RETAIL PRICE

**12/6**

Shrouded and with ratios 5-1 or 3-1.



## TELSEN ELECTRIC Co., Ltd., 207, ASTON ROAD, BIRMINGHAM.

Phone: CENTRAL 5265.

Grams: "ESCORT, BIRMINGHAM."

Agents & Distributors: LONDON—SEL - EZI WIRELESS SUPPLY Co. Ltd., Greek St., SOHO  
NORTHERN IRELAND—SLOAN & Co., 7, Corporation Street, BELFAST.

### "PORTABLE" VALUE

The "Lindley" is a Five Valve Portable that is worth every penny charged for it. Sell the "Lindley" and avoid all complaints.

#### Ranges without Aerial or Earth.

400 Miles on Daventry 5XX  
300 miles on Daventry 5GB.  
100 Miles on all Local Broadcasting Stations, and also receives in many parts of the British Isles several Continental Stations.

The "Lindley Five" consists of 2 H.F., 1 Det. and 2 L.F. stages.

Cabinet contains all batteries and Loudspeaker.

THE "LINDLEY FIVE" is always on Exhibition at "The Broadcaster" Showrooms, Bush House, Strand, W.C.2

Factors & Manufacturers  
**LINDLEY & Co**

14, Great Queen St., Kingsway, LONDON, W.C.2.

Telephone: HOLBORN 3052



A well-designed and constructed set which does not include any Foreign components, and is a real credit to British radio engineering.

Selectivity is good—Range is good—Volume is good, and the purity of reproduction is splendid too.

PRICE **£30 COMPLETE**

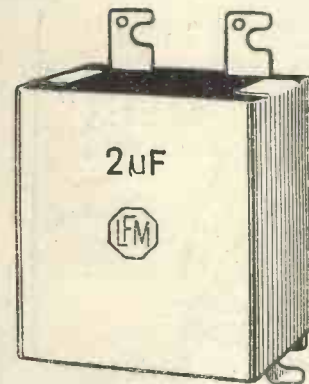
Royalties Paid.

A Waterproof Cover is supplied Free with each set.

## B. L. LION,

10, RAVEN COURT, ALEXANDRA RD.,  
WESTCLIFF-ON-SEA, ESSEX,

OFFERS TO THE TRADE :-



ALL CAPACITIES,  
HIGHEST QUALITY,  
KEENEST PRICES.

A WONDERFUL SELLING LINE!

WHEN REPLYING TO ADVERTISEMENTS PLEASE MENTION "THE BROADCASTER."

# NO COMPLAINTS!

When you sell a customer a battery you want to know that you have made a friend of him. You don't want your customer coming back with complaints about it and giving you worry and trouble. The only way you can ensure against this is by selling him a

Read this letter — it is just one of many received by us. The originals of all can be inspected at our offices.

DEAR SIRS,—

Referring to the two model THM 90-volt Self-Regenerative High Tension Batteries you supplied to me in the early part of December last, I write to inform you I have had these in use for over 400 hours on my 7-valve Super Het Set. This passes 22 m/amps.

Testing these batteries last night after 5 hours continuous running, and whilst working I find the voltage has dropped to 165 volts.

Almost nightly I can tune in WGY at good Loud-speaker strength, never before possible with such volume.

Batteries have cost me a lot of money in the past, but never have I found any with the life your THMs have.

I paid £2 2s. 6d. for a 120-volt battery of well-known make. This lasted only 9 weeks. I had to scrap it. Volume and reproduction went off after about 4 weeks running.

I believe I have tried every make of dry battery and 120-volt, two-bank, set of accumulators (1,500 m/amps), but never have I experienced such results as from your Self-Regeneratives. The above-mentioned accumulators went to pieces after the third recharge. Another fault with the accumulators I found was creeping of acid which ruined the insulation of the leads, and creeping of current.

I am delighted with your batteries and can vouch they are the very best on the market.

Yours faithfully,

Messrs. RIPAULTS, LIMITED (Sgd.) V.B.  
LONDON, N.W.1.

## Ripaults



SIXTY VOLTS  
7/11

LARGEST CAPACITY FOR THE MONEY

Now read this impartial "test" report from "Popular Wireless," March 3rd, 1928.

### RIPAULTS H.T. DRY BATTERY

It will probably be remembered that a few weeks ago we mentioned that we had received a "self-regenerative" type H.T. dry battery from Messrs. Ripaults for test. It is claimed for this type of battery that internal resistance has been entirely overcome and that the capacity output and life has been increased to a considerable degree. The actual battery we have had under test is the triple-capacity type, model H.M., a 90-volter which sells at 29s. 6d. The maximum discharge advised for this battery is 18 milliamps. The approximate life in hours is stated to be 335 hours at a 20-milliamp discharge rate. At 100 hours per month aggregate use this gives a life of three and a third months approximately.

The sort of modern set with which it could be used is a five-valve receiver employing power valves. Or the test we gave it we exceeded the maximum discharge advised, and after delivering a current of 21 milliamps for well over 300 hours the battery is still capable of doing somewhat lighter work probably for some time. \*It will be seen that Messrs. Ripaults have not over-rated their battery and have, in fact, given a conservative estimate of its life.

We have also carefully tested one of the smaller types and find this similarly satisfactory. The term "self-regenerative" as applied to these Ripault H.T. batteries does not mean that they are capable of living for ever and ever, but that they quickly depolarise and give consistent and long service.

\*Italics inserted by advertiser.

## RIPAULTS SELF-REGENERATIVE H.T. DRY BATTERIES

### Give 50 per cent. Longer Life.

Full range of Four Capacities to meet every possible requirement.

LIFE CHARTS, RIGHT CHOICE TABLES, ADVERTISING MATTER, 'DUMMY' BATTERIES FOR WINDOW DISPLAY, AND TRADE TERMS ON REQUEST.



OUR TERMS TO FACTORS PROVIDE FOR 33½ PER CENT. PROFIT TO RETAILERS.

The Ideal batteries for Portable Sets where maximum capacity is required in minimum space. For equal size and weight Ripaults Self-Regenerative Batteries give 50% longer life.

# RIPAULTS LIMITED

1, KINGS ROAD, ST. PANCRAS, LONDON, N.W.1

Telephone : North 4374 (Branch Exchange).

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**HIGH TENSION CELL.**

Patent No. 192185.

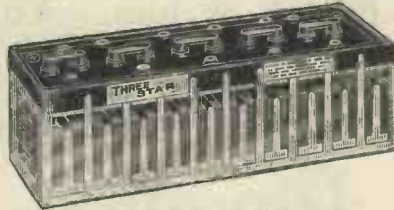


**TYPE ML**

Capacity 3,000 Milli-Amp. Hrs. Dimen sions, inches, 1 1/4 x 4 1/2  
**PRICE** 2/- each, including two terminal clips and one inter-cell connector. The most perfect H.T. unit ever offered. No possibility of inter-cell leakage. More space for electrolyte than ever before. Can be assembled or dismantled by anyone in one minute.

Also supplied as a 60 volt battery contained in high-grade polished oak crate.  
 Price 67/6

**“THREE STAR”**



**HIGH TENSION WIRELESS BATTERY TYPE H.T.X. 20 Volts.**

A new and improved model. Capacity: 2,500 Milli-Amp. Hrs. Price: Battery only 10/- Complete in crate, 12/6.  
 Also supplied in polished crate, 60 volts, 37/6

**TYPE D.E. CELLS.**

Suitable for all types of Dull Emitter Valves and all purposes where long, slow discharges are required. Supplied in heavy glass containers, ready charged, the addition of acid only needed to render ready for use. When not in use will retain their charge for six months.



Type.	Volts.	Capacity on slow Intermittent Discharge.	Price.
“D.E.” 20	2	20 A.H.	4/6
“D.E.” 45	2	45 A.H.	8/6

All supplied in dried charged condition.

**TRADE DISCOUNT 33 1/3 %.**

**SEND FOR NEW CATALOGUE.**

**“THREE STAR”**

**ACCUMULATORS, LTD.**

Telephones—Tottenham } 2777  
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*Free Gift!*

A beautiful two-colour

*Harlie*

**POCKET LOG CHART**

Be prepared! Order your stocks of the Pocket Log Charts now to meet the “Harlie” invasion being broadcast by our public advertising campaign.

Liberal Trade Discounts.

**HARLIE BROS.,**  
 BALHAM RD., LOWER EDMONTON, N.9.

Telephone: Tottenham 3446.

**The Polar No. 3 All Brass Condenser**



Quality Tells

A tale of increased Sales.

Prices

7/6 to 8/6

**Wingrove & Rogers, Ltd**

ARUNDEL CHAMBERS, 188, STRAND, LONDON, W.C.2  
 POLAR WORKS, OLD SWAN, LIVERPOOL  
 Manchester, Glasgow, Cardiff, Newcastle-on-Tyne



# The DONOGRAM

(Regd.)

Patentee: PATRICK S. O'DONNELL

Proprietors:  
W. KING WEBSTER  
PATRICK S. O'DONNELL



THE DONOGRAM is an electric gramophone on which any make of record can be played, giving perfect reproduction, with the scratch of the needle entirely eliminated. The volume can be regulated from a whisper to sufficient to fill a Concert or Dance Hall.

THE DONOGRAM incorporates an independent receiver. By throwing over a switch it is immediately changed from a gramophone to Broadcasting, or vice versa, on either ordinary or frame aerials, receiving many Broadcasting programmes.

THE DONOGRAM is constructed of solid mahogany or oak and all models are fitted with Donotone Loud Speakers. Accumulators are fitted or alternately the Donogram can be run from the mains. Prices from 85 to 125 guineas.

THE Donotone do not make instruments by mass production; every instrument is made throughout by experienced workmen and the result is the finest workmanship.

Demonstrations given at

Our latest invention:—  
A COMPLETE TALKING  
FILM APPARATUS (pat. applied for)  
embodied in one cabinet—will be  
available in the very near future.

## THE DONOTONE (Regd.) LOUD SPEAKER,

Telephone—Hol. 0523

40, Furnival St., London, E.C.4. Telegrams—Donotone, Fleet, London

AND AT

## RUDALL, CARTE & CO., LTD.,

Telephone—Museum 7281

23, Berners St., Oxford St., London, W.1.

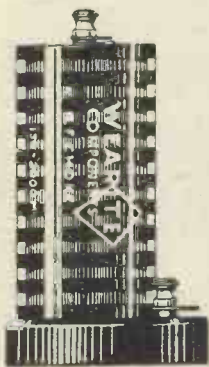
Telegrams—  
Burlettas, Wesdo, London

Concessionaire for France: SIDNEY RICHARDSON, 10 Avenue Victor Hugo, Seuran, Seine-et-Oise, FRANCE.  
Telephone—Seuran 43 (France)

Telegrams—Sidric, Seuran, France.

SOLE AGENT FOR NEW ZEALAND: HENRY A. HOGG & CO., 47, PRINCESS STREET, DUNEDIN.

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**H.F. CHOQUE.**  
Price 6/6  
SHORT WAVE 7/6



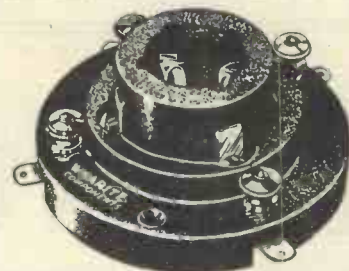
**DOUBLE RANGE TUNER W.G.2.**  
B.B.C. & 5XX.  
Single hole fixing  
15/- each

**WEARITE COMPONENTS**

**ARE RIGHT**  
your customers  
say so



**Low Wave Tuner**  
22 to 75 Metre Range  
List No. WG3  
10/6 each



**ANTIMICROPHONIC LOW LOSS VALVE HOLDER L.A.S.5**  
2/6 each

**WRIGHT & WEAIRE LTD.,**

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Telephone:  
Tottenham 3132.

The valve cannot be put in incorrectly owing to the small semi-circular holes in the top insulated face effectively housing the pins before the valve legs come into contact with the socket connections. They also prevent any tendency to slip.

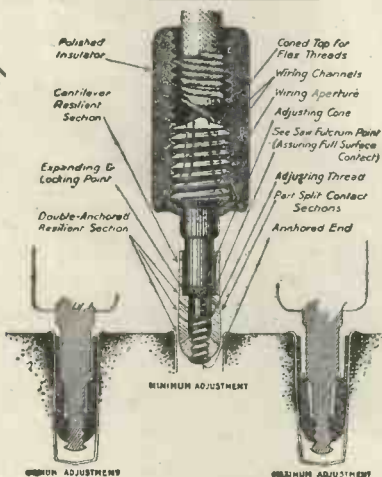
**AT LAST! CLIX-LOX**

**Adjustable Wander Plug and Permanent Locking Plug**

The Clix-Lox Plug solves all problems of faulty contact arising from the varying sizes of high tension and other sockets and eliminates all consequent reception troubles. Any degree of "fit" may be obtained by a turn of the insulator, and by a final turn the Clix-Lox Plug may be permanently locked. With the advantage of instant connection and disconnection is combined the security and permanency of an ordinary screw terminal.

**Adjustable Resilient Locking**      **PRICE 2½d. each (Retail)**      **A LINE that is vitally needed.**

Full particulars on request from  
**LECTRO LINX LTD.,**  
254, Vauxhall Bridge Road, London, S.W.1.



**2,300 VOLTS!!**

An exacting and convincing test that again demonstrated the Perfect Construction and the High Quality of the Gambrell "Neutrovernia" was carried out by us recently—in the presence of representatives of the technical press.

Read this extract from one published report—  
"Six standard 'Neutrovernias' were selected from stock by us and were subjected to a steadily increasing D.C. voltage supplied by a motor generator. Of the six samples tested, three broke down at 1,900, 2,000 and 2,250 volts respectively, while the other three successfully withstood the full output of the generator—2,300 volts.

"The three specimens which succumbed in the neighbourhood of 2,000 volts were taken to pieces and examined, and it was found that the breakdown occurred at a different place in each, showing that there is no fundamental weakness in the design or construction of the condenser which would lead to a breakdown at a particular spot.

Vide: 'Wireless Trader.'

Besides the great popularity that our "Neutrovernia" has with the radio public, an enormous number of them are used by many set manufacturers and we, of course, include them in our own receivers.

Gambrell 'Neutrovernia.'      Retail Price 5/6 each.



Retail Price 5s. 6d.

**CENTRE TAPPED COILS.**

There is no getting away from the fact that Gambrell Coils, the original low-loss coils, are the most perfect coils to use for any circuit, centre tapped or otherwise and every user recommends them to others.

SIZE	RETAIL PRICE	APPROX. NO. TURNS	SIZE	RETAIL PRICE	APPROX. NO. TURNS
a2	4/10	18	D	6/3	100
a	4/10	25	E1	6/9	150
A	5/-	30	E	7/8	200
B1	5/3	40	F	8/6	300
B	5/6	50	G	10/-	500
C	5/9	75			

Above Prices are for Standard Coils.  
Centre Tapped 6d. Extra.



**GAMBRELL BROS. LTD., 76, VICTORIA ST., LONDON, S.W.1**

**RADIO RECEIVERS**



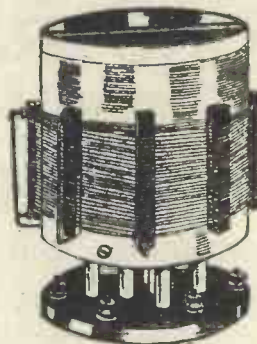
**For Town and Country Homes.**

We specialise in designing and constructing radio receivers to order.

Telephone: Museum 2244

**READ RADIO LTD., 67 Newman St., Oxford St., LONDON, W.1**

**"L. & H." PRODUCTS.**



**"L. & H." ALL-WAVE FOUR type H.F. TRANSFORMER.**

fitted with 6 pins arranged in usual "cross" formation. Suitable for use in existing sets where that type of coil base is fitted.

Short or Long Wave .. 16/- each  
6 Pin Base .. 2/6 each

**"Regional" Coils, including Bases.**  
Short Wave .. 35/- per pair  
Long Wave .. 11/-

**"L. & H." Everyman Four.**  
Exactly to specification. Fully Guaranteed.  
Price per pair, including Bases, 30/-

**"L. & H." SHORT WAVE COIL.**  
20-70 metres.  
Specially designed for Empire Broadcast Reception. Price complete with Base, 6/-

**The Mullard Master Three Coils**  
20-80 metres 7/- 250-500 metres 7/-  
900-1800 metres 7/6

**LAWRENCE & HULL, 29, PARKHOUSE ST., CAMBERWELL, S.E.5.**

Phone: Rodney 3810.

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**The Goodwill of your  
Customers means repeat Business**

**Display EVERREADY**  
Britain's Best Batteries  
**THEY ATTRACT CUSTOM**

Regd.

Users appreciate these advantages—  
**Value for Money · Reliable Service  
Economy · Guaranteed Satisfaction**



**Fixed Prices · Consistent Sales · Fair  
Profit · Good Service and Delivery**

**These advantages are yours by selling  
only**

**EVERREADY**

Regd.

**“The All-British Batteries”**

Illustrated list of standard sizes and voltages sent on application. Dept. D.X  
The Ever Ready Co., [Gt. Britain] Ltd., Hercules Place, Holloway, London, N.7

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I wish to obtain further particulars regarding advts. specified :

Name .....

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April issue

### The ETON Primary H.T. Battery

(Miniature Leclanché Cells)

P.1. best quality porous pot cell, 1 1/2" by 2 1/2" Jar. Retail price complete 6d. each, 5/3 doz., 30 for 14/-. S.1. best quality large Sac Cell, 1 1/2" by 2 1/2" Jar, 6d. each, 4/6 doz., 30 for 12/-. S.2. best quality small Sac Cell 1 1/2" by 2 1/2" Jar, 4d. each, 3/4 doz., 30 for 9/6. Electrolyte, Insulating Varnish, and tapping plugs supplied free with 30 or more cells. Write for special prices for larger quantities and also for complete units made up in trays, ready for use. Waxed Jars of Eton Insulating Glass, small, 1/- per doz., large, 1/3 per doz. Eton Porous pots, 3/- per doz. Eton Zincs, small, 10d. doz., large 1/- doz. Electrolyte in 6d., 9d., and 1/- jars. Insulating non-corroding varnish, 6d., 9d., and 1/- jars. 1,500,000 cell jars already sold.

Price list, trade terms and fullest particulars on application to :-

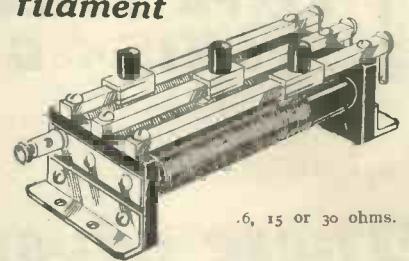
**THE ETON GLASS BATTERY CO.**

(Pioneers of square glass jars)

46, ST. MARY'S ROAD, LEYTON, E.10. 'Phone ; Walthamstow 0849.

### The LORIOSTAT for perfect filament control.

- 1 way 2/-
- 2 " 3/9
- 3 " 5/6
- 4 " 7/3
- 5 " 9/-
- 6 " 10/9



.6, 15 or 30 ohms.

A multiple unit superseding the fixed Resistor. Can be used in any circuit to perfectly and independently control any number of valves. For downright efficiency use a LORIOSTAT in your set.

A. W. STAPLETON, 19a, Lorrimore Buildings, Lorrimore Street, Walworth, S.E.17. Rodney 3869.

STOCKED BY ALL THE LEADING FACTORS.

### C. D. M. COMPONENTS

Famous for Reliability, Workmanship and Value. Nothing Left to Chance.

- H.F. CHOKE as illustrated, 5/- each.
- CLIP-IN TYPE, complete, 4/- "
- FIXED MICA CONDENSERS, .00005 to .002, 1/8d. each, .0025 to .006, 2/- each, .01, 3/6d. each. Grid Condenser and Leak combined, 2/- each. Get our terms, mentioning Broadcaster, please.



### C. D. MELHUSH

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### REFUSE IMITATIONS

Latest standard size Panels in three finishes. Guaranteed Panels, made by experts at low prices.

#### SPECIAL

Write for the latest handbook on Wireless Circuits, Windings and Pinless Contact Formers, fully illustrated with data.

Price 6d post free.



Make sure of having the prize - winning original Former by buying only Formers bearing Trade Mark "Becol."

Every constructor should have this useful booklet.

**THE BRITISH EBONITE COMPANY, LIMITED, HANWELL, LONDON, W.7**

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# "THE VALVE OF THE FUTURE"

No Dry Batteries

No Accumulators



43

"Cosmos-Met-Vick" A.C. Valves, Green Spot and Red Spot, are the result of investigation and experiment by one of the finest Research organisations in this Country.

They provide the complete solution for, and, in conjunction with the use of Met-Vick Eliminators, overcome all the difficulties of direct operation from the Electric Light Supply.

"Met-Vick-Cosmos" A.C. Valves not only provide the solution of the complete operation of wireless sets for the Electric Light Mains, but they also provide great volume and extreme selectivity free from distortion. By their use you can switch on your set like electric light, and yet lose nothing in effect. In fact a mains operated set with Met-Vick-Cosmos A.C. Valves is a much better set.

See what Mr. A. P. Castellain says in the "Wireless World" for March 7th:—

"REMARKABLY HIGH MUTUAL CONDUCTANCE—For the AC/G valve the mutual conductance is enormous when judged by ordinary valve standards—about 2 milliamperes per volt for an amplification factor of 36—and the heater current is only 1 ampere at 4 volts. The latter figures are quite comparable with valves of the 4½ volt 0.8 ampere L.S. class. For the AC/R valve the amplification factor is about 10, and the mutual conductance 4 milliamperes per volt, giving an A.C. resistance of about 2,500 ohms."

The writer continues by comparing the Cosmos AC/R Valve very advantageously with other makes of valves for similar duties.

Note also what Mr. G. A. Exeter, the London Area Manager of the Radio Society of Great Britain, says about the "Cosmos-Met-Vick" A.C. Valve:—

"... in view of the results I have obtained upon trial, under decidedly adverse conditions, I now think you are indeed to be congratulated upon producing a great improvement in the technique of radio. UNDOUBTEDLY THIS IS THE VALVE OF THE FUTURE."

The power handling capacity of the AC/R Valve is as great as that necessary for Public Address Service and is sufficient for operating "moving coil" Loud Speakers to the greatest advantage.

By using the ingenious "Cosmos" Disc Adaptors, these five-pin valves can be used in a set wired for accumulator valves without altering the wiring.

# MET-VICK

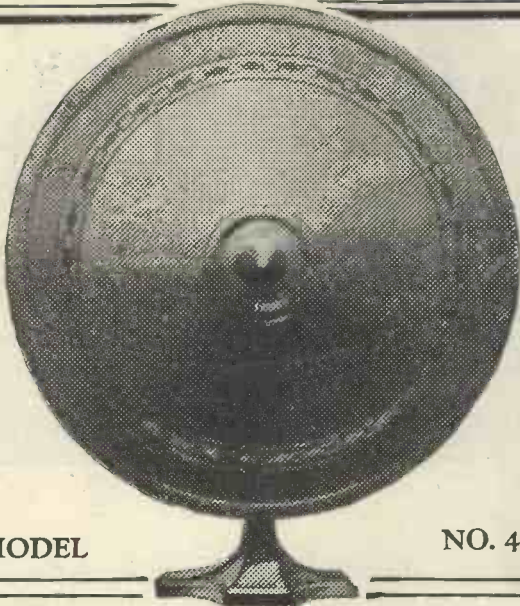
## VALVES · COMPONENTS · & SETS

Metro-Vick Supplies, Ltd., 155 Charing Cross Road, London, W.C.2

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# A GOOD SALES IDEA

one of the "Blue Spot" series



MODEL

NO. 44

Sold complete  
or as a Kit—  
£2-2-0

The popular "Ideal" Cone loudspeaker (Model No. 44) is put up in two forms—complete as illustrated and as a Home Constructor Kit with instructions for building. The Kit contains all the fine components embodied in the complete model—the "Ideal" 4-pole patent Balanced Armature Driving Unit, Pedestal and 16-inch Cone of gold embossed finish.

£2-2-0 Retail Kit or complete.

Full particulars of this model and all other "Ideal" lines sent at once by:

**F. A. HUGHES & CO., LTD.,**  
204-206 Great Portland Street, London, W.1  
Phone: Museum 8630 (3 lines) Grams: Distancing,  
Wesdo, London.  
Manchester Office: 185 Princess Street.  
Phone: City 3329.

—so we labelled it "Blue Spot"

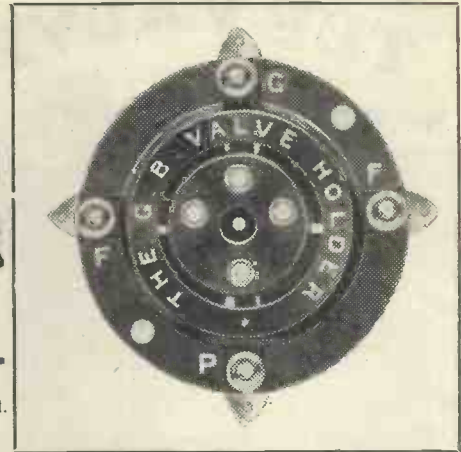
## BUY BRITISH GOODS.

They have always been the best, and are still the best to-day. These valve holders are sold in thousands for such sets as the Mullard Master 3, Cossor Melody Maker and all portable sets.

### THE FAMOUS

"  
G  
11/-

a dozen, nett.  
Sell at  
2/3 each



"  
B  
11/-

a dozen, nett.  
Sell at  
2/3 each

### VALVE HOLDER

Anti-Microphonic Low Capacity.

#### THIS VALVE HOLDER—

The Best of its kind yet produced, is now being offered to the Trade at the exceptionally low price of 11/- dozen. It is of original design and robust construction, incorporating new double wave springing. The holder and mount is of genuine Bakelite Moulding and fitted with Terminals and Soldering Tags, ensuring a ready sale in the retail market.

SEND TO-DAY FOR SAMPLE DOZEN.

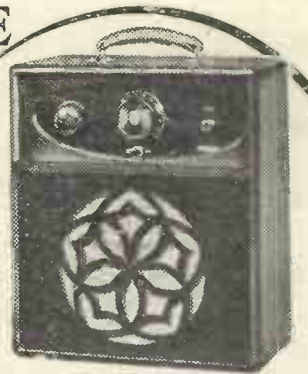
For full particulars from Sole Manufacturers:—

**G. BULLEN,** 338, OLD FORD RD.,  
LONDON, E.3  
Telephone: EAST 5696.

## The PORTADYNE

A self-contained  
receiving set complete  
with loud  
speaker.

5



This is the only set you can afford to add to your range before the summer season starts—and it's the portable you cannot afford to be without. Send for full particulars and ask for a demonstration—remember there is a growing market for portables and a good margin of profit on the Portadyne 5.

**WHITTINGHAM SMITH & Co.**

110, Kew Green, KEW, Surrey. Telephone: Richmond 3597.

29  
GNS.

## EXCEPTIONAL LOW PRICES.

Coils for Mullard Master 3.

Aluminium Panels.

Coils for Cossor Melody Maker.

21 x 7 Panels in  
Wavy or Cube.

Six Pin Bases.

Double Reading Volt Meters  
6-120v.

Push and Pull Switches.

Anti-Microphonic Valve Holders

Hegra Cone Units.

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S.L.F. Condensers.

3 in. Slow Motion Dials.  
Moving Coil Speaker Parts.

SEND FOR LATEST LISTS

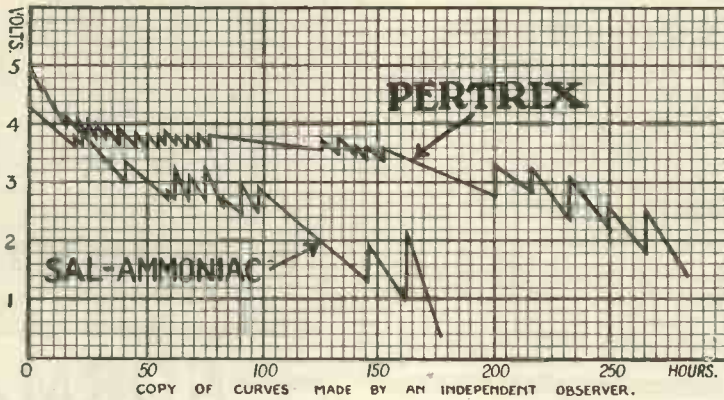
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719.

# PERTRIX

## PATENT LONG LIFE DRY BATTERIES.

### PERFORMANCE



The Curve shows the difference between a "Pertrix" Patent Long Life Dry Battery and a good quality Sal-ammoniac Battery. Both batteries were of the same dimensions, and both were discharged with a current of 5-6 milliampères under average broadcasting conditions, i.e., 5 to 6 hours every night with occasional longer periods of discharge. The voltage drop on each battery, after one ampere hour had been taken out, was found to be

Sal-ammoniac, 77.7% voltage drop  
 "Pertrix" only 32% voltage drop!

### PRICES

DUST-PROOF, DOUBLE WALLED CONTAINERS. ALL THE "PERTRIX" LONG LIFE CHARACTERISTICS.

60 volt.	—	8/-
100 volt.	—	13/-
120 volt.	—	15/6
9v. G.B.	—	1/6
12v. G.B.	—	2/3
4.8v. Flashlamps	—	6/- doz.

Also other voltage, and super capacity H.T. batteries and Torch batteries.



### DISCOUNTS

On application to A.F.A. Accumulators Ltd., PERTRIX DEPT., 120, TOTTENHAM COURT ROAD, W.1.

Ask for particulars of agency—carrying special discounts.

**SALES** Increasing daily.

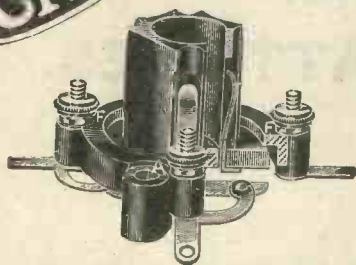
**DELIVERY** From Stock.

**YOU CAN BUILD AND MAINTAIN A REPUTATION ON THIS BATTERY.**

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**ANTI-MICROPHONIC VALVE HOLDER**



with Terminals **1/-** Retail.

Base only 1 1/8 inches over all. A specially designed spring absorbs shock instantaneously from any angle. No capacity effects as the moulded parts are air spaced at all points with minimum metal parts and no soldered joints. **Anode marked RED**

**TOGGLE SWITCH**  
**1/3** RETAIL



Finest quality low loss insulation. Shows at a glance whether receiver is "on" or "off". Guaranteed master "Make and Break" control for filament circuit.

Write for Illustrated Folder and Trade Terms.

**CASON**

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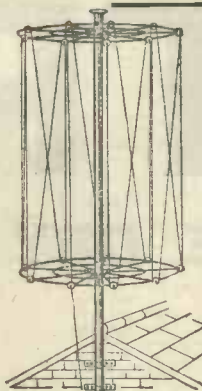
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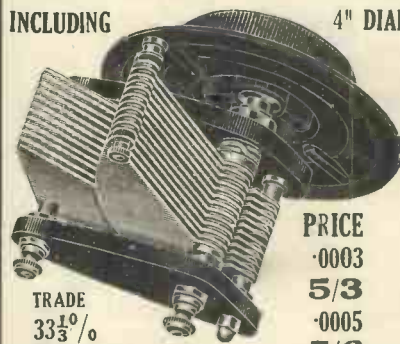
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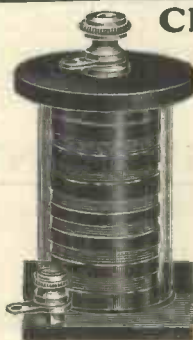
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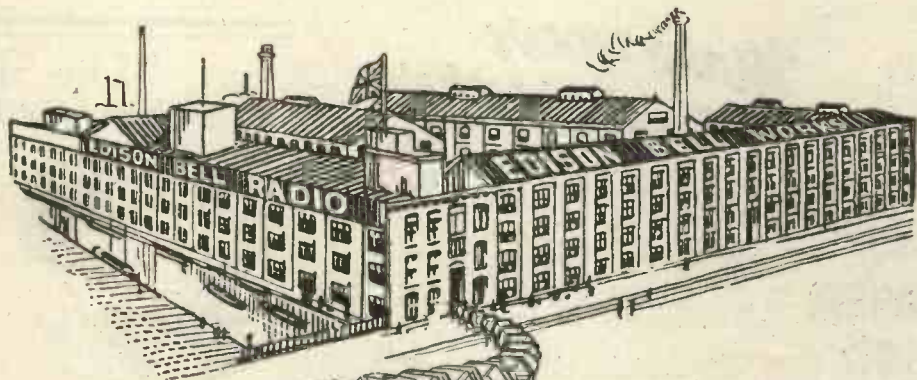
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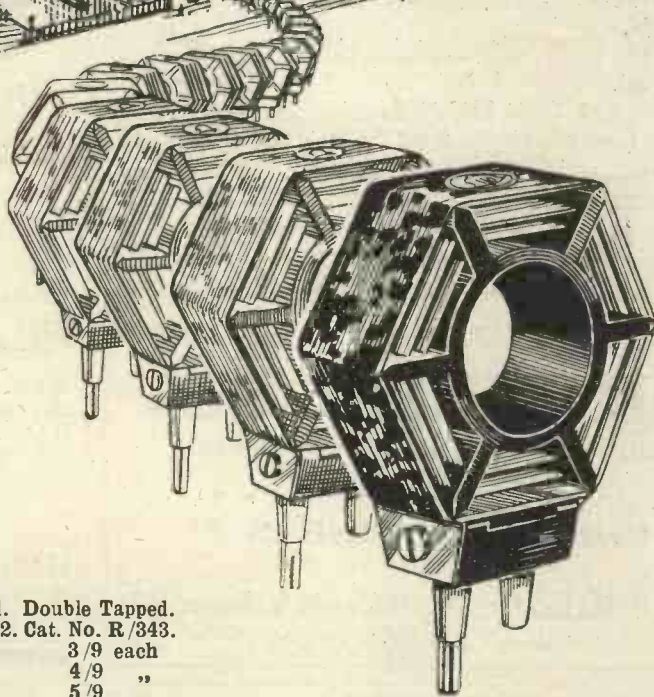
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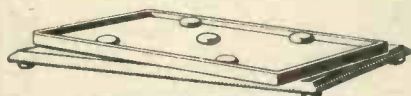
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Back View

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**RADIO SOCIETY OF GREAT BRITAIN**

THE CORNER HOUSE  
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DR RICHARD H. REECE, M.A.  
EXPERIMENTAL RADIO STATION  
G.2MS.

6th January, 1928.

Your Ref. Wireless Dept.  
5th Dec. 1927.

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G.B.M.S.

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BY DR. REECE,  
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proves conclusively the indisputable superiority of Carborundum over other materials.

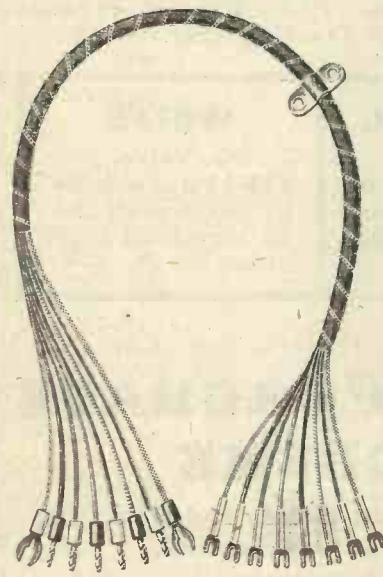
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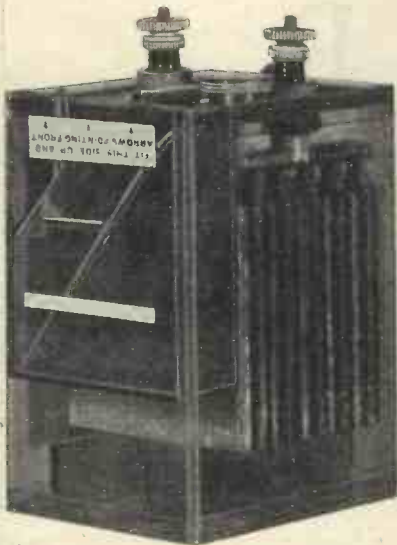
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Editor: F. H. Robinson, A.M.I.R.E.

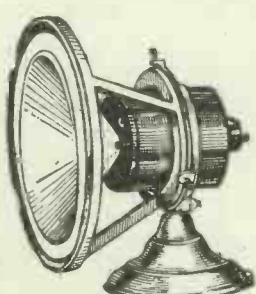
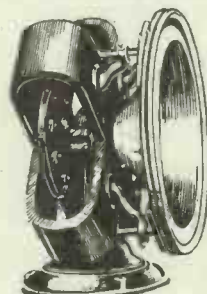
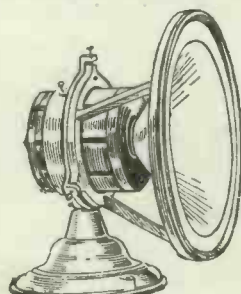
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Tel.: Holborn 0167. Liberal Discounts from your Factors.  
**ANDERSON'S WIRELESS S.A.**



**CRESCENT SHAPE "RIVAL" 23/6**  
"INSULATED SLEEVING," 2 mm. .... 21/- GROSS YARDS, IN ASSORTED COLOURS.  
Please see Advt. on page 75. Grams: Amsalg, Smith, London  
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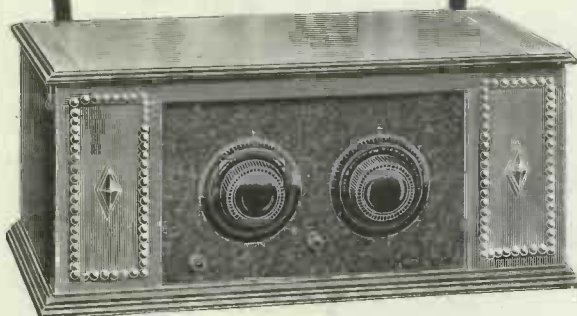
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## The IMPERIAL THREE

A sensitive set with easy control of volume and tone and simple tuning. Cabinet built to contain

L.T. and H.T. Batteries; panel black crystalline finish, very handsome. 12 months' guarantee (except batteries and valves).

A high-class set at a keen price **£7 10**  
Royalties and accessories extra



## The IMPERIAL TWO

The Watmel "Imperial Two" in its handsome Oak cabinet at £3 15 0, or Mahogany cabinet at £3 18 6, represents a great step forward in receiver value. The "Imperial Two" has guaranteed Loud Speaker strength from local stations and 100 miles from Daventry.

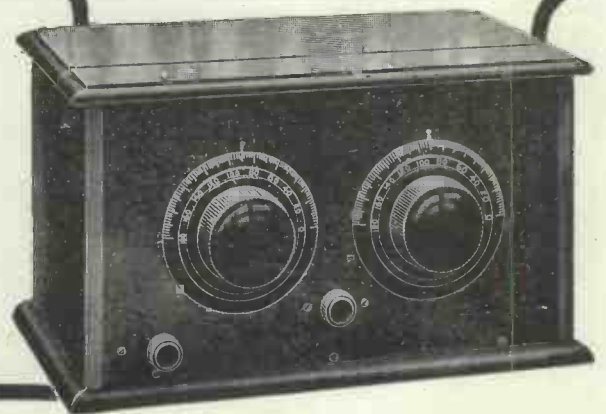
Neat and compact in layout, simple to operate, and carrying the Watmel guarantee, the "Imperial Two" is a ready seller and you should write now for full details. **£3 15**

Write to-day for full details of the Watmel range of sets. They offer keenest prices, consistent performance, and a guarantee your customers will appreciate.

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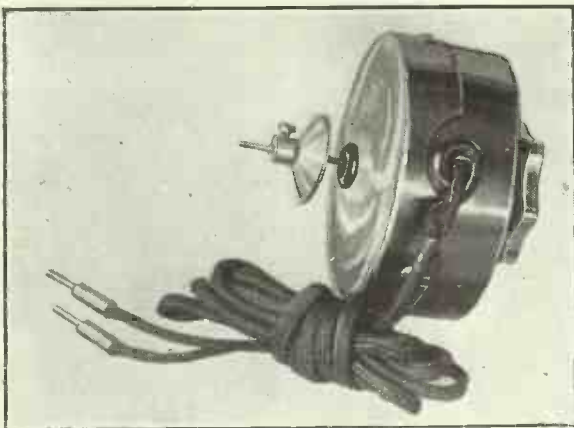
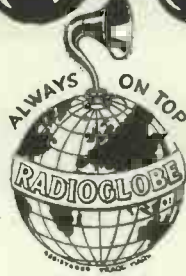
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# RADIO-GLOBE

## Loud Speakers



THE NEW "RADIOGLOBE"  
CONE LOUD-SPEAKER UNIT

**"Succeeds where others fail"**

The "Wireless Trader" praises:

"The Cone Loud-speaker Unit made by Anderson's Wireless Sales Agency, Ltd., on test gave very good results, and for its price IS ONE OF THE BEST WE HAVE HANDLED. It was tested with an open cone of fairly heavy material and the strength of signals was practically equal to that given by a commercial cabinet cone. *This is where many units fail.*

A really flexible cord 4ft. 6ins. long is provided. A good point is that the fixing device for the cone is included."

Retail 14/6



"RADIOGLOBE"  
CABINET SPEAKERS  
MAJOR No. 10. MINOR No. 11.  
13½" by 13" 12" by 11½"  
by 6½" by 6"  
52/6 Retail 45/- Retail



"RADIOGLOBE" RIVAL  
Height 18½ ins. Flare 10 ins. Horns supplied in black or brown; brown 6d. extra. Fitted with "Rival" base. Retail 24/-

"JUNIOR" same as above but with base of heavier construction and capable of greater power. Retail 27/6

Liberal  
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No radio dealer should be without LISSEN Headphones, for they represent a quick and certain profit of 30% and 10%.

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This is worth-while profit on a small transaction—an assured profit, because the power of LISSEN advertising will sell these Headphones for you.

# LISSEN 30%

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THOMAS N. COLE

FRIARS LANE  
RICHMOND, Surrey

and 10%  
is worth  
getting

WHEN REPLYING TO ADVERTISEMENTS PLEASE MENTION "THE BROADCASTER."



# Tuning In

## R.M.A. and W.R.A.

IN our March issue we published a letter from the Secretary of the Radio Manufacturers' Association relating to an article which appeared in the February issue of THE BROADCASTER AND WIRELESS RETAILER, contributed by the Wireless Retailers' Association.

As might be expected, this has brought forth reply from the W.R.A., and we publish elsewhere in this issue a letter from the hon. secretaries of the W.R.A.

In the opening paragraph surprise is expressed at the statement that firms holding aloof from the W.R.A. discount scheme do so at the recommendation of the R.M.A.

It appears quite a natural action to us. The R.M.A. insists that before co-operation with the W.R.A. can be considered, certain particulars relating to the W.R.A. membership must be divulged. Having made this decision, it is obvious that the R.M.A. must be consistent and direct their members also to refrain from recognition of the W.R.A.

Therefore this R.M.A. decision is a detail. What is important, however, is the reason for the decision.

Once before we stated that the two bodies had never met officially, and so far as we know that statement is still correct.

We believe the R.M.A. request to be a legitimate one—if a manufacturer intends to open a new account with a firm, certain details are requested and usually readily supplied.



Products of Langham Radio displayed artistically at the B.I.F., Birmingham.

As one of the editors to whom facilities have been granted to inspect the W.R.A. list of members, we appreciate the courtesy of the Association, but we fail to see why a similar opportunity should not be available to anyone.

It is obvious that every association exercises all possible care when electing new members. We are sure that the W.R.A. has done its utmost to secure a real bona-fide trade membership. No one, however,

can afford to take chances in the radio industry. For that reason we feel that many provincial retail associations are refraining from co-operation with the W.R.A.

This is an attitude which is understandable—at least, we feel so.

Meanwhile, time is being lost, and in a few months another season will be with us, and there will still be no semblance of co-operation between the sections of the Trade.

Given half a dozen members of the R.M.A. on one side and half a dozen members of the W.R.A. on the other, with sufficient foresight to see the advantages of close co-operation and the ability to forget the old N.A.R.M.A.T spirit, inter-working between the two bodies could be secured now.

## The Indian Broadcasting Co.

THE affairs of the I.B.C. appear to be in a very bad way, and it is generally well known by now that the general manager, Mr. Eric Dunstan, is visiting the U.K. to attempt to induce manufacturers in this country to interest themselves financially in Indian broadcasting matters.

It is, of course, obvious that before the British manufacturer consents to give

## Trade Benevolent Society

THE acknowledged need in the trade for a benevolent society renders observation of the progress made in the establishment of the Wireless Trade Benevolent and Provident Society extremely interesting.

It will be remembered that the advisability of forming a society was discussed at a luncheon held in November, 1925, but only recently has any notable advance been made.

In order that the society may be launched by July it is intended to call a meeting in June for the purpose of adopting the rules and appointing officers.

The main objects of the society will be to assist necessitous members and the widows, orphans and other dependent relatives of such persons, and to aid unemployed members in obtaining suitable positions.

For the employment bureau it is suggested that a secretary be elected who will keep a register of positions and members requiring positions.

This register will be open to unemployed members and those desirous of improving their positions. The secretary will keep in touch with the trade papers and communicate with firms advertising for employees, requesting full particulars.

The advisory committee wish it to be generally known that it is not intended at the outset to approach manufacturers for contributions, and that no application for assistance would be considered for a period of at least twelve months after the official introduction of the society.

financial aid, he will have to be convinced that the Indian radio market constitutes a profitable investment. Mr. Dunstan is no doubt prepared with evidence in proof of the fact that money put into the Indian market has reasonable hopes of producing a return.



One of the best set-out stalls at the British Industries Fair, London—that of the Mullard Wireless Service Co., Ltd.

From a perusal of a recent copy of the Indian Radio Times we imagine that the present programmes, which have recently been curtailed, constitute little inducement for the increase of licence-holders.

It will be a very great pity if the I.B.C. has to close down, for that would undoubtedly mean commencing a new service entirely. One cannot imagine any country, having once sampled broadcasting, allowing the service to lapse entirely.

## British Standards and Reports.

THE British Engineering Standards Association has issued a valuable index to the specifications and reports which have been published up to date.

Radio manufacturers will be particularly interested in the specifications for plug-in coils (No. 289), fixed condensers (No. 271), and ebonite panels (No. 234).

Copies of this index can be obtained from the Publications Dept., British Engineering Standards Association, 28, Victoria Street, S.W.1, price 1s. 2d. post free.

## Theft of "Portadynes."

AS we go to press we hear of a loss sustained by Whittingham Smith and Co., of Kew. Two "Portadyne" receivers were stolen from the car of Mr. Smith. The car was left in a "park" in Melbourne Place, Strand. The serial numbers are 5874 and 5985. Anyone offered these sets for sale should communicate with the nearest police station.

Mr. Smith's car was eventually found abandoned in the Hoxton district.

# Television and the Public

## THE NEED FOR CAUTION

**I**N view of the publicity that has been given to reports of successful "moving picture" transmissions by the Baird Company between London and New York, and to the fact that various television "components" are now appearing on the market, both the Trade and the general public are naturally concerned to know whether or not television can be safely regarded as ripe for immediate commercial exploitation.

If it is, a considerable demand will certainly arise on the part of amateur wireless constructors for the various component parts necessary to build television sets. On the other hand, if the present activity represents a mere flash in the pan, due caution is called for—on the part of dealers in particular—before launching out prematurely in this direction.

In the first place, much ambiguity surrounds the term "television," and it is necessary to define exactly what it means before attempting to estimate what part it may be expected to play in public favour. Theoretically, television may be defined as any system by which it is possible to reproduce a distant moving scene or object, normally out of the range of vision, and to do this simultaneously with the event and in a form recognisable by the eye.

### Transmission of Recognisable Images

This definition, it will be observed, does not exclude the use of connecting wires between the distant scene to be televised and the observer. As a matter of fact, apart from the trans-Atlantic transmission recently made by the Baird company, and an earlier American demonstration mentioned below, this is the only type of television that has so far attained any measure of success.

On the other hand, the public is inclined to regard television as a purely wireless service, comparable with the telephony transmissions at present provided by the B.B.C. If it were generally realised that present-day television, quite apart from other considerations, requires the observer to be linked by wires with the transmitting station, it is obvious that much of its popular appeal would disappear.

Wireless television, or "radio vision," as it has been called, is stated to have been accomplished by the Baird Company. Precise scientific details of the event are not yet to hand, but according to newspaper reports, recognisable images of people seated in a London office have been transmitted across the Atlantic to New York, a distance of approximately 3,500 miles.

The Bell Telephone Laboratories in America have published full details, both of the apparatus used and of the results accomplished in a series of television experiments carried out by their technical staff in May of last year.

The apparatus employed involved the use of rotating discs of a type similar to those generally associated with the Baird tele-

vision system, and cost several thousand pounds. The services of several hundred men were required to supervise and maintain the operating circuits during transmission. The results obtained consisted in the transmission of the head and shoulders of a speaker on a screen measuring two and a half inches by two inches.

### A Notable Accomplishment

When purely wireless methods were used, the total distance through which this small picture was transmitted across the ether was only 22 miles. By employing a connecting wire (which had to be specially loaded or pupinised in order to carry the necessary range of picture-signal and synchronising frequencies), this distance was increased to 250 miles, or less than one-twelfth the distance between London and New York.

Taken on its merits, the Bell Laboratories' experiment was a notable performance, far in advance of anything that had previously been accomplished. At the same time, it cannot be regarded as a favourable indication of the advent of home-television sets at a price which will place them on a footing comparable with that of the present broadcast receiver.

Without desiring in any way to discount the recent claims of the Baird Company, ordinary prudence should require them to give the public convincing evidence of the possibilities of their apparatus—particularly on the lines of wireless or true radio-transmission. Until this has been done it is premature for the Trade to attempt to sell television sets or components on a large scale to the public.

If the Baird Company have got "the goods" they must demonstrate their sets publicly, and show exactly what kind of pictures they can transmit through the ether. A wired service, as previously stated, can never make a wide appeal.

### Television's Limited Capabilities

The utmost that has been claimed for any television experiments so far carried out is that "recognisable" effects have been obtained. In each case the transmission has been limited to the head—or at most the head and shoulders—of a distant sitter. Such results again can have but a very limited appeal so far as the general public is concerned. Before television can compete with broadcasting in popular favour, it must be capable of providing a more varied and interesting bill of fare.

Unfortunately, directly one goes outside the limited range of "head and shoulders" no known system of television is able to stand up to the problem. This is inherent in the nature of the apparatus used.

In order to transmit the scene or picture, it must first of all be broken up into thousands of small elements, each having a different light-and-shade value. These different light-and-shade elements are then

thrown on to one or more selenium cells which convert them into corresponding electric currents.

In this form the "picture" currents are fed into a line in the case of "wired" television, or applied to the modulator of a carrier-wave generator in the case of wireless transmission, and are then re-converted back to their original light-and-shade values in various ingenious ways at the receiving station.

It is not, however, sufficient merely to "detect" the signalling currents—or to disentangle the picture elements—in the same way as the signal components are rectified in broadcasting. In the latter case the ear picks them out quite satisfactorily where there is a time interval such as exists between the successive notes that go to form a melody. Even when there is no time interval the ear is able to appreciate accurately and automatically the harmony value of simultaneous notes or chords.

### Problem of Synchronisation

Before it can "see" a picture, however, the eye is more difficult to satisfy. The various parts of the picture signal must in this case be accurately separated in space and correctly arranged in their proper order on the viewing screen.

This necessitates the use of very rapidly moving parts, both to "analyse" the picture at the transmitting end and to re-assemble or synthesise it at the receiving station. In fact, over 40,000 separate signals must be alligned in each second to reproduce even a rough-grained picture one square inch in area.

In order to keep both sets of apparatus accurately in step at the transmitting and receiving ends, special synchronising currents must accordingly be transmitted, in addition to the picture-building signals.

To go back to the "head and shoulders" problem, it will perhaps be clear to see why this is the easiest type of picture to transmit. In the first place the sitter can be placed directly between a strong source of light and the selenium or other light-sensitive cell. When in this position, the illuminated parts are strongly differentiated from those in shadow, and so a well-defined silhouette effect can be produced which will "move" with the original. In such a case, however, one person can only be recognised from another by differences of outline. No full face details can be seen.

### Experiments and Reflected Light

On the other hand, directly one attempts to make use of the light reflected back from the object to be televised, as must be the case before features or individuals, in a complex scene can be distinguished, the available light intensity falls off enormously. Experiments have shown that the light reflected from an object is several thousand times weaker than the direct or incident ray of light.

# BRAND NEW

We are informed that none of the items mentioned were marketed previous to March 1st. Under this heading in our next issue readers will find notices of new products marketed on or after April 1st.

## D.X. Transformer.

TRADERS who are acquainted with the popular D.X. coils will be interested to learn that the makers, D.X. Coils, Ltd., of 542, Kingsland Road, E.8, are now marketing a transformer which has been produced to meet the demands for an efficient instrument at a low price. It is completely shrouded in black-enamelled metal, and has two nickel-plated terminals fitted on either side. The case is provided



A new method of interior construction has been applied to this D.X. Transformer

with right-angle brackets for mounting purposes.

One of the outstanding features of this component is that it is air spaced and that the makers have eliminated the use of a former for the windings. The D.X. transformer appears to be one of the highest class, and has been designed with care and forethought.

It is made in 3-1 ratio only, and sells at 8s.

## "Wearite" Short Wave Coil.

THE increasing interest in short-wave reception has prompted Wright and Weaire, Ltd., of 740, High Road, Tottenham, N.17, to produce a short wave coil which should commend itself readily to experimenters.

This is called the "Master 3" coil, and is designed for use with the Mullard "Master Three." It is of the plug-in type, and for this purpose the ebonite base of the former is provided with six plated pin connectors. The former is made of paxolin, and is accurately wound with enamelled wire.

The retail price is 6s. 6d.

## New Marconi-Osram Valve.

ANOTHER addition to the Marconi-Osram range of valves is the H.L.210. The characteristics of this valve make it suitable for use in an H.F. amplifier, where a circuit with some method of stabilising or damping is employed, as a detector, or in a transformer or choke-coupled L.F. amplifier, except in the last stage.

It is intended for use with a 2-volt

accumulator, and care should be taken that this maximum voltage should not be exceeded. The H.L.210 has a filament consumption of 1 amp., a maximum anode voltage of 150, an amplification factor of 15, and an impedance of 25,000 ohms.

The anode voltages recommended for use with these valves are as follows:—For H.F. amplifiers, 50-150; as grid leak detector, 50-90; as anode bend detector, 70-150, and as L.F. amplifier, 90-150.

This valve is marketed by the Marconi-Phone Co., Ltd., as "Marconi," and by the G.E.C. as "Osram," and retails at 10s. 6d.

## Orphean Cone Loudspeaker.

WE have received from the London Radio Manufacturing Co., Ltd., of Station Road, Merton Abbey, S.W.19, particulars of a new cone loudspeaker which was shown for the first time at the British Industries Fair, London.

The most striking feature of this speaker, which is of the circular "plaque" type, is its volume and purity of reproduction.

Although the design is simple and delicate, the whole is rigidly constructed. The outer ring, which is of polished bakelite, finished to represent burr walnut, measures 13½ in. diameter. The cone diaphragm is 9 in. in diameter, and is made of a light and strong fabric, finished in an artistic bronze.

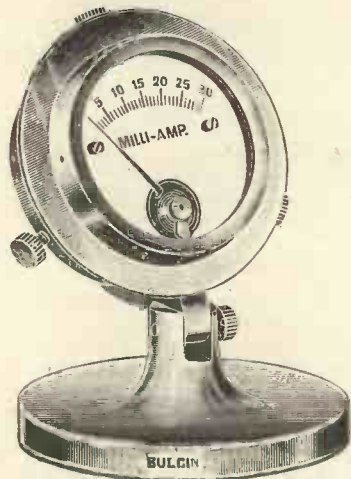
An interesting point, especially important at the present time, is that the complete instrument is made under licence and is fully protected by numerous patents of the Western Electric and Hopkins Corporation, controlled by Standard Telephones and Cables, Ltd.

This loudspeaker retails at £2.

## New "Deckrem" Product.

A NEW product, which promises to be a great success, has just been placed on the market by A. F. Bulgin and Co., of 9-11, Cursitor Street, Chancery Lane, E.C.4. This new line, which takes the form of a meter stand, fills a long-felt want experienced both by trader and experimenter. It is made to hold meters from 1½ in. diameter up to 3 in.

The retail price is 6s. 6d.



The "Deckrem" Meter Stand, which will be found invaluable to experimenters.

## Armitage Manufacturing Co.

WE have received from the Armitage Manufacturing Co., of 9, St. Stephen's House, Westminster, S.W.1, advanced particulars of a new portable which they will be marketing shortly.

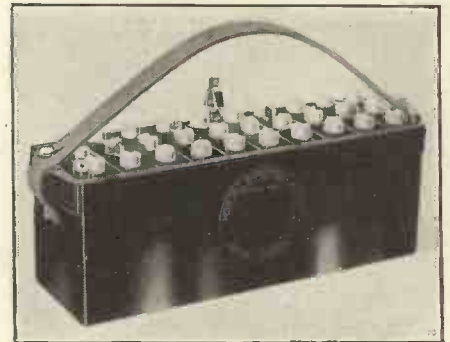
This receiver is a five-valver, and embodies several interesting features which should prove to make it an exceptionally good selling line. It is contained in a handsome walnut cabinet, at the top of which is fitted a fall front giving access to the panel. This panel contains one tuning dial, an on and off switch, and a volume control. Provision is made for fitting a gramophone pick-up. The lower portion of the cabinet has a fretted grille, and behind this a loudspeaker is situated.

Not only is this portable simple to operate, but it is claimed that a choice selection of both long and short wave stations can be obtained.

## C.A.V. Accumulator H.M.6.

THE latest pattern H.T. accumulator manufactured by C. A. Vandervell and Co., Ltd., Acton, W.3, is the "all-moulded" H.M.6 (60 volts).

Its construction offers increased facilities, for the exceptionally small dimensions of this 3,000 milliamp hours accumulator will be de-



This new C.A.V. Accumulator combines power, good appearance and compactness.

idedly appreciated where accommodation is inclined to be limited. The material of which the case is moulded has a handsome appearance, is leak-proof, and has high insulating properties.

The retail price is £2 2s. 6d.

## New "Geeko" Product.

ONE of the latest developments of the General Electric Co., Ltd., of Magnet House, Kingsway, W.C.1, is a combined H.T. accumulator and charger. This combination, by the simple movement of one switch, enables anyone possessing electric light to carry out his own H.T. battery charging. By the use of this the owner is also assured that his battery is obtaining just the right amount of charging current at the right and most convenient times.

The "Geeko" combined H.T. accumulator and charger is made in two distinct types, one for A.C. and the other for D.C. The A.C. model, which has just been placed on the market, is completely enclosed in a mahogany-finished cabinet fitted with a hinged lid. It is controlled by the simple change over of a two-position switch, the position being plainly marked "Radio" and "Charge." Connection to the mains is made

from a socket mounted on the side of the cabinet to a convenient lamp-holder or wall-plug.

An entirely new electrolytic rectifier is employed which gives off no fumes, remains perfectly cool, forms no sediment, is not poisonous or corrosive, and requires no attention.

The charger is independent of the frequency of the A.C. supply, the charging current being regulated by use of an ordinary metal filament lamp inserted in the holder mounted inside the cabinet. Running costs are very low.

The battery itself is composed of 50 two-volt cells giving a maximum of 120 volts. Each cell is of large capacity and thoroughly well made. Four tapping plugs and leads are supplied connected to four terminals mounted on the front of the cabinet.

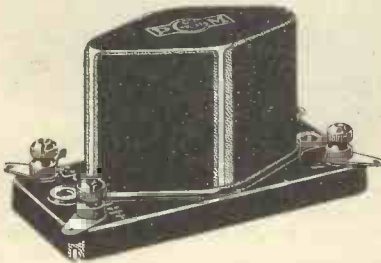
### Mullard "Permacore" Transformer.

MULLARD Wireless Service Co., Ltd., of Nightingale Works, Nightingale Lane, Balham, S.W.12, have recently produced a new transformer called the "Permacore," which has been produced with a view to eliminating a number of difficulties that have arisen in other L.F. transformers.

Although small in design, the "Permacore" offers new possibilities in the lay-out of home-constructed receivers, and is claimed to give all the bass notes that are required, unaccompanied by any shrillness. The amplification is large, smooth, and uniform from 250 cycles upwards, and below this limit it gives a large percentage of its amplification even at 50 cycles.

One of the outstanding features of this transformer is its iron properties, these enabling a strong D.C. current to be used in primary without saturation. The iron is not only specially treated and carefully prepared, but it is also carefully handled in manufacture to preserve its exceedingly high permeability.

In the majority of transformers resonance peak occurs at about 8,000-10,000 cycles; this is obviated in the "Permacore" by special



Great possibilities offer themselves in connection with this Mullard transformer, the "Permacore."

windings which eliminate all shrillness and give a true value to overtones and harmonics that occur at these frequencies. The primary is wound with silver, and the secondary with nickel.

This combination causes reduction of spreading resonance peak, and rapid drop of amplification of notes higher than 14,000, which means that H.F. and intermediate frequencies in super-het sets are not being amplified.

The retail price is 25s.

### Two "Trix" Valve Holders.

TWO new valve holders, one anti-microphonic, and the other rigid, have just been placed on the market by Eric J. Lever (Trix), Ltd., of 33, Clerkenwell Green, E.C.1.

Ample resiliency is obtained in the anti-microphonic model by the valve carrying portion being fitted on floating springs of metal strip, which are screwed to the base. The provision of a red anode indicator and a guiding groove enable the user to fit the

valve quickly and correctly. It retails at 1s. 3d.

The rigid type consists of a square base on which are mounted four sockets. As a guide for fitting the valve correctly, the anode socket is coloured red. The other three are indicated by letters marked on the base. The retail price is 1s.

### A. J. Dew and Co.

WE are informed by A. J. Dew and Co., of 33-34, Rathbone Place, Oxford Street, W.1, that they have recently added to their stock a special range of cabinets which form a combined cupboard and table. These are made in mahogany and oak, and are designed to accommodate any of the present-day receivers.

The cupboard has two shelves for storing batteries, wireless spares, or any other articles the user wishes to retain. The workmanship and finish are of the highest grade; in addition to the utility each cabinet forms a handsome piece of furniture.

Over-all dimensions are 28 in. wide, 14 in. deep, 30 in. high, and the retail price of the oak model is £5 3s. 4d., the mahogany model selling at £6 3s. 4d.

### G. E. Ambatielo.

DEALERS who are looking for a condenser combining efficiency with low price should turn their attention to a new variable condenser marketed by G. E.

Ambatielo and Co., Ltd., of Ambatielo House, Farringdon Road, E.C.1.

This is exceptionally well made of aluminium and ebonite. The fixed plates are rigidly constructed and secured by bolts to an ebonite frame. Great care has been taken in the assembly to see that the moving vanes are evenly spaced, while a pigtail is provided to ensure perfect contact.



An efficient and carefully constructed condenser made by G. E. Ambatielo & Co., Ltd.

Movements can be made by means of a "friction" device, which consists of a suitably mounted train of wheels. The centre spindle is held in cone bearings, so that adjustments are very smooth.

The capacity is .0005, and the vernier gearing is 100-1. Retail price, 7s. 6d.

## The W.R.A. Replies

We have been asked to publish the following letter, which, we understand, is a copy of a communication recently sent by the W.R.A. to the R.M.A.

Dear Sir,—We are directed to refer to your letter of February 16 last, and to express the great surprise of our Council at your statement that, if any members of your association have held aloof from our association's scheme to confine trade discounts to the trade, they have only followed the course recommended by the R.M.A. Our Council further consider that the demand therein contained (which is a repetition of a similar request put forward on a former occasion) for a list of the members of the association is wholly and entirely unwarranted, the names and addresses of members being purely a domestic matter.

In the opinion of our Council, the concern of your executive can only properly relate to the aims, objects, and policy of this association, and these are fully embodied in the "Wireless Retailers' Handbook," copies of which have been distributed amongst the trade, and a copy of which would always have been available to you on request. The policy and activities of the association, moreover, have been repeatedly published in the official organ of the association, which is available to all members of the trade.

### Misrepresentations.

For the information of your executive we are, however, desired to say that, in view of certain misrepresentations as to the membership of this association, the Council has in confidence submitted the list of members to the inspection of the several editors of the trade journals with the object of enabling the trade Press to assess at their true value any aspersions which may be made upon the *bona-fides* of members and any misleading statements which may be made with regard to the constitution of the association. A demand has already been made for a withdrawal of one such statement, which has since been retracted.

While it is felt that members will strongly object to any reflection on their ability to manage their own internal affairs

and will resent any inquisition by another association into their status, our Council wish to point out, in order once for all to explode malicious reports, that the credentials of applicants for membership have for several years past been personally examined by Mr. F. S. Horsey and Mr. H. C. Willard, who, as is well known, are respectively chairman and hon. treasurer of the association, and are, in addition, members of the Election Committee.

### Trade Discounts.

As a final word on this subject we are requested to state that one of the chief reasons influencing our Council in their present policy is that several individuals and firms have, on receipt of information concerning the association and its activities, indulged in covert action calculated to be detrimental to the association and used their efforts to prevent co-operation. That such proceedings are not countenanced by the mass of manufacturers is evidenced by the fact that approximately one hundred independent manufacturers have given their support and encouragement to the association's scheme for confining trade discounts to *bona-fide* dealers.

With regard to the extract from an article which appeared in THE BROADCASTER ELECTRICAL AND WIRELESS RETAILER, and to which the attention of your Council was drawn, the Editor points out in the current issue (March, 1928) of his journal that an incorrect interpretation was placed upon the words quoted.

In conclusion, we are to say that the association has always placed co-operation in the forefront of its policy, and our Council much regret that, while the great majority of manufacturers, including many members of the R.M.A., have invariably evidenced a desire to work in harmony with the W.R.A., the official attitude of your association continues to be antipathetic.

Yours faithfully,  
(Signed) CLIFFORD AND CLIFFORD,  
Hon. Secretaries,  
The Wireless Retailers' Association.



A merry company at the dance of the London Electric Wire Co., and Smiths, Ltd., which took place at Whitehall Rooms, Hotel Metropole, London.

## Radio Personalities

**T**HE sixth annual meeting of the Metropolitan-Vickers Long Service Association was held in the staff canteen at the Trafford Park Works on Monday, February 27. The chair was occupied by Major-General Sir Philip A. M. Nash, K.C.M.G., C.B., who was subsequently elected President of the Association.

Certain alterations in the rules were agreed to, and the election of officers took place.

A concert then followed, most items of which were provided by the M.V. Orchestra and the Male Voice Choir.

The membership of this Association can only be acquired by those who have served the company or its associated concerns for a period of twenty years, and it is worthy of note that one in every fourteen of the people at present employed is a member.

When the Association began in 1923 it had 302 members. In 1924 this had increased to 405, in 1925 to 509, in 1926 to 651, in 1927 to 779, and this year to 862.

At the end of the past year Mr. G. E. Bailey, director, qualified for membership, having served the firm in positions of gradually increasing responsibility till in 1927, when, as General Works Manager, he was given a seat on the Board.

Sir Arthur Whitten Brown, who made the first Atlantic flight with Sir James Alcock, qualified for membership a few days later than Mr. Bailey. At present he is the firm's manager in the Swansea district.

### Mr. S. Wilding Cole.

**MR. S. WILDING COLE**, the well-known Birmingham radio dealer, recently paid a visit to the United States and spent much of his time making himself closely acquainted with conditions of the wireless trade there.

What impressed him most was the widespread use which is being made there now

in mains-driven receivers. The bulk of sales of receivers was of this class, he found, and the use of such sets was much more advanced than it is in this country. Mr. Cole is, however, a firm believer in the future of the mains-driven set in Britain.

### Mullard Leap Year Dance.

**A** FANCY dress dance and carnival was held on February 27, in the Grand Hall, Wandsworth Town Hall, and was attended by more than 300 employees of the two Mullard companies. Prizes for the best fancy dresses and for a spot waltz competition were presented by the managing-director (Capt. S. R. Mullard).

### Mr. W. A. Gazard.

**MR. W. A. GAZARD** has relinquished his position with Chamberlain and Hookham, Ltd., in order to start a business as an electrical and wireless contractor at 30, Victoria Road, Erdington, Birmingham. He will be glad to receive catalogues and lists, and information concerning any lines requiring representation.

### A Loss for Liverpool.

**O**NE of the most well-known personalities of the Liverpool wireless trade, Mr. Jake Graham, who carried on business at Renshaw Street, passed away at the age of 63 years, after an operation at a Liverpool nursing home. A man of outstanding personality, Mr. Graham was, it is said, the first Liverpool man to ride a bicycle with pneumatic tyres.

In his younger days he appeared on the stage as a comedian and singer, under the name of "Jake the Unknown," and topped the bill at the Old Empire Theatre in Lime Street, when the names of Vesta Tilley and Wilkie Bard appeared in small print.

At the height of his theatrical fame, Mr.



Mr. L. H. Sharland, formerly of Beard and Fitch, is now on the staff of the Armitage Manufacturing Co.

Graham had a stroke, which compelled him to leave the stage.

When the phonograph was invented, he quickly interested himself in it, and eventually took over the premises in Renshaw Street which bear his name. He was alert to developments in radio, and from the earliest days of this trade took a live interest in its promotion.

### Mr. J. Paterson.

**MR. J. PATERSON**, well known in the wireless trade in Birmingham as manager of the radio department of the County Cycle and Motor Co., Broad Street, is a very keen experimenter, and during the past few months has been devoting a good deal of attention to television.

He is working in conjunction with a Birmingham chemist, and although their research had not, at the moment of writing, reached a point at which publicity would be advisable, it is permissible to say they are directing their efforts to the abolition or minimising of blurr in the transmitted images, and to the transmission of larger pictures than at present seems possible with the Baird system.

### A Correction.

In this feature in our last month's issue we referred to the Amplion agents in Argentina as Messrs. Christie and Harris. The name should have been Christie y Hnos.



A photograph taken at the McMicheal annual dinner and ball which was held recently at the Castle Hotel, Windsor.

# POWER FOR THE



The Exide type M.P.2, which weighs only 1lb. 10oz., and is exceptionally small.

### Ambatielo.

AMONGST the wide range of dry batteries marketed by G. E. Ambatielo and Co., Ltd., of Ambatielo House, Farringdon Road, E.C.1, one which will prove ideal for portable receiver is that 60-volt "Gold Label" brand.

This H.T. battery, instead of having the sockets attached directly to the carbons of the cells, has an insulated platform, relieving entirely any strain which must occur when the connection is made direct on the carbon rod.

Another interesting feature is a new system of testing which is described as "Dodge-proof." For employing this method, the 60-volt socket only is exposed, the negative connection being made through the eyelet hole at the side of the battery direct on to the zinc cell, the eyelet itself having no electric connection.

On account of the absence of pitch, this battery weighs less than most models.

The trade price of this 60-volt model is 4s. 6d.

### B.B.C.

OUT of the range of dry batteries manufactured by the British Battery Co., Ltd., of Clarendon Road, Watford, Herts, two types of H.T. battery in particular are suitable for use in portable receivers. These are the No. 12 W. 60-volt cabinet type, and the 14 W. 100-volt model, which is also a "cabinet" type.

These "cabinet" batteries are so called on account of their being contained in neat imitation mahogany cases. The 12 W. type is tapped at 5, 10, 15, 30, 45 and 60 volts, a pair of wander plugs being included. The size is 6½ by 5½ by 3½ in., an ideal size for inclusion in a moderate portable. The price is 8s. 6d.

The 100-volt model, No. 14 W., is 8 by 7½ by 3½ in., and is tapped at 15, 30, 45, 60, 75 and 100 volts. Selling at 14s. 6d.

An L.T. dry battery, for dull emitters, is also a popular product of this firm. This is known as No. 11 W., has a voltage of 1.5, and is 6½ by 2½ by 2½ in.—a very small and handy size for use in portables in which valves of the .06 class are employed. The price of this battery is 2s. 3d.

### C.A.V.

A SPECIAL non-spillable 2-volt accumulator is manufactured by C. A. Vandervell and Co., Ltd., of Acton, London, W.3. This should interest portable set manufacturers. Two types are available—

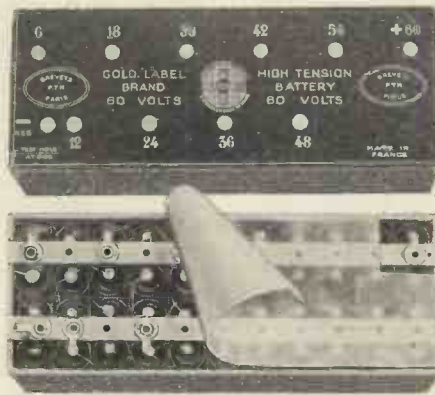
2 NS 13 and 2 NS 9. The first has a capacity of 16 amps. actual, and measures 3½ by 2½ by 4½ in. high. The price of this model is 15s.

Type 2 NS 9 is rated at 11 amps. actual, and measures 3½ by 1 25-32 by 4½ in. high. The price is 12s. 6d.

In these accumulators, a special jellied form of acid is used, enabling the cell to be used in any position without any fear of spilling. Moreover, the electrolyte always covers the plates entirely, remaining stationary, no matter at what angle the accumulator may be placed, an important feature in regard to portable use.

### Ediswan.

THE Edison Swan Electric Co., Ltd., of 123-5, Queen Victoria Street, London, E.C.4, manufacture an interesting accumulator, specially designed for use in portable



The "Gold Label" brand of H.T. battery manufactured by G. E. Ambatielo & Co., Ltd.

receivers. This is of the two-volt type, and is non-spillable. The accumulator is contained in a well-seasoned celluloid box, and there are two models available, of 20 and 30 amps. respectively.

The first-mentioned is 3 lb. 2 oz. in weight, its dimensions being 2½ long by 3½ wide and 6½ in. high. It is priced at 13s. 9d. The second is 4 lb. 4 oz. in weight, the measurements being the same with the exception of the length, which is 3½ in., the width and height being the same as the other model. This is sold at 15s. 9d.

These cells can, of course, be coupled together when a greater voltage is required. The terminals of these accumulators are made of acid-resisting material. There is also a large vent provided. Owing to their special construction and non-spillable properties, these accumulators are particularly suitable for export in portable receivers.

Another type of portable accumulator is made by this firm, and is known as the B.W.E. This is contained in an ebonite case, and is fitted with large acid-proof, unbreakable terminal nuts, large rubber vent plugs, and ribbed, perforated ebonite separators. They are made in many sizes, ranging from two-volt 10 amps. (actual) to six-volt 60 amps. (actual).

The size of the smallest is 4½ long by 1 1/16 wide by 7½ in. high, whilst the largest is 4½ long by 14 wide by 7½ in. high. The smaller sizes, however, are most suitable for portable use, and these also are recommended for export. The prices range from 9s. upwards.

### Edwards.

THE patent non-spilling accumulators made by Rowland Edwards and Co., of 317, High Holborn, London, W.C.1, are

very well known generally. Their special form of construction renders them exceptionally suitable for use in portables. Type "S" (formerly known as "D") is not only non-spilling, but non-splashing and non-creeping, this being ensured by reason of the patent device incorporated.

The accumulator can be used in any position, on its side or edge, and can be violently shaken without any fear of leakage.

Type E.L.2, a new model, has all the advantages of the older type. This type is specially suitable for portables of the suitcase pattern, in which an ordinary accumulator would be difficult to fit. Although the accumulator can be used on its side or in an upright position, the plates are always covered with acid.

The firm undertakes to make accumulators fitted with these patent devices, of almost any shapes or sizes to suit various designs of portable sets.

### Eskay.

TWO H.T. batteries eminently suitable for portable use are to be found amongst the "Eskay" range marketed by S. Kalisky (Aldgate), Ltd., of 75, Aldgate High Street, London, E.1.

These are a 60-volt and a 100-volt model. The 60-volt has a particularly large capacity coupled with comparatively small external dimensions, these being 5½ by 6 by 3 in. The price is 4s. 9d. to the Trade.

The 100-volt type is very little larger, its dimensions being 6 by 8½ by 3 in. This battery is fully guaranteed for six months, and it is priced at 8s. 9d. to the Trade.



The C.A.V. non-spillable accumulator, type 2N.S.B., with a capacity of 16 amps. actual.

### Ever Ready.

ONE of the most popular H.T. batteries made by Ever Ready Co. (Great Britain), Ltd., of Hercules Place, Holloway, N.7, is the 108-volt, No. W.17. A number of portable set manufacturers have adopted this type, which is contained in a metal case, and is on the heavy side.

The firm has, therefore, in order to meet the requirements of makers of portables, marketed a battery identically the same as the W.17, but contained in a cardboard case. This model is known as W.812.

The battery measures 10 by 5½ by 3½ in. high, and is priced at 21s. It is suitable for use in the following portable receivers:—McMichael, Pye, Gottlieb (R.S.V.P. 5) and Ormond, and many others.

For the Rolls receivers, the W.10, an H.T. battery of 63 volts. will be found suitable.

# PORTABLE

This measures 6 by 5 by 3 in. high, and costs 12s. 6d.

For the Halcyon there is the W.758, of 99 volts, measuring  $8\frac{3}{4}$  by 5 by  $3\frac{1}{16}$  in. high, priced at 20s. 6d. The Igranic sets are catered for by the W.22, having a voltage of 54, and measuring  $9\frac{1}{8}$  by  $4\frac{1}{8}$  by  $3\frac{3}{8}$  in. high, priced at 16s. 6d.

The W.656 is available for the Princeps receivers, being of 81 volts, and measuring  $7\frac{1}{2}$  by 5 by  $3\frac{1}{8}$  in. high. This model is priced at 15s. 6d.

The Zone Portable can be fitted with battery W.661, of 94.5 volts, measuring  $7\frac{1}{2}$  by  $5\frac{1}{2}$  and 3 in. high, and priced at 18s. 6d. This battery is tapped every cell up to 9 volts for grid bias, the remainder being tapped at 0.45, 60 and 85 volts.

The W.393 is suitable for use in the Langhan receivers. This battery, of 105 volts, measures  $10\frac{3}{8}$  by  $6\frac{3}{16}$  by 3 in. deep, and is tapped at every cell up to 21 volts for grid bias, thereafter being tapped at 81 and 105 volts for H.T.

The above range of H.T. batteries, covering a number of portable receivers, is fairly representative of the types required, but by no means completely exhausts the full range of Ever Ready batteries, which are suitable for portable use.

For L.T. use an accumulator is available, known as 2098, this being rated at 2 volts 35 amps. The dimensions are 3 by 4 by  $5\frac{1}{4}$  in. high. This model will be found particularly suitable for use in the Rolls receiver.

## Exide.

ONE of the most comprehensive ranges of unspillable accumulators is to be found amongst the products of the Chloride Electrical Storage Co., Ltd., of Clifton Junction, near Manchester.

The range comprises accumulators of varying shapes and sizes to suit any portable receiver. Each is fitted with the "Exide" unspillable device, forming an integral part of the lid, rendering the cells completely

*This being the age of the portable receiver, we have turned our attention in the following survey to accumulators and dry batteries of exceptional compactness.*

dimensions are  $2\frac{1}{4}$  in. long by  $2\frac{3}{8}$  in. wide by  $6\frac{1}{8}$  in. high, its weight being  $3\frac{1}{4}$  lb. The price is 15s.

The USP7 is a flatter type of cell, being 4 5-16 in. long by  $3\frac{1}{4}$  in. wide by 4 7-16 in. high. It is  $4\frac{1}{2}$  lb. in weight, and is priced at 17s. 6d. This cell is particularly suited for the following portable receivers: Burndept, Portable Utilities, "Enreka," "Celestion," "Orthodyne," and Pye (all models). The last three receivers mentioned use the USP7 as standard.

The USP7 M, fitted as standard to the McMichael portable, is exactly similar to the USP7, with the exception that the height is 4 in. instead of 4 7-16 in.

Type DO4, suitable for use in P.D.S. and Chakophone receivers, is of the upright type, somewhat similar in appearance to the DY4, its dimensions being  $2\frac{1}{4}$  in. long by  $2\frac{3}{8}$  in. wide by  $7\frac{3}{8}$  in. high. It weighs  $4\frac{1}{2}$  lb., and is priced at 17s. 6d.

An exceptionally small yet useful cell is the MP2, which measures 1 7-16 in. long by  $3\frac{1}{4}$  in. wide by 4 7-16 in. high. It is only  $1\frac{1}{8}$  lb. in weight, and costs 11s. The MP2 is extremely compact, and even when two



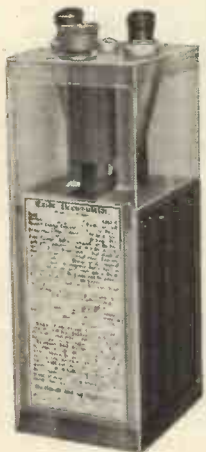
*This, the Exide type N.S.A., which weighs 3 lb., is suitable for use in the Marconi-phone receiver.*



*Edwards' type E.L.2, especially desirable for use in portable receivers of the suitcase pattern.*



*Left: The D.O.4 type Exide accumulator, weighing 4 1/2 lb. Above: Type S., of Rowland Edwards & Co., which is non-spilling, non-spashing and non-creeping.*



leak-proof, even under the severe conditions of shaking, tipping, or complete inversion.

These portable batteries are, moreover, designed not only with a view to saving space and weight, but have a comparatively large ampere hour capacity. All the types described below are 2-volts per cell.

Type DY4, which is fitted as standard in the B. and J. and Ripaults' receivers. Its

or three cells are used together the complete assembly is still quite small. This type, on account of its small size and unspillable properties, is used extensively by the police for belt-lamps.

A new series of cells, also fitted with the unspillable device, has lately been marketed, and these have a range of from 15 to 48 ampere hours capacity. There are four of these accumulators, known as NSA, NSB, NSC, and NSD. Type NSA, which is suitable for use in the Marconiphone receiver, is 1 13-16 in. long by 4 1-16 in. wide by 7 in. high, weighing  $3\frac{3}{8}$  lb. The price is 12s. 6d.

NSB is  $2\frac{1}{8}$  in. long by 4 1-16 in. wide by 6 in. high, weighing  $4\frac{1}{2}$  lb., and priced at 14s. This type is suitable for the Hart Collins and the Princeps Four receivers.

NSC is 2 3-16 in. long by  $4\frac{1}{4}$  in. wide by  $7\frac{1}{4}$  in. high, also weighing  $4\frac{1}{2}$  lb., the price being 14s. as before, while NSD, the largest of the series, with a 48 ampere hour capa-

city, measures 2 13-16 in. long by  $5\frac{1}{4}$  in. wide by  $6\frac{1}{8}$  in. high, and weighs  $8\frac{3}{4}$  lb.

The NSC type is fitted as standard in the following receivers: Creswick Atkinson, J. L. Gottlieb, Ormond, Cecil Sharp, Waverley, and Truphonic, while it can also be used in the M.P.A., Rees-Mace and Shore sets. The NSD is used as standard in the Halcyon portables.

This completes the present range of "Exide" unspillable accumulators, but the firm is at present designing at least four more types for various other portables which are not suitably fitted with batteries at the moment.

However, the range described above should fulfil the requirements of practically every other portable set constructor, the capacity range being from 8 to 48 ampere hours.

## Gecophone.

AMONGST the large range of batteries made by the General Electric Co., Ltd., of Magnet House, Kingsway, W.C.2, an L.T. dry battery, type L.4919, will be found particularly useful for employment in portable receivers. This battery is suited for .06 amp. valves. It has a total voltage of  $4\frac{1}{2}$ , and the cells are specially constructed to give a long life.

Three terminals are fitted, one at the positive end and one each at 3 and  $4\frac{1}{2}$  volts. When the battery is new, the 3-volt tapping should be used, but after considerable usage, when the initial voltage has dropped, a further period of useful life can be secured by using the  $4\frac{1}{2}$ -volt tapping.

## Geeko.

ALSO made by the General Electric Co., Ltd., is the "Geeko" L.T. accumulator, which will be found eminently suitable for portable receivers. The container is of thick transparent celluloid, fitted with special non-spilling vents, which are of such dimensions as to facilitate acid removal and filling. Non-corrosive terminals are fitted.

For the size and weight of this accumulator the actual amp.-hour capacity is remarkably high. The lightness and compactness of the 2-volt units of which the accumulator is comprised make it ideal for portable use.



The Lithanode free acid type with a capacity of 25 amps. used in the McMichael set.

**Hellesen.**

SUCH a comprehensive range of the "Genuine Hellesen" dry batteries are marketed by A. H. Hunt, Ltd., of H.A.H. Works, Tunstall Road, Croydon, that it is at first sight difficult to choose from the large number of types those especially suitable for use in portables. Three factors must be taken into consideration in regard to this, these being size, weight and capacity.

Two of the most popular "Genuine Hellesen" H.T. batteries at present are known as the "Wirin" and the "Wirup," of 60 and 99 volts respectively. Both these batteries satisfy the factors mentioned above to a greater degree than many ordinary dry batteries. The "Wirin," for instance, is 5 in. by 6 in. by 3½ in. high, and weighs only 4 lb. 2 oz. There is a tapping at every 4½ volts, and the price is 12s. 6d.

The "Wirup" type, of 99 volts, is 5 in. by 9½ in. by 3½ in. high, is 6 lb. 8 oz., and is also tapped at every 4½ volts. The price of this model is 21s.

On the L.T. side there is a host of excellent dry batteries for use with low consumption valves. Amongst these may be mentioned the "Glove," "Gloat," "Globe" and "Glint" types, which are suitable for portable use on account of their compact size and light weight.

These and several other types manufactured have a specially increased capacity which recommends their inclusion by makers of portables.

**Lithanode.**

AS the originators and patentees of the free electrolyte Lithanode unspillable batteries, the Lithanode Co., Ltd., of 190, Queen's Road, Battersea, London, S.W.8, can claim a unique experience of the manufacture of this type of accumulator device, which is now such an all-important item in regard to portable sets.

The firm is at present manufacturing a number of types of unspillable accumulators for use in many of the popular makes of portables. For the Rolls (old type) there is a battery, of the free acid type, measuring 6½ in. by 2½ in. by 4½ in. high, with a 35-amp. capacity.

Two other types, using glass wool, are made for the Rolls old and new patterns respectively. Both of these batteries are rated at 40 amps., the first measuring

5½ in. by 2½ in. by 4½ in. high, and the second 4½ in. by 3½ in. by 3½ in. high.

Another model, with a 25-amp. capacity, and of the free acid type, is made, suitable for the "Caydon," "Eureka," "British Curtis," "Pye" and "Langham" portables. The dimensions of this type are 4½ in. by 2½ in. by 3½ in. high.

For the McMichael set, an accumulator is available measuring 4½ in. by 3½ in. by 3½ in. high, being of the free acid type and having a capacity of 25 amps. Another type is available for use in the "Haleyon" sets, this being 5½ in. by 3 in. by 6½ in. high, having a capacity of 45 amps.

The "Langham" portable is provided for by another model with a 30-amp. capacity, the dimensions being 3¾ in. by 3 in. by 5¾ in. high.

A rather larger size is made for the Edison-Bell receiver, being 6½ in. by 2¾ in. by 4½ in. high, the capacity being 35 amps. For the "M.P.A." there is a model available, measuring 4½ in. by 2½ in. by 6 in. high, with a capacity of 25 amps.

The firm is prepared to manufacture at short notice any type, size or pattern of accumulator, fitted with the improved type of unspillable device, to the requirements of portable set makers.

**L.S.A.**

SEVERAL of the L.S.A. dry batteries, marketed by Thompson and Co., of 1 and 3, Old Swan Lane, London, E.C.4, appear to be suitable in connection with portable receivers. Of the normal type, No. 6260, a 60-volt battery, weighing 3.3 lb., is a



A useful type of L.S.A. battery which may be used for sets employing up to four valves.

useful size for sets employing up to four valves.

There is, however, a large capacity range of batteries from 30 volts to 120 volts. Although the last mentioned model is on the heavy side for portables, a 60-volt type, from the same range, should prove useful, weighing 8.3 lb. The price of this is 19s., and owing to its large capacity it can be used with sets employing from four to seven valves.

**Advertisement  
Advice Coupon**

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**Available during  
April 1928,  
only.**

In the L.T. class of dry batteries there are likewise two ranges available, of normal and large capacities respectively. In the normal class a suitable portable battery appears to be No. 9013, of three volts, weighing 5½ lb., and priced at 10s. 6d., intended to be used with sets employing from one to three valves.

In the large capacity range, suitable for one to five valve sets, No. 9001, of 1.5 volts, weighing 5 lb., and priced at 8s. 8d., appears to satisfy the requirements of portable set manufacturers in cases where low consumption values are employed.

**Magnet.**

MADE by the General Electric Co., Ltd., the "Magnet" type L.4912 L.T. dry battery of 1½ volts will be found eminently suitable for series connecting to form a 4½-volt battery. Its small size combined with its long life recommend it for portable use where low consumption valves are utilised.

**Marconiphone.**

AN attractive unspillable type of L.T. accumulator is marketed by the Marconiphone Co., Ltd., of 210-212, Tottenham Court Road, W.1. This is of the two-



No. B.549, the 2-volt unspillable type of L.T. accumulator marketed by the Marconiphone Co., Ltd.

volt size, contained in a strong celluloid case with a screw-down filler cap. The dimensions are 4 by 1½ by 7 in. high, and the weight, inclusive of acid, is 3 lb. 6 oz. The price of this battery, which is known as No. B 549, is 14s. 6d.

On the H.T. side there are three types of batteries suitable for portable use. No. B. 1570 is a 108-volt battery, measuring 10½ by 5½ by 3 in., and weighing 7 lb. 6 oz. The price is £1 1s. No. B.496, known as the "Popular" type, is also of 108 volts, and has smaller cells than the previous model. The dimensions are 10½ by 5½ by 3 in. The weight is 6 lb. 10 oz., and the price is 15s. 6d.

The third model, No. B.495, is rated at 81 volts, and measures 9 by 4½ by 3 in., the weight being 5 lb. 9 oz. The price of this is also 15s. 6d.

**Polo.**

AMONGST the range of dry batteries manufactured by the Polo Battery Manufacturing Co., Ltd., of 142, Moorgate Station Chambers, London, E.C.2, several models predominate as being suitable as regards size, weight and capacity for portable use.

For L.T. use the Polo "Case" batteries of three cells (4½ volts) or six cells (4½ volts) are extremely compact, and are ideal as regards space-savers. There is also a 1.5-volt L.T. battery which, although slightly larger, has a specially high output.

The usual range of H.T. dry batteries, for which long life is claimed, recommend themselves to portable users. The firm is prepared to make dry batteries in quantities to manufacturers' specifications.

**Primus.**

THE Primus Manufacturing Co., of 114-115, Great Saffron Hill, E.C.1, the makers of the popular "Primus Autocel" recuperative H.T. battery, are at present making special batteries to suit the requirements of portable set manufacturers.



These batteries are being constructed with a view to keeping down weight, and at the same time to possess a long life. The firm supplies these batteries direct to manufacturers and not to dealers.

**P. and R.**

**PETO AND RADFORD**, of 50, Grosvenor Gardens, London, S.W.1, have designed a number of accumulators to suit several well-known types of portable receivers at present on the market. Most of these accumulators are fitted with the firm's special indicating floats.

For the Gottlieb set the G.R.9 (non-indicating) or C.N.R.9 (indicating) type is available. This has a 30 A.H. capacity, the dimensions being 3½ by 2¼ by 6 11-16 in. high (overall height). The Rees-Mace receiver is provided for by either a non-indicating type of battery of 28 A.H. capacity, otherwise being of exactly the same dimensions as the previously mentioned G.R.9, or by an indicating type, also similar to the above, except that the length is 4 1-32 in.

For the Pye receiver there is the P.Y.11 (non-indicating) type of 23 A.H. capacity, the dimensions of which are 3½ by 3½ by 4¾ in. high. An indicating type, P.N.R.11, is also made, having the same capacity and being 4 1-16 by 3½ by 4¾ in. high.

The Whittingham Smith receivers are catered for, also, by an indicating and a non-indicating type. The non-indicating model, A.L.R.11, of 32 A.H. capacity, is 3½ by 2¼ by 7 5-16 in. high. The indicating type, of the same capacity, is 3½ by 2¼ by 7 15-16 in. high.

An indicating type, A.R.11S, is made for the M.P.A. portable, the dimensions being 3 11-16 by 2 3-16 by 6 in. high. The capacity is 25 A.H.



The Polo "Case" battery of 3 cells (4½ volts) made by the Polo Battery Manufacturing Co., Ltd.

The "Selectors" receivers are suitably furnished with either types, G.R.9 or C.N.R.9, described above, while for the Halcyon sets, type H.R.R.11 (indicating) of 48 A.H. capacity, and measuring 5½ by 2¼ by 6¾ in. high, will be found to suffice.

We are informed that list prices have not yet been decided upon, but these are shortly to be announced, for the benefit of dealers requiring replacements.

**Siemens.**

In order to meet the special conditions imposed on batteries for use in portable receivers, Siemens Bros. and Co., Ltd., of Woolwich, S.E.18, have designed several new models of H.T. dry batteries.

No. 1075 is rated at 126 volts, and measures 9¾ by 5¾ by 4 in. high. It is 12½ lb. in weight, and the retail price is 30s.

No. 1077 is of 108 volts, and is a special high capacity type. Its dimensions are

10 by 5 by 4 in. high, and it weighs 10½ lb the retail price being 25s.

Although the respective weights of these two models may appear to be rather high, it must be realised that they are high capacity batteries, and give a much greater output in proportion to their small additional weights and sizes over standard types.

Where, however, it is only possible to accommodate a small capacity type of battery, two further sizes are available.

No. 830 is of the 90 volt type, provided with grid bias tapplings up to 9 volts at the negative end, and is 9¾ by 5 by 3 in. high. It weighs 7 lb., and is priced at 20s.

No. 831 has 108 volts - capacity, and measures 10 by 5 by 3 in. high, weighs 7½ lb., and is priced at 21s.

**Sure-a-Lite.**

A NUMBER of H.T. dry batteries, of the "Sure-a-Lite" range, manufactured by the Battery Co., of 92, Hurst Street, Birmingham, stand out as being eminently suitable for portable use.

The following sizes are the most favourable in this respect:—No. 17, a 60 volt battery, 9¾ by 3½ by 3 in. high, priced at 7s. 11d. No. 17a, also a 60 volt, measuring 6½ by 5½ by 3 in. high, at the same price. No. 18 is a 90 volt type, measuring 11¾ by 4¾ by 3 in. high, priced at 12s. 9d.

No. 18a, also a 90 volt, measures 9 by 5½ by 3 in. high, and sells at the same price. No. 19 is a 100 volt type, its dimensions being 10½ by 5½ by 3 in. high, priced at 14s. 3d., while No. 19a, of 100 volts, measures 7¼ by 8 by 3 in. high.

In addition to these types, the firm undertakes to manufacture dry batteries to special specifications.

**Three Star.**

A COMPREHENSIVE range of new accumulators of the unspillable type is at present being placed on the market by Three Star Accumulators, Ltd., of Rosebery Avenue, Tottenham, N.17, these being specifically designed for use in portable sets during the coming season.

There are two ranges available, contained in either celluloid or ebonite cases. The following comprise the celluloid range, all being of 2 volt cells:—SY2, 8 A.H. capacity, 3½ by 1 5-16 by 4¾ in. high, weight 1 lb. 6 oz., price 10s.; SY4, 16 A.H. capacity, 3½ by 2 15-16 by 4¾ in. high, weight 2 lb. 5 oz., price 12s. 6d.; SYH4, 16 A.H. capacity, 2½ by 2 by 6 in. high, weight 2 lb. 5 oz., price 12s. 6d.; SY7, 28 A.H. capacity, 3½ by 4¾ by 4¾ in. high, weight 3 lb. 12 oz., price 16s. 6d.; UCL3, 21 A.H. capacity, 4½ by 2 by 5¾ in. high, weight 2 lb. 15 oz., price 16s.; UCL4, 28 A.H. capacity, 4½ by

2 9-16 by 5¾ in. high, weight 3 lb. 11 oz., price 18s. 6d.; UCL5, 35 A.H. capacity, 4¾ by 3½ by 5¾ in. high, weight 4 lb. 7 oz., price 21s.; RCL4, 36 A.H. capacity, 5¼ by 3 by 5 in. high, weight 5 lb. 3 oz., price 21s.

Three types comprise the models in ebonite containers as follows:—NEL3, 27 A.H. capacity, 5 5-16 by 2¼ by 6 in. high, weight 4 lb. 12 oz., price 18s. 6d.; NEL4, 36 A.H. capacity, 5 5-16 by 3¼ by 6 in. high, weight 5 lb. 15 oz., price 21s.; NEL5, 45 A.H. capacity, 5 5-16 by 3 13-16, by 6 in. high, weight 7 lb. 2 oz., price 24s.

**Tudor.**

IN order to meet the demands for unspillable accumulators by portable set manufacturers, the Tudor Accumulator Co., Ltd., of 2, Norfolk Street, Strand, W.C.2. have introduced a special one-way acid trap which



The CLXR cell, introduced by the Tudor Accumulator Co., which remains unspillable in whatever position it is placed.

can be fitted to several of their existing models.

The following are the 2-volt cells which can be so fitted:—

Clh 3, measuring ¾ by 4¾ by 7¼ in. high, weighing 2½ lb. and costing 8s. 6d.; Clh 5, measuring 1½ by 4¾ by 7¼ in. high, weighing 4 lb., and priced at 11s.; Clh 7, measuring 2¼ by 4¾ by 7¼ in. high, weighing 5½ lb., priced at 13s. 6d.; and the Clh. 9, measuring 2½ by 4¾ by 7¼ in. high, weighing 6½ lb., priced at 16s.

It should be noted that the weights given are of the cells without acid, and the prices are for cells dry charged, without acid.

The above four accumulators can be fitted with the one-way trap, screw-in vent and filling plug, at an extra price of 2s. 6d. per cell.

The firm also manufactures a special unspillable accumulator designed primarily for portables. This is unspillable in any position, and its size and weight are such as to permit of its use in many popular makes of portable. This accumulator is known as the CLXR. There are four types—CLXR 7, 9, 11, and 15. The smallest, CLXR 7, is 2½ by 4¾ by 5 in. high (overall), and weighs, without acid, 3 lb. The price, dry, is 12s.

The largest size, CLXR 13, is 3½ by 4¾ by 5 in. high (overall), and weighs 5 lb. 5 oz., the price, dry, being 18s. The other two models, which are intermediate in size to the two described, are priced at 14s. and 16s.

# IN THE COURTS

## LA RADIO TECHNIQUE.

MR. JUSTICE TOMLIN, in the Chancery Division on March 15, had mentioned to him an action by La Radio Technique, a French company, against Philip and William Weinbaum, of Sidney Square, Mile End, E., for injunctions restraining infringement of the plaintiffs' trade mark for wireless valves, restraining the sale under the descriptions "Radiomicro" and "Radiomicro Special," of valves so closely resembling the plaintiffs' goods as to be calculated to deceive, and also restraining the use of cartons for packing the valves which were a colourable imitation of the plaintiffs' cartons.

Mr. Corsellis, for the plaintiffs, said an agreement had been reached. The defendants were prepared to assent to judgment on agreed terms, and they would pay £155 as costs.

His Lordship said the injunction with regard to the cartons would be to restrain the use of cartons for the sale of goods, not the plaintiffs, got up in a form calculated to the belief that the goods were the plaintiffs'.

By consent, injunctions would be granted and there would be an order for the payment of the agreed sum for costs, and for the delivery up of all infringing articles.

## THE SFERAVOX ACTION.

IN the Chancery Division on March 2, before Mr. Justice Clauson, Mr. J. Mould applied on behalf of the Société Française Radio Electrique, of Paris, for an injunction against the Standard Telephones and Cables, Ltd., to restrain threats against an alleged infringement of letters patent.

Counsel stated that the action arose under section 36 of the Patents Act, and the section contained a proviso that it did not apply if an action for infringement of patent was commenced and prosecuted with due diligence. Since the motion was made to his Lordship last week, defendants had issued a writ against Messrs. Duncan, Watson and Company, retailers of the Sferavox loudspeakers, manufactured by the plaintiffs, and therefore counsel did not desire to proceed with the motion.

Both sides had agreed that, as defendants had commenced proceedings for an injunction and damages against Messrs. Duncan, Watson and Company, in respect of an alleged infringement of letters patent by the sale of Sferavox loudspeakers, all proceeding in the present action be stayed, pending the result of the other action. The costs of the motion would be reserved.

Counsel for the defendants agreed to the motion being stayed.

## "ANDIA" ADVERTISING.

THE price of publicity of Andia wireless loudspeakers was the subject of an action heard by Mr. Justice Salter in the King's Bench Division on March 19, the plaintiffs being Messrs. Thomas McDougall, Ltd., advertising agents, Kingsway, London, and the defendants Artandia, Ltd., Bedford Street, Strand, London. The plaintiffs claimed £125 2s. 11d., the cost of producing 10,000 copies of an illustrated catalogue, advertising an exhibition at Selfridge's store of various designs of the Andia loudspeaker.

The defence was a denial of liability, defendants' contention being that the catalogues were not ordered by the company, but by the Marquis de Andia, who was not authorised to incur the debt. It was also pleaded that the catalogues were never delivered to the defendant company.

Lord Redesdale, chairman of the de-

fendant company, said the directors were unaware that the Marquis de Andia had given an order to the plaintiffs for catalogues.

Giving judgment for the plaintiffs for the amount claimed, with costs, his Lordship said the defendant company was formed by the Marquis de Andia, the inventor of certain wireless loudspeakers, for the purpose of exploiting his invention. The company did not manufacture, but advertised and distributed the loudspeakers. His Lordship had come to the conclusion that the Marquis was authorised on behalf of the company, and there was evidence that they ratified the order.

## GENERAL RADIO CO., LTD.

IN the Companies Winding-up Court on March 5, Mr. Justice Eve had before him a petition by H. Clarke and Company (London), Limited, of Milton Street, City, for a compulsory order to wind up the General Radio Company, Ltd.

Mr. Beebee, for petitioners, said the respondent company was prepared to call a meeting of creditors and inform them as to an arrangement being made which might include the payment of the unsecured creditors in full. If that statement could be supported the petitioners would not desire to proceed with the petition. In

those circumstances he suggested that the petition should stand over for a fortnight. In the meantime the petitioners might be satisfied.

Counsel for the company said a receiver and manager had been appointed on behalf of the debenture holders, and he was in negotiation for the sale of the assets and goodwill at a very satisfactory price. If possible it was desired not to injure the goodwill.

Mr. Swords said he appeared for a creditor of £1,500, who supported the petition, but did not object to the adjournment.

His Lordship adjourned the petition.

## A Committee of Inspection.

At the adjourned hearing before Mr. Justice Eve, Mr. Beebee, for the petitioners, said the petition had been standing over in order that a meeting of creditors might be held so that their views should be known. At the meeting a resolution was passed requesting that the petition should be adjourned for a further month while negotiations for the sale of the assets proceeded.

Mr. Braund, for the company, said that seven of the largest creditors had formed themselves into a committee of inspection, and the largest creditor had become a member of the board. In these circumstances the company was very hopeful that the negotiations would go through and the creditors would be paid in full.

His Lordship directed the petition to stand over until the second petition day of next sittings.

# Association News

## Bristol Activities.

At the inaugural meeting of the Manufacturers' and Wholesalers' Section of the Bristol Radio Traders' Association, the following officers were elected:—Chairman, Mr. E. H. Burris; hon. treasurer, Mr. C. G. Rogers; hon. secretary, Mr. F. A. R. Griffiths; committee, Messrs. J. Lovell, V. Burkitt, L. W. W. Davis, W. L. Richards, W. J. Walter and F. W. Fifield. A set of rules was placed before the meeting and adopted.

The membership is restricted to manufacturers and wholesalers having an address in Bristol and district. The policy to be adopted is to promote a healthy spirit amongst the trade generally.

It is suggested that the Association shall become a member of the Bristol Chamber of Commerce. This section will not deal with matters relating to retail prices, trade terms or selling conditions.

## Portsmouth Wireless Traders' Association.

The first annual meeting of the Portsmouth and District Wireless Traders' Association is to be held at the Crystal Palace Hotel, Fratton Bridge, Portsmouth, on April 5.

In connection with the compilation of a list of approved suppliers, there are some members who have not yet volunteered the information of their sources of supply for inclusion in the first list, which it is desired to issue as soon as possible. There has been a very good response from the manufacturers, and a representative list of local approved dealers can now be prepared.

## Durham and the W.R.A.

It would seem that there is a greater possibility of a branch of the W.R.A. being formed in Durham. We understand that a meeting is shortly to be held to consider the advisability of inaugurating a branch, and wireless traders will be asked to give their support.

Certain circumstances which have arisen during the past few weeks may have a material effect on developments in this direction. The Durham Radio Association at present is contending with cases of foreign

components being sold by certain members of the Association who, by the way, have a rule which places a ban on the sale of foreign makes of components, particularly valves.

This symptom of dissatisfaction, coupled with the fact that the volume of trade—until recently very good—shows signs of gradually falling off, should prove a favourable factor in determining a decision by Durham traders to form a W.R.A. branch.

## A Monmouthshire Association?

Newport wireless traders are anxious to form a branch of the Wireless Retailers' Association in Monmouthshire. Mr. H. B. Wimslow, of the Newport Electrical Co., Ltd., intimated to a BROADCASTER correspondent that he would be prepared to act as secretary to a local branch of such an association.

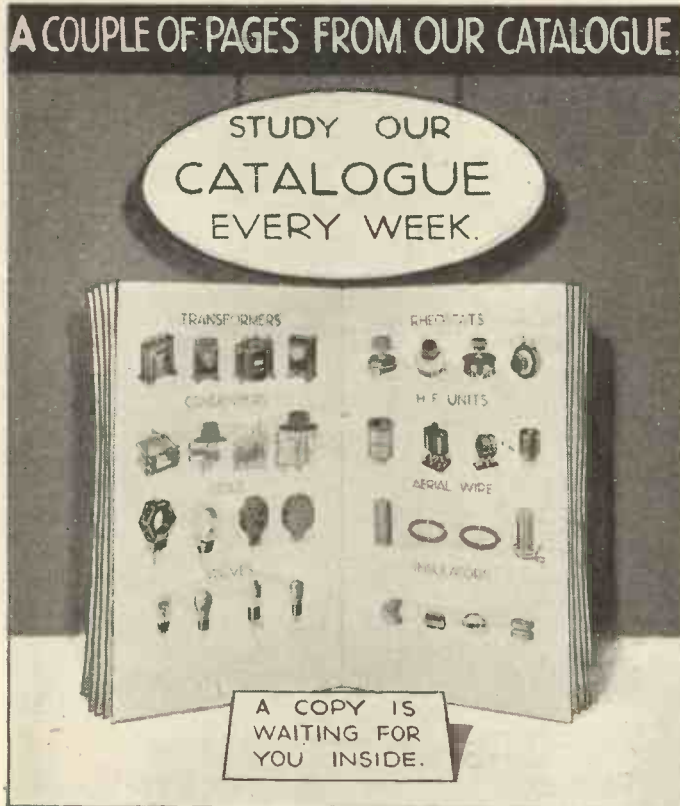
With an enthusiastic leader, Newport should not be long in making a move in this important matter. The extensive dockyards, steelworks and factories inside, and the collieries just outside the town, are fertile fields for the dabbler and price-cutter.

## Ulster Retailers and Wholesalers.

Considerable criticism has been offered within recent months on the activities of the Ulster Wireless Traders' Association. The principal criticisms were directed to wholesalers and retailers being in one complete section, and to the inability of the retailers to prevent the wholesaler selling to the public.

More than one retailer in Ulster notified his willingness to join a purely Retailers' Association, but would not join the main parent body while such abuses continued unchecked. As a result of these criticisms, a big meeting of the U.W.T.A. was held last month, and traders of standing were invited to be present and air their views. It was decided that the present association should be formed into two distinct sections—wholesale and retail.

It was further resolved that each section should hold its meetings separately, save on such occasions as questions were involved which affected the trade as a whole.



Left: An ingenious sales-aiding method of displaying your components and of drawing attention to your catalogue. Below: The popularity of the portable gives much scope for boosting suitable batteries—a novel and striking method is suggested here.



# Brighter Windows AND BETTER BUSINESS

by R. D'Estrange

**A** LONDON wireless dealer recently wrote to me in the following terms:—"Dear Sir:—Well over 50 per cent. of my business is done in cheap components. My shop is situated in — Lane, a little alley off — Street, and most of my customers make a special journey to see what I have in my window. With this in mind, would you advise me to go in for the specialised displays you advocate, or would you say: 'Do the same as almost all other dealers do and have a window full of interesting, popular and saleable articles arranged in tiers one against the other?'"

Our friend is certainly fortunate in having a number of people who know his shop and who make a special journey to see his window. As for the best means of display, it depends largely on the district and the type of passer-by. In the ordinary way a display has to accomplish three things: it has to arrest attention, to arouse interest and to compel action.

My correspondent has no need to bother about the attention and interest items. In his case the interest is already there, and all he has to do is to compel action. This being so, I should certainly advise our friend to use the general method of appeal, namely, to show as many lines as possible without overcrowding the window.

### Create an Impression!

But we must remember that very often it is impossible to compel immediate action. A city clerk may come and look at the window on Wednesday. He may pick out

the component or components he requires, and then he may prefer to leave the actual purchase until his next pay-day.

For this reason there must be something left lingering in his mind; he must have an impression of your display which will make him come back to your shop without being tempted to go to a nearer shop to buy the same component that he saw in your window. If your display is of the same type as the majority of others he will have nothing in particular to remember.

### Orderly Arrangement.

Goods must, moreover, be well contrasted with the background and well classified. The last point is highly important. Devote a separate row to each kind of components, and make your arrangement of these rows as orderly as possible, so that the observer has no difficulty in finding the particular part he requires. Haphazard grouping of components is one of the greatest mistakes made.

Arrange your components in orderly groups, label each group and show the price of each item. For the benefit of my correspondent I am reproducing a "catalogue" display that may appeal to him and that will help him to change his display week after week without any fuss or trouble once the initial work is done. I should like him to inform me how the method suits his purpose and what he thinks of it.

The first display is designed for the dealer whose premises are well known and whose window is being regularly inspected. The background is royal blue crêpe, the window

floor is orange. The whole of the window space is occupied by a large sheet of cardboard or a wooden structure painted to represent an open book. This can be made a rigid affair with the components wired to the wood. Clips may also be used. The idea is to show open pages of a catalogue. Lay out your components in orderly rows, just as they would appear in your catalogue, and label each row as shown. A price ticket should be attached to each component.

If a complete line of a well-known manufacturer is shown the labels can take the form, "Blank's Transformers," "Blank's Coils," etc. Prepare a printed replica of your window "catalogue," it needs only to be a four-page folder, and place a show-card in the window, "A copy is waiting for you inside."

The second display is intended to sell replacements—H.T. and L.T. batteries for portable sets. The background is blue crêpe with an orange half-disc in the centre having radiating orange streamers. The window floor is terraced as shown, and is draped with orange crêpe.

Fix the two long showcards, "Unspillable—they won't leak!" and "Light batteries for heavy work," in position, as well as the two smaller strips "High tension." Now start dressing from the front. Place the two portable sets, with their batteries showing.

### Some Good Catch-phrases.

Place the strip "Low tension" in front, and arrange the six accumulators in position. Build up the two groups of H.T. batteries on the first step of the terrace and display the remaining accumulators in the centre. In order to emphasise the idea of the accumulators being unspillable, place some of them upside down. On the last step place the third portable set as shown. You will notice that the half-disc in the centre bears the words, "Portable energy for —." The name of the portable sets supplies the rest of the sentence, and the whole reads: "Portable energy for portable sets."

# Tested for the Trade

	Marks.
Allwave Four Receiver	8.75
Anderson's Cone Unit	8.75
Dionoid Accumulator	8.5
Ferranti Transformer	9.25
Ferranti Trickle Charger	9.0
Gecophone Pick-Up	9.25
Lotus Battery Switch	9.0
Marconi-Osram Valves	9.25

## TEST AWARDS. Highest Possible: 10.

**Highest Awards this Month—**  
**Ferranti A.F.5 Transformer.**  
**Gecophone Pick-Up.**  
**Marconi-Osram Valves.**  
**R.I. and Varley Eliminator.**

	Marks.
Nesthill Turntable	7.75
Polar R.C.C. Unit	8.5
Radion Valve	8.5
R.I. and Varley Eliminator	9.25
Ripaults Battery	9.0
Star Universal "C.T." Tuner	8.25
Stewart Warner Loudspeaker	6.5
Wadco Valve	8.0

### Lotus Battery Switch.

Manufacturers: Garnett, Whiteley and Co., Ltd., Lotus Works, Broadgreen Road, Liverpool. Price 1s. 6d.

THE Lotus push-pull switch has one or two novel features which are of outstanding interest. The metal parts of the switch are mounted on an oval moulded base, and the usual spring legs are placed one on each side of a plunger.

A pleasing feature is that the two contact arms are recessed into the moulding so that they cannot shift out of position. The plunger is arranged with a specially shaped ball so that a definite "off" and "on" position is made.

Only one hole is needed for fixing. All the metal parts are nickel-plated. A well designed control knob is supplied with the switch.

**Working Efficiency.**—On test the switch proved to be one of the best we had tried, for an unusually good contact was made. It is robust and should stand any amount of hard work.

**Selling Points.**—The design of this switch is well thought out, and the price is moderate.

### Polar R.C.C. Unit Yellow Seal.

Suppliers: Wingrove and Rogers, Arundel Chambers, 188-9, Strand, W.C.2. Price 12s. 6d.

THE new Polar unit is almost identical in appearance to the other units which have proved so popular.

The condenser is apparently housed within the base, which is composed of a moulded substance. The resistance unit is wound on another portion of the same moulding which extends vertically from the base. Compactness is one of its chief features, for it takes up very little room in the receiver, and it should be found to be extremely suitable for portable sets. The workmanship is highly satisfactory.

**Working Efficiency.**—On test in the first stage of amplification following a high Mu valve such as the Six Sixty R.C. 210 or Mullard P.M. 1A, the results were excellent and the range of even amplification was very wide. The cut-off at either end of the scale was very low and also quite high up, so that good fidelity of reproduction was obtainable. At 300 volts D.C. the condenser showed no immediate signs of breakdown.

**Selling Points.**—This unit is very efficient, while size and weight are important points in its favour.

### Nesthill Turntable.

Suppliers: A. J. Dew and Co., 33-4, Rathbone Place, Oxford Street, W.1. Prices: 6 in., 7s. 6d.; 8 in., 10s. 6d.

THE directional qualities of the portable receiver have led to the introduction of the turntable, a number of which are now on the market. The latest is one which has been supplied by A. J. Dew and Co.

This turntable consists of two metal plates secured at the centre to one another and arranged so that they will revolve on ball bearings.

Each plate has a piece of baize glued to it. One plate is provided with four holes so that

### How the Awards are Made.

Owing to the fact that a certain amount of misunderstanding appears to exist in connection with our Test Awards, we give below brief details.

Maximum, 10 marks.

Points or fractions of points are deducted for every deficiency found on examination. These deductions are made for any deficiency under the following headings: Electrical, mechanical or radio efficiency, price (in competition with other makers' goods), discounts, sales possibilities. Under this latter heading come publicity and advertising; that is, advertising from a wide point of view and including technical, trade, and public lay Press, posters, showcards, publicity competitions, etc.

Marks may be added for super-excellence in connection with any one of these points.

Inefficient apparatus cannot obtain more than 5 marks. Satisfactory but not very high-grade or quick-selling products will obtain between 5 and 7 marks. An article awarded 7 to 8 marks is good. Products with a high standard of excellence will obtain between 8 and 9 marks. Any item obtaining over 9 marks will be of outstanding merit.

the turntable may be secured to the bottom of the set.

**Working Efficiency.**—On test we found the turntable to be quite efficient and that it revolved quite easily. We think, however, that the 6 in. size is rather too small; the 8 in. turntable, we think, would be more satisfactory for the usual sized portable set.

There was one point that we did not particularly like, there being a likelihood of the baize coming away from the metal, and in fact this actually happened almost as soon as we received the turntable, although every care was taken. Some more satisfactory method of attaching the baize to the top and bottom of the turntable is very desirable.

### Ripaults' Self-Regenerative Battery.

Suppliers: Ripaults, Ltd., Kings Road, London, N.W.1. Price, 99 volts, 16s. 6d.

THE battery has tappings which are only accessible through small holes in the cardboard carton, and the actual voltages are printed beside the holes. We have previously recommended this method of manufacture, as many constructors are careless when putting down their tools, and often with the open type of battery several of the cells are short-circuited by coming into contact with metal instruments. Externally the workmanship is of the highest possible merit.

**Working Efficiency.**—This is a battery of outstanding merit. We would assume that the maximum current which may be taken from this battery would be about 5 milliamps, but as the majority of sets take considerably more than this, we have discharged this battery at the abnormal rate (that is, for a battery

of the small cell type) of 12 milliamps for four hours per day for a period of 10 days.

At the same time, we have had on test another battery of very well-known make which is also of the small cell type. This battery was placed on test for the same period as the Ripaults battery, while the current consumption was identical. After some 10 days voltage tests were taken, and the Ripaults, although having dropped, was about seven volts higher than the other battery—a performance which surprised us not a little.

**Selling Points.**—Judging from our short test, which, nevertheless, has been a severe one, we think that we are safe in saying that the Ripaults battery is an excellent achievement, and for this reason we would imagine that the sales will be very good indeed. The price of the battery is very reasonable for so good a production.

### Radion Valve.

Manufacturers: Radions, Ltd., Bollington, Macclesfield.

THIS valve has been designed for high-frequency amplification, and for this reason has a comparatively high amplification factor and a fairly low impedance. The amplification factor is 20, while the impedance is 27,000 ohms; the current consumption is .25, and the filament is stated to operate on five volts.

The valve has rather a large plate and grid with a "V"-shaped filament. The three electrodes are mounted vertically. We were pleased to note that the four split pins were nickel-plated. It will be remembered that we criticised the brass pins of previous Radion valves. This is, of course, a minor detail, but one to which some buyers attach importance.

**Working Efficiency.**—We found the valve to be eminently suitable for H.F. amplification, especially where tuned anode coupling was employed. It also gave very satisfactory results with transformer coupling, particularly where the inter-valve capacity between the plate and grid was neutralised. The filament consumption and working voltage were found to be substantially accurate, while up to 120 volts could be used on the anode.

**Selling Points.**—The valve appears to be robust, and should sell well.

### Marconi-Osram D.E.H.L. 610 Valve.

Suppliers: General Electric Co., Magnet House, Kingsway, W.C.2, and the Marconiphone Co., 210-212, Tottenham Court Road, W.1. Price 10s. 6d.

THIS valve is designed for general purposes. The anode is of the box-shaped type, and this, as well as the other electrodes, is mounted horizontally. The A.C. resistance is approximately 25,000 ohms, while the filament voltage is 2 and the filament consumption .1. The amplification factor is 15.

**Working Efficiency.**—On test we found the valve to be highly efficient in every respect and it operated particularly well as an H.F. amplifier, especially where tuned anode coupling was employed. It also performed excellently in the detector stage with the grid connected to the positive filament limb. In

the first stage of low frequency amplification the results were also satisfactory.

Up to 150 volts anode potential could be used, and we found the filament voltage and current consumption to be accurate.

**Selling Points.**—This is an excellent general purpose valve, and it should have a wide appeal.

**Ferranti Trickle Charger.**

Manufacturers: Ferranti, Ltd., Hollinwood, Lancs. Price 55s.

IT has been recommended by the Technical Press on many occasions that all users of accumulators for low-tension supply and who have A.C. mains available should use a trickle charger—a type of instrument which gives a small charge to the accumulator and can be left on for a very long period without any possible damage to home, person or accumulator.

Unfortunately, there have been no really satisfactory instruments on the market, but one that has been recently produced by Ferranti, Ltd., should undoubtedly sell in very large numbers.

This is known as a "Permanent Trickle Charger," and the model sent to us is suitable for 200-250 volts A.C. mains where the periodicity is between 40 and 60 cycles. Another model is made which is suitable for 100-130-volt mains.

The former incorporates a metal rectifier and a Ferranti transformer so that there are no valves, chemicals or moving parts of any description. The unit is contained in a metal case, with a brown crystalline finish. Four terminals are provided, one to be connected to the negative of the accumulator and the three others marked positive 2 volts, 4 volts and 6 volts. These are provided so that either 2-volt, 4-volt or 6-volt accumulators may be charged. The D.C. output is half an ampere. The external finish of the unit leaves nothing to be desired.

**Anderson's Cone Unit.**

Suppliers: Anderson's Wireless Sales Agency, Ltd., 39, Farringdon Road, E.C.1. Price 14s. 6d. approximately.

THIS cone unit is apparently of orthodox design with the reed placed in close proximity to the magnet. The unit is well made and is held in a metal oxidised finished casing. There is a large nut at the back for adjustment purposes, this being of convenient size and shape and nickel-plated.

In the model sent to us the nut was very tightly held and was somewhat difficult to adjust. We suggest that this should be made easier.

The reed is provided with two clamping washers, one being fixed by means of a set screw and the other being tapped. The whole unit is well made, while there is a silk-covered flex with pin tags at the end provided for connections. We suggest that terminals should be mounted on the unit to enable the constructor to use any length of cord he requires.

The constructor has access to the inside of the unit so that he can take the wire off himself if necessary, but this is a delicate operation and is not particularly desirable.

**Working Efficiency.**—On test very satisfactory results were obtained. The unit was quite sensitive, and the reproduction was in every respect normal. It reproduced well over a wide range.

**Selling Points.**—This unit is well made, quite efficient, and should reach a fairly wide market.

**Wadco Valve.**

Suppliers: W. A. Davies, 10, Cloth Market, Newcastle. Price 9s. 6d.

THIS valve is of conventional design with a moulded cap and the four split pins placed in the usual manner. We should have preferred to have seen these nickel-plated. The anode is of the cylindrical type, and this, together with the filament and grid, is

mounted vertically. The impedance is in the neighbourhood of 12,000 ohms and the amplification factor 7, while the filament is rated at 1.8-2 volts and the consumption .25 amperes.

**Working Efficiency.**—On test we found this valve worked satisfactorily in the last stage of amplification using it as a power valve, for which purpose we understand it is intended. It handled a fair amount of volume without distortion, and up to 120 volts on the anode could be used. We found that the best filament voltage was 2 and the current consumption .24 amp. For a cheap valve the results were quite satisfactory.

**Selling Points.**—The price of the valve is low, and, therefore, as the results are good, it will appeal to the class who only have a limited amount of money to spend.

**Stewart-Warner Loudspeaker.**

Manufacturers: The Cooper-Stewart Engineering Co., Ltd., Stewart House, 136-7, Long Acre, W.C.2. Price £6 15s.

THIS loudspeaker is rather unusual in design. It is contained in a metal case and is unusually heavy.

It is circular in shape, and stands upon a base also of metal, and the whole is finished in a dull sage green.



The Stewart-Warner loudspeaker introduces a design of an uncommon description.

The front metal work consists of an artistic design of two dancing figures. The loudspeaker is not adjustable.

**Working Efficiency.**—On test the results were not particularly pleasing, the volume, in comparison with our standard (a cone speaker of approximately the same price), was rather poor and the tone was somewhat muffled. The reproduction of the bass notes was not good, but on the upper register the results were fairly satisfactory. However, judging the speaker from the reproduction point of view, we consider that the price is rather out of proportion to the results. The design of the speaker is outstanding, and this probably accounts for the cost.

**R.I. and Varley H.T. Eliminators.**

Manufacturers: R.I. and Varley, Ltd., Kingsway House, 103, Kingsway, W.C.2. Price £6 15s. DU valve £1 10s. Royalty 12s. 6d.

THIS is a very well designed unit which may be used with extremely large sets, and which has been designed with the greatest care and skill. A full-wave rectifier is used, and Mullard rectifying valve DU2 is included as part of the equipment. The transformer and the smoothing choke are both of excellent design. The condenser pack is also of very substantial construction, and we understand that the total capacity is about 11 mfd. There is also a rheostat for controlling the filament

of the DU2 so that the total output voltage may be regulated at will.

The unit is completely enclosed in a metal case which is finished in crystalline black, there being also a lift-up lid which will give access to the interior of the eliminator. On the side is an ebonite strip upon which are mounted six sockets, one of which should be connected to earth, one to H.T. minus, and the others to four positive tapings—one rated to give from 140-210 volts for the maximum tapping, and the minimum tapping 30-36 volts. 75-100 volts is obtainable with the second highest tapping and 40-45 from the remaining socket. The voltages depend, of course, on the current consumed by the set.

The unit can be used with 100-120 volts or 200-250 volt A.C. main, where the periodicity is between 40 and 100 cycles.

**Working Efficiency.**—On test the results were quite as good as we expected, and we expected a great deal, judging by the excellent workmanship of the interior. The output was almost exactly the same as rated by the manufacturers. With a seven-valve receiver we could not detect the slightest trace of hum, even when no transmission was being received, which we think speaks volumes for the excellence of the unit.

**Selling Points.**—This unit is efficient, of high-class workmanship, and retails at what we consider is a very moderate price for such a high-class product. Those traders who are in districts where A.C. mains are available should certainly get into touch with the manufacturers without delay.

**Allwave Receiver.**

Manufacturers: Short Wave Communications Development Co., Ltd., 22, Conduit Street, S.W.1. Price £22 10s., including coils and grid bias battery only.

THIS set is built in an American-type cabinet with folding doors at the front and a hinge lid at the top for easy access.

At the front there is a machined metal panel on which are three controls—the one on the left for the aerial tuning condenser, the one on the right the condenser for controlling the reaction, and a smaller knob in the centre for operating the volume control which appears to be in the nature of a variable high resistance of the potentiometer type. The only other control on the panel is a small push-pull switch of the usual type.

The cabinet is of dark oak, and the finish leaves nothing to be desired. It should be mentioned that both the condensers have vernier friction control. The set is wired up in a very workmanlike manner with stout wire covered with insulated sleeving in various colours. The aerial, earth, battery and loudspeaker connections are passed out to sockets mounted on a small panel at the rear of the set. The connections are made to these by means of plugs of orthodox pattern.

The circuit appears to be of excellent design, consisting of detector and L.F. stages, the last stage consisting of two valves paralleled and with a choke condenser output filter circuit. All the components are of the very best quality, being a combination of R.I. and Mullard wire wound resistances, Dubilier and T.C.C. condensers, Lotus valve-holders, Dubilier grid leaks, Cyldon condensers and Hellesen grid battery. Nothing appears to have been spared as far as quality of components or workmanship is concerned.

**Working Efficiency.**—The manufacturers claim that the set will receive stations on wave bands from 20-2,600 metres, and that of every wave band mentioned on their instructions for coil combinations, stations have been received. We found this to be so, and, moreover, there appears to be no reason why a very large number of short-wave, medium-wave or high-wave stations should not be received with very good results in most parts of the country. We consider this an excellent set, and one that we should have no hesitation in recommending to the trader.

**Ferranti A.F.5 Transformer.**

Manufacturers: Ferranti, Ltd., Hollinwood, Lancs. Price 30s.

**T**HE Ferranti A.F.5 transformer is comparatively large, and is similar to the A.F.3, which created such a favourable impression when it was first introduced. It is completely shrouded in a metal case finished in polished black, and the design is exactly the same as that of the A.F.3. The terminals are mounted at the bottom of the transformer. The feet are reversible so that the transformer may be mounted either way up or on its side—a small detail, but one which shows that the external design has been as well thought out as the internal portion of the transformer.

**Working Efficiency.**—On test the results were superior to our standard transformer, and hence in future we are using the Ferranti A.F.5 as our standard for testing purposes. We consider that the results with this transformer when used with the correct valves and where only one stage of low-frequency amplification is used cannot be improved upon. It is possible, of course, to amplify the lower frequencies to a greater extent than with this transformer, but when doing so the upper range is generally completely lost.

If two stages are used we would prefer to use an R.C.C. stage preceding the transformer coupled stage where the A.F.5 is used, but the results may be improved with other couplings by constructors who are prepared to spend a little time in experimental work in this direction. The Ferranti A.F.5 gave an excellent build up of signal strength, reproduced evenly over almost as wide a range as would be considered necessary. The tone is decidedly pleasing.

**Selling Points.**—Efficiency is undoubtedly the outstanding selling point of this transformer, and for those dealers who cater for discerning people the A.F.5 should be an excellent line to stock.

**Star Universal "C.T." Tuner.**

Manufacturers: Star Wireless Co., Biggleswade, Beds. Price: 12s. 6d.

**T**HIS tuner has been designed to replace centre-tapped coils. It consists of a former covered with leatherette. At the top and bottom are ebonite discs. At the bottom of the tuner are five terminals, one for connection to earth, one for connecting to the grid of the first valve, one for direct connection to the aerial, one alternative tapping where constant aerial tuning is required, and the remaining terminal for the reaction connection, which will be of the capacity-controlled type.

A variable condenser having a maximum capacity of .0005 mfd. is recommended for tuning the aerial circuit, and a condenser of .00025 for reaction purposes.

At the top of the tuner is a small milled knob, which operates a switch, this having six positions so that the normal waveband and the higher band are covered. An attractive indicating plate is supplied for use with the switch. Only one hole is needed for fixing the tuner. The external workmanship is excellent.

**Working Efficiency.**—On test we found the tuner to be very efficient. Over the whole waveband covered reaction was quite smooth, and we consider it to be an excellent tuner for the constructor who wishes to simplify his set as much as possible without reducing efficiency.

When the constant aerial tuning arrangement was employed by using the alternative tapping, good selectivity was obtained on the short waveband up to about 500 metres.

**Selling Points.**—This tuner is efficient and of first-class workmanship, and for these reasons, in addition to the fact that it enables constructors to simplify their receivers to a very great extent, it should sell very well.



An important point in this "Gecophone" gramophone pick-up is that it reduces considerably the unpleasant "blasting" effect.

**"Gecophone" Gramophone Pick-Up.**

Manufacturers: General Electric Co., Ltd., Magnet House, Kingsway, London, W.C.2. Price £2 5s.

**T**HE G.E.C. unit has a rather unusual appearance. It is of the electro-magnetic type, and the magnet itself is of large dimensions. Actually it forms the basis of the unit. Two terminals of good size are provided for connecting the leads to the receiver. The usual fitment for attaching the unit to the gramophone tone-arm is provided at the side, this being in two pieces and clamped together with a good amount of rubber, apparently to prevent the very common and decidedly unpleasant "blasting" effect. The unit fits a standard H.M.V. gramophone, and an adaptor is provided for attaching it to other sizes of tone-arms in common use, where necessary.

**Working Efficiency.**—One item of considerable importance is that the "blasting" effect has been reduced to the absolute minimum. The latter detail is a point that manufacturers of such pick-ups often seem to miss.

**Selling Points.**—The G.E.C. pick-up is excellent value for money. We feel that no purchaser will have any complaint after listening to this unit for any length of time.

**Dionoid H.T. Accumulator.**

Manufacturers: Dionoid Battery Company, Ltd., Victoria Works, Prince of Wales Road, Darnall, Sheffield.

**T**HIS Dionoid H.T. accumulator has a rated E.M.F. of 30 volts. It is contained in a convenient carrying crate. Five glass cells are employed, each containing a 6-volt unit. The cells are firmly fitted into the casing, but there is a space between each of over 1/4 inch, while there is a covering at the top of some hard black substance.

Quite substantial vents are supplied, while connecting pieces between the cells are arranged to accept a standard wander plug and so that a tapping may be obtained at every two volts. A metal carrying handle is provided.

The plates used are of substantial construction, and, so far as we could see, the internal design leaves nothing to be desired. The unit is of excellent construction and gives the impression that a very long, useful service is to be expected. The specific gravity of the acid should be 1.235, and the charging rate is .15 amps.

**Working Efficiency.**—We have not had the battery long enough to be able to give any actual test for length of life, but for a few weeks it has been subjected to excessive discharges, and has given us every satisfaction. Judging from the hard work which it has stood up to extremely well, and by the appearance and design of the battery, we should say that many years of good service are to be expected, provided, of course, that the battery is not ill-used in any way.

**Selling Points.**—This is undoubtedly a quality battery, and can be purchased with every confidence.

**Are Your Sales-Aids Up-to-Date?**

**T**O OBTAIN any of the showcards, posters or pictorial signs illustrated in this issue, fill up the coupon below, pin it to your business heading or trade card, and forward to "The Broadcaster and Wireless Retailer," 93, Long Acre, W.C.2.

April, 1928

**PUBLICITY AIDS COUPON**

Please obtain the following for me/us:—

	Page.		Page
British General Display Card (12)	..	Dubilier Display Card (4)	..
C.A.V. Poster (10)	..	Hart Showcard (5)	..
C.A.V. Strip Poster (11)	..	Marconi Display Card (2)	..
C.D.M. Showcard (7)	..	"Parfait" Showcard (6)	..
"Deltron" Display Card (9)	..	"Radioglobe" Showcard (3)	..
D.P. Batteries Poster (8)	..	"Stal" Showcard (1)	..

CROSS OUT THOSE THAT DO NOT APPLY.

Name of Business .....

Address .....

**1** Use **STAL** Wireless Apparatus SOLD UNDER Guarantee

**2** **MARCONI VALVES** THE VALVE IN THE PURPLE BOX

**3** **RADIOGLOBE JUNIOR**

**4** **DUBILIER** THE TOROID H.F. TRANSFORMERS

**5** **HART** "COMPARTO" HIGH TENSION Wireless Accumulator

**6** **Parfait** THE PERFECT **EBONITE** IN SHEETS OR PANELS

**7** **C.D.M. COMPONENTS**

**8** **D.P. WIRELESS AND PORTABLE BATTERIES** SOLD HERE The D.P. BATTERY CO. BAKEWELL, DERBYSHIRE

**9** **DELTRON VALVES FOR PERFECT RECEPTION**

**10** **C.A.V. THE WORLD'S BEST BATTERY RADIO**

**11** **C.A.V. TYPE H.M.C. "ALL-MOULDED" HIGH TENSION ACCUMULATOR** 60 VOLTS WITH TAPPINGS 3,000 MILLIAMP HRS.

**12** **Get it here!** 18/6 **BRITISH GENERAL** SUPER SHROUNDED TRANSFORMER

1. Stal apparatus featured in a particularly handsome embossed showcard. 2. A neat, attractive-looking showcard with cut-outs for displaying Marconi valves. 3. Boldly embossed in black, gold and silver, this showcard gives an unusually artistic appearance. 4. A novel manner of presenting Dubilier manufactures, cut-outs being provided for displaying various components. 5. A charming little showcard dealing with Hart accumulators. 6. A well-conceived method of advertising the ebonite products of H. B. Potter and Co., Ltd. 7. The C.D.M. components admirably set forth. 8. An effective calendar-type poster supplied by the D. P. Battery Co., Ltd. 9. Drawing attention to Deltron valves, a showcard issued by the Direct Lamp Co. 10. A striking poster in three colours in connection with C.A.V. batteries. 11. A conveniently sized strip, also dealing with C.A.V. products. 12. Useful and ornamental is this two-coloured cut-out for the display of the British General transformer.

(See p. 90 for Publicity Aids Coupon.)



This picturesque effect was produced at King's Lynn, by Bayes & Co.

**A** CARNARVON wireless dealer, Mr. T. Burrows, has adopted a novel method of advertising. He describes his place of business as "The Battery Hospital," and invites all and sundry to consult him with regard to accumulators. He claims to be the only person in the district who "specialises in every kind of battery."

**Generous Firm.**

**M**ESSRS. CHRISTIE AND HODGSON, of West Street, Sheffield, have generously undertaken to fix free of cost the aerials and sets which are being given to necessitous blind persons by the Sheffield Wireless League.

**Featuring Librettos.**

**"L**ISTEN to Melbourne, Australia, every Sunday evening on our short wave set." This is a prominent showcard in the well-stocked windows of Beresford's, Bull Street, Birmingham. This firm also makes a feature in the windows of the B.B.C. operetta librettos. These librettos, posted prominently in the window and attached by a ribbon to a receiving set placed conspicuously near the centre of the window space, make an undoubtedly attractive "draw."

**Valves on View.**

**A**N interesting display of valves was staged by Cleartron (1927), Ltd., of 21, Cumberland Street, Birmingham, at the National Trades Exhibition which opened at Birmingham on March 19.

**"Orphean" Displays.**

**T**HROUGH their local agents, Messrs. J. R. Jennens and Co., Ltd., Birmingham, the London Radio Manufacturing Co.,



A recent Cossor display by the Newport Electrical Co., Ltd.

**Salesmanship**

**THE BATTERY HOSPITAL**

**Aid for Ailing Accumulators**

Ltd., Station Road, Merton Abbey, London, S.W.19, had an effectively arranged stand at the recent Brighter Homes Exhibition at Bingley Hall, Birmingham.

A representative range of the firm's "Orphean" and "Oriel" loudspeakers was shown, the "Oriel" being a cabinet type of instrument available in polished oak or mahogany, and containing a special form of reproducing horn.

An exhibit which proved particularly interesting to visitors was that of a new line of plugs and jacks made in bakelite, and specially suitable for radio house-wiring schemes.

Messrs. Walker Bros., Temple Row, Birmingham, also had a number of radio exhibits on their stand. These included Geophone receivers and components and McMichael portable sets.

**Ingenious Advertisement.**

**R**ADIOCRAFT SUPPLIES, of Walsall, have been running an effective piece of advertising in the local Press. It consists of a picture of a typical group of aerials of all shapes and sizes behind suburban houses, and this carries the caption, "Does the view from your window resemble a dock-yard?" Then follows below an advertisement of receivers which do not require an aerial outside.

**Middlesbrough Attraction.**

**D**EMONSTRATIONS with a moving coil loudspeaker constructed by the firm's engineering staff are attracting crowds to the shop of Booth Brothers, Middlesbrough, and large orders have been placed. Inci-



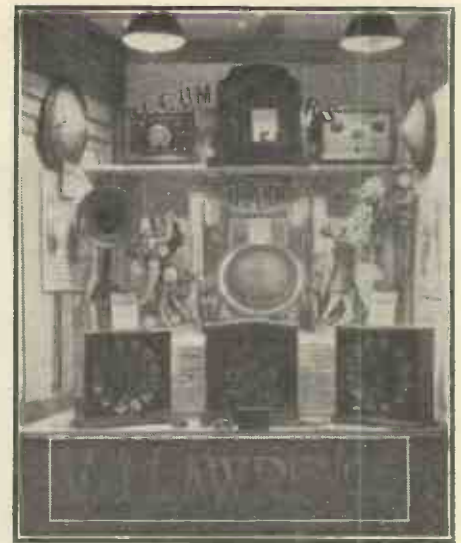
The body of this M.P.A. delivery van is painted in a bright flame colour and the chassis a rich blue

dentally, the demonstrations are being carried out with the aid of a Brown pick-up.

**Boosting the Portable.**

**T**HE Bristol Wireless Co., of Queen's Road, Clifton, ran a special portable week during March, and put over a smart selling campaign for this type of set.

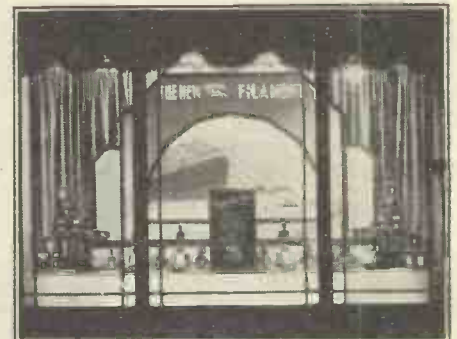
At the Queen's Road premises there was a special window display arranged to boost the "M.H." set. In the centre, beneath an arch, the figure of a small girl was seated on a pedestal, holding in her hand a copy of a programme. Arranged in different positions in the window were four or five portable sets, in various coloured cabinets; there were also some cut-outs of carnival dancers, and the window was completed with a decoration of artificial leaves and sprays.



An attractive setting for the Amplion products staged by V. J. Lawrence, of Leytonstone.

**Derby Exhibition.**

**M**ESSRS. TAYLOR AND BRIGGS, R. Egerton and Co., Hulme and Son, Jolley and Cowlshaw, Batterby and Hefford, and the Curzon Street Radio Stores each had a display at an exhibition held in Derby Drill Hall during March. Representatives of these firms found the exhibition, which was promoted by the General Exhibition Services, Leeds, in conjunction with the



Telling of the Osram valve filament's great strength: a G.E.C. display at Kingsway, W.C.2

Derby Daily Telegraph, a useful medium for advertising radio goods.

**B.T.-H. "R.K." Demonstration.**

**A** LECTURE and demonstration by Mr. H. W. Gambrell, F.R.S.A., A.M.I.R.E., of the British Thomson-Houston Co., Ltd., in connection with the B.T.-H. model "R.K." loudspeakers, took place in the Central Hall, Derby, on March 15. The lecture was arranged by the Derby Wireless Club, and only the D.C. equipment was demonstrated, owing to the absence of A.C. mains in the Hall.

The faithfulness of reproduction to the studio performances made a deep impression on the audience, and there was a rush to the platform to examine the apparatus at the end of the lecture.

**A Newport Display.**

**A**N innovation locally in the way of demonstration sets is to be seen at Messrs. Paul's Wireless Stores, Dock Street, Newport.

The firm recently put on the market their Poullette three-valve receiver, and in order to emphasise its simplicity they have housed one of the sets in a large glass cabinet, so that all the parts are exposed to view.



# Dealer Advertising Month by Month

by Victor Hyde, M.C.

"DON'T have dull evenings; have radio," I read in an advertisement of Idris Radio, Hove. An excellent selling point, of course, is expressed in these half-dozen words, but in a negative manner—one that is sufficient to cause certain readers to associate together "dull evenings" and "radio."

Therein is contained the whole case against negative suggestion in advertising. "Your evenings must be bright if you have radio" would have put the same idea in a way removed of all doubt and negative association of ideas.

"Don't advertise in the dark, advertise in the Advertiser" is a phrase I used this month in advancing the claims of one newspaper over another; the negative was justified only by the positive explanatory nature of the copy which preceded it.

The Reliability Stores, also of Hove, might have used a trifle more force in their opening to a small double-column space when they say, in introducing certain sets, "Does This Interest You?"

Some may not stop to read and see if it does, but they might conceivably be persuaded to by "This Will Interest You!" The first suggests an element of doubt in the matter; the second is definite and unequivocal.

### A Neglected Opportunity.

Jackson's, of South Tottenham, have missed an opportunity in telling their North London readers that "£1 down secures a two-valve Marconiphone, Gegophon, A.J.S., or Polar set complete with equipment and speaker," and they have also committed an error (or the printer has), as will be seen from the way "Gegophone" is spelt above.

The missed opportunity is that they failed to impart greater force to the offer by not borrowing from each of these four makers a

**£1**

**THE LOUD SPEAKER**

SHOULD BE OUTSIDE YOUR WIRELESS SET.

**WHY?** Because it enables you to take it into any part of the house without interfering with reception.

**OUR system of EASY PAYMENTS**

is simple and popular.

**WHY?** Because it enables you to purchase your Wireless out of income—you pay as you "Listen In."

FROM **£1** FROM **£1**



**£1 DOWN** **£1 DOWN**

Write for Particulars

We can supply any make of Set.  
"PYE" Portable Set in stock.  
NO AERIAL—NO BARTS—NO WIRES.  
Ask for Demonstration.

NTW ISSUES OF BROADCAST RECORDS NEXT WEEK.

**STIRLINGS, L** 17-19, Clarence Street,  
KINGSTON-ON-THAMES  
Phone KINGSTON 0712.

**£1**

A confused and untidy effect is produced by needless repetition in this advertisement.

We have all the Components for that New Circuit!



Including the Cossar Melody Maker and the Mullard Master Three. Every assistance is given to builders of these sets, panels drilled free, etc.

## R. J. MACE, Market Street.

Phone 375.

*Its light and spacy treatment draws attention to this announcement and gives it a thoroughly business-like air.*

name block: here are nationally advertised names, names that their owners and inventors have advertised in a particular, individual form, and it is a pity for the dealer to fail to give himself the accumulated goodwill attaching to them by failure to reproduce them in the style in which the public will most readily recognise them: there is not a tenth the same personality and distinction in cold type and uninspired block capitals.

The method I suggest would also have made an error in the spelling of the General Electric Co.'s brand name impossible.

The Rainbow Stores, Gravesend, have a novel advertising scheme—they set out in bold tabular form (1) the full cash price, (2) the deposit, (3) the weekly payment on nine loudspeaker models, and follow a like policy in the case of accumulators. The reader may choose from the advertisement and go to the shop knowing exactly the call upon his pocket; some—maybe not many—prefer this to having to ask.

Confusion! That is the best one can say, viewing the space as a whole, of the Stirling announcement. You can put too much in a window, and you can put too much in an advertisement: there are always other weeks in the case of the window, and other space opportunities in the case of the newspaper offer. There are eight repetitions of the amount of the deposit, whereas either the six border ones or the two on either side of the block would have sufficed.

### A Suggested Improvement.

The lay-out accommodates the various ideas fairly well, but a cleaner, neater, and, be it noted, equally attractive appearance would have resulted from eliminating the rules that box two panels of copy and doing without the "Why?" "Our" and "Why?" running down the left-hand upper side.

With a slight alteration in the wording the copy would then read:—

"An exterior loudspeaker permits of your taking it into any part of the house without interfering with the reception.

"Our system of easy payments is simple and popular. It enables you to purchase

your wireless set out of income—you pay as you listen in."

This, "set in" right and left, with white space each side, and a space between the two paragraphs, would have improved this six-inch double-column announcement.

Accumulator Charging

— the Service You Should TRY

A full charge and a good charge at a popular price, including collection and delivery. SEND A POSTCARD OR PHONE 528. WE WILL CALL AT ONCE.

## H. RUSSELL & Co.

"RADIO CORNER,"

19 HAMILTON ST.

Phone, 528.

*An excellent method of making the most of a little space.*

A small space that is emphatically on the right lines is that of H. Russell and Co. Getting the reader's attention is the first consideration in the small space, and we see it won in a way that leads the eye to the offer, yet not so bold as to be inartistic. The continuing of the oval to direct the eye to the name is a good point.

Few retailers who are personally responsible for the whole of their advertisements, and all that goes into them, produce the same effective results as do Mace's, of Newmarket. It is an attempt to sell where a percentage of dealer advertising merely announces; it is an attempt at art where many spaces are artless in the publicity sense. White on a solid background is excellent for attention, provided, as in this case, the lettering is carried out clearly all the way through.

# Applications of Quartz Resonators

Extracts from a paper read before the Institution of Electrical Engineers  
by G. W. N. Cobbold, M.A., and A. E. Underdown

IN considering the manner in which quartz crystals are used, a broad distinction may be drawn between the case in which the resonator merely interferes with the oscillations of an electrical circuit and the case in which the resonator is employed as a means of controlling the frequency of such oscillations.

The commonest examples of the first case are those known as the "click" method, in which the effect of the resonator is to cause a sudden change of frequency in a valve oscillator, and the "crevasse" method, in which the resonator is employed to absorb power from an oscillatory circuit—with maximum effect at a well-defined critical frequency.

In the case in which the frequency is controlled, the resonator is incorporated in a valve circuit, in which retroaction exterior to the valve and apart from that due to the crystal itself may, but need not, be dispensed with.

## Quartz Oscillators.

When a valve and a crystal resonator are associated in such a way that self-maintained oscillations occur, the frequency of which is controlled by the resonator, the complete circuit is generally referred to as a "quartz oscillator."

Although other circuits have proved valuable for research work when studying the behaviour of these resonators, it appears that for practical applications the quartz oscillator is likely to dominate the field of usefulness.

The shapes commonly employed are the rectangular parallelepiped and the solid cylinder (or disc). The diameters of the latter generally range between 10 and 25 mm., whilst the thickness ranges from about 0.5 mm. to 5 mm.

The former are usually either square plates up to about 25 mm. square by anything from about 0.5 mm. to 5 mm. thick, or else bars which are a millimetre or two thick, from 2 to 10 mm. wide, and from about 3 to 60 mm. in length.

## Cutting and Grinding.

The normal manner of cutting a resonator from a block of crystalline quartz has been fully described by Prof. Cady and by D. W. Dye in a previous paper, but it is thought that a brief description should be included here.

Fig. 1 illustrates the manner in which a rectangular bar is normally cut from a block of natural quartz. The surface ABCDEF is at right angles to the optical axis ZZ'. The three electrical axes are AD, BE and CF, and in the case illustrated the length of the bar PS is at right angles to the electrical axis AD. This perpendicularity to one of the electrical axes is not essential, however; in fact, certain advantages are claimed for a cut which departs from the perpendicular to a considerable extent.

## Methods of Mounting.

When in use, the quartz resonator is generally situated between two electrodes in the manner indicated in Fig. 2, although the air-gaps are often dispensed with. The same type of mounting may be employed, whether the quartz crystal is used as an interference resonator or is included in a quartz oscillator, but in the case of interference resonators a very appreciable air-gap is generally provided in practice; whereas in the case of resonators used in

quartz oscillators the air-gap is usually either extremely small or altogether absent.

When there is no air-gap, the crystal must not be clamped or rigidly held between the two electrodes; it is therefore usual either to fit a light spring to press one of the electrodes against the crystal or else to place the crystal on top of one electrode, and the other electrode—which must not be too heavy—on the top of the crystal.

The type of holder described by Prof. Cady is generally employed for interference resonators.

In the case of quartz oscillators, one of the earliest types of holder was that de-

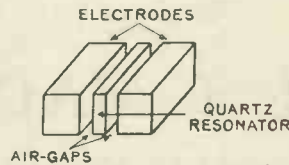


FIG. 1.

scribed by G. W. Pierce, in which the crystal is placed in a hard rubber frame which constitutes the walls of the holder, the two electrodes forming the top and bottom of the box. Between one of the electrodes and the crystal a thin piece of spring brass is fitted for the purpose of exerting a slight pressure on the quartz.

Another type of holder consists of a short tube of insulating material threaded on the inside and carrying two disc electrodes, one of which is fixed, whilst the other may be adjusted by means of a screw thread to give any desired air-gap. This holder has the advantage that the gap may be adjusted until the best performance is obtained from the crystal to be used in it, after which it can be sealed up.

It has been found that, when exposed to damp, the crystals become less sensitive, and in some cases they have ceased to work

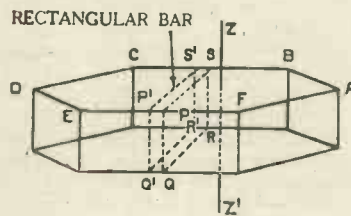


FIG. 2.

for a time. In order to avoid this, the crystal holders may be first thoroughly dried out in an electric oven and then bakelised over. A still better solution is probably to mount the crystal and electrodes in a vacuum tube.

Suitable blocks of crystalline quartz are found in Brazil and Madagascar, and occasionally in Switzerland, but the bulk of the best quartz for the purpose is drawn from Brazil. There are other crystalline substances besides quartz which can be used for the construction of piezo-electric resonators, but, although in some cases (Rochelle salt, for example) the piezo-electric effect is greater, there appears to be no material so well adapted as quartz.

## Modes of Vibration.

Apart from overtones, every resonator has a possible mode of vibration associated

with each dimension. Thus one of the bar crystals already referred to has three normal fundamental modes, and the frequency is determined by the appropriate dimension.

One of the advantages of quartz resonators is the fact that their temperature coefficients are extremely low. In the case of bars about 1.5 mm. thick and 1 or 2 cm. long and cut out in the manner described above, the coefficients are found to be less than 10 parts in a million per degree Fahrenheit.

## Comparisons.

There are two other types of standard in use for the determination of radio frequencies. One is the elinvar tuning fork, which, when associated with a multi-vibrator, can be made to provide a series of standard points in the band of frequencies used in radio work. The other is the oscillatory electric circuit, consisting of an inductance associated with a capacity.

There is little doubt that the elinvar fork presents the most accurate standard available. The temperature coefficient is small and is exactly known, and the constancy of its frequency over a long period of time has been proved by comparison with a standard clock.

Until recently the electric circuit has been used as the normal medium of standardisation for radio frequencies. This has certain advantages, the most important of which is that it can conveniently be tuned throughout a band of frequencies so as to give an enormous number of standard points instead of only a series of selected points here and there. The materials of which it has to be made are not, however, of the permanence of elinvar or quartz, and their temperature coefficients are very much higher.

## High Standards.

It would therefore appear that, although retaining its utility for sub-standard work, the electric circuit is not likely to compete successfully with the elinvar fork or the quartz resonator as a radio standard. On comparing these, however, the distinction is not so great.

For national and international standards and for all standards of the very highest order, the fork will probably always be preferred. On the other hand, there would appear to be a great use for quartz resonators as secondary standards, and this is likely to be the case, especially in short-wave radio practice, where the frequencies are enormously high in comparison with the frequency of a tuning fork.

They are already, in fact, in use in the National Physical Laboratory at Teddington and at the Bureau of Standards of Washington for the purpose of international comparisons; they have also proved to be of considerable value in the laboratory both as standards and as stabilisers; and they appear to be suitable for issue to wireless stations for use as reference standards where a means of checking wave-meters is required.

In comparison with forks of elinvar steel, quartz resonators possess the advantage that their natural frequencies are well within the portion of the spectrum employed in wireless; whereas, in comparison with standard electrical circuits consisting of inductances associated with capacities, they are more compact and constant and of lower temperature coefficient.

# Trade Transmissions



## Runnymede Products.

SEVERAL attractive lines are being manufactured by the Runnymede Engineering and Electric Co., of Dacre House, Victoria Street, S.W.1. A great help to Runnymede stockists is the hire-purchase system, which has recently been extended to Amplion and Celestion loudspeakers, which are also handled by the company.

Their latest products are the Runnymede 2 and 3 valve receivers. The 2-valver is contained in a remarkably neat and compact oak cabinet, the top of which is hinged, giving easy access to the interior. There is only one tuning dial and this, together with reaction control and switches, is mounted on a polished oak panel, which does so much to enhance the appearance of the set. A wide selection of stations at good loudspeaker strength is available. Retail price, £10 complete.

The 3-valve model is housed in a mahogany cabinet, and is similar in appearance to the 2-valver, the controls being mounted in the same manner. The price of this is £12 inclusive. Particulars of the hire-purchase system may be obtained on application.

## "Cyldon 1928 Solodyne" Condenser.

THE steadily growing demand on the part of amateur constructors and experimenters for condensers of double and triple gang type is being well met by S. S. Bird and Sons, Ltd., of Cyldon Works, Sarnesfield Road, Enfield Town, Middlesex.

Their latest product is the "Cyldon 1928 Solodyne" condenser, which consists of three "Cyldon" condensers ganged together and mounted on a chassis of heavy channel-sectioned aluminium, fitted with control drums, hair-line tuning indicator and panel plate. Detachable screens, correctly drilled, are also supplied as a part of the assembly. These simply slip into their respective positions in the aluminium chassis and screw to the baseboard. All holes in the screen through which wire has to pass are bushed with ebonite.

This new "Cyldon" triple condenser assembly has many advantages, one being that the aerial tuning condenser, though capable of separate adjustment, can be tuned from the operating position in conjunction with the two H.F. condensers. Furthermore, all three condensers can be permanently locked if required.

The whole assembly is absolutely complete, and combines extreme simplicity with extraordinary efficiency.

Retail price, £4 10s. complete.

## "Becol" Multi-Contact Formers.

A PRODUCT that will be found particularly acceptable, especially among experimenters, is the "Becol" coil formers made by the British Ebonite Co., Ltd., of Nightingale Road, Hanwell, W.7.

These formers are of the plug-in type, and comprise a tube of specially ribbed ebonite, which is of a design that has for long been associated with the British Ebonite Co., Ltd. The ebonite is genuine and perfectly machined.

The ebonite between the ribbed flange has been cut away, so that less dielectric or solid ebonite is in close proximity to the coil winding. Although the amount of ebonite is reduced, the former is still rigid. It is a little larger than the standard size, and by reason of this a thicker wire may be used.

The contacts on the former are made from solid brass, which cannot become bent

*Manufacturers should send notices of new apparatus, etc., to the Technical Editor. Dealers and factors communicating with manufacturers regarding announcements would oblige us by mentioning "The Broadcaster and Wireless Retailer."*

or misshapen in use. These are  $\frac{3}{4}$  in. long, and are provided with small soldering tags. The base, with a  $4\frac{1}{2}$  in. diameter, is fitted with a shallow ebonite cylinder 2 in. in diameter. When in use, the coil fits over this piece of ebonite into spring contacts made of phosphor bronze backed with a solid brass support, both of which tend to exert an inward pressure upon the coil. By this method, definite connection is always ensured.

An interesting feature of this "Becol" former is the provision of a special fitting at the base, which makes it impossible to insert the coil wrongly.

The price for the four and six contact formers and bases is 10s. 6d.

In connection with these formers, British Ebonite Co., Ltd., have issued a handbook on circuits and windings. This book, which contains some very interesting data and numerous illustrations, sells at 6d.

## "Empire Short Wave" Receiver.

A RECEIVER which aroused much interest at the B.I.F. was the "Empire Short Wave 3," produced by Hart Collins, Ltd., of 38a, Bessborough Street, S.W.1. This new product, which is in every way typical of the thoroughness shown in all Hart Collins' receivers, has been designed to cover any wave-band down to 12 metres.

It is contained in a handsome mahogany cabinet of orthodox design. Special attention has been paid to simplicity of operation, there being only one main tuning control, one reaction control and a volume control.



Showing the interior of the "Empire Short Wave 3" receiver, a feature of which is its simplicity of construction.

The circuit consists of detector and two low frequency stages. The insertion or withdrawal of the headphones or loudspeaker plug automatically connects or disconnects the batteries.

An improvement which is both useful and artistic is carried out on the lid of the receiver, this having a hinged portion that totally encloses the set, and which recedes into the top of the cabinet when the lid is raised.

It should be noted that not only is the "Empire Short Wave 3" an exceedingly efficient short wave receiver, but that it is also efficient for the reception of normal broadcasting (300-500 metres) and, as part of the equipment, a coil is supplied for this purpose. The price of this receiver is £21.

## Regentone Permanent Charger.

A NEW product of the Regent Radio Supply Co., 21, Bartlett's Buildings, Holborn Circus, E.C.4, is the Regentone permanent charger and L.T. coupler. This charger is for use with A.C. mains of any voltage 40-83 cycles, and incorporates a Westinghouse metal rectifier. The whole is enclosed in an attractive bakelite case with insulated terminals to match, and can be easily and safely operated.

An interesting feature of this instrument is a simple switching device which makes it possible to leave the charger attached to the electric supply with the accumulator permanently connected. By pulling this switch out it places the accumulator on charge and automatically cuts off the supply of current from the accumulator to the valves, and by pushing it in the connection between the mains supply and the charger is broken and the accumulator is connected with the valves of the receiver.

Thus the Regentone charger virtually becomes an L.T. mains unit, for once the accumulator is connected all other connections are unnecessary.

The charging rate is  $\frac{1}{2}$  amp. and the retail price is £2 14s.

## Bakelite Mouldings.

THE ever-increasing popularity of the Bakelite products of Solidite and Synthetic Mouldings, Ltd., of Albion Works, North Street, Clapham, S.W.4, has already made it necessary for the firm to increase its accommodation.

Many well-known manufacturers rely on this durable bakelite for efficient, attractive and highly-finished accessories.

## Junction Engineering Co.

AN interesting little gadget is the "Toner," which is made by the Junction Engineering Co., of 149A, Junction Road, N.19.

This small instrument is for attaching to loudspeakers for the purpose of giving true reproduction. It is claimed that it will divert and suppress all extraneous noises without diminishing the volume.

## An Osram Valve Improvement.

THE Osram U.5 type of rectifying valve made by the General Electric Company, Limited, Magnet House, Kingsway, W.C.2, has been considerably improved. It is now capable of dealing with a maximum anode voltage of 400 plus 400 (instead of 250 plus 250, as in the previous model), with a rectified output of 60 milliamperes, in place of 50 milliamperes as hitherto.

This means that a rectified current of 60 milliamperes at 350 to 400 volts can now be obtained from a single U.5 valve, which

is sufficient to supply H.T. to power amplifying valves used in parallel or on the push-pull principle.

The rating of the Osram U.5 is now as follows:—Filament volts, 5.0; filament current, 1.6 amps.; anode volts (R.M.S.), 400 max.; impedance, 300 ohms; max. direct current, 60 milliamperes.

### K.N. Soldering Iron.

TRADERS will be interested in the "K.N." electric soldering iron, made by Knowles and Son, of 87, Wardour Street, W.1. It is extremely well made, moderately priced, and very efficient.

The "K.N." soldering iron consists of an ebonised handle 4 in. long and 1½ in. in diameter, into which is fitted a shank of nickel-silver plated brass tube with a unique



This useful product, the "K.N." soldering iron, will find many admirers in the ranks of the home constructors.

recess to hold the element. This shank is 5½ in. long, with an internal diameter of ½ in., and, being of one piece, there is no possibility of its coming apart when heated. Where the flex fits into the handle, a spring wire guard is provided so as to eliminate "shorts" that are occasioned by the wearing of flex.

An important feature of this iron is the steatite element, which is so constructed that each turn of wire lies in a separate cavity, preventing any possibility of fusing. Two bits are provided, one straight and the other right-angled. These are made of specially solid hard copper, with high conductivity.

The "K.N." can be obtained for voltages of 100-110 and 220-250, and the loading is 75 watts.

Each iron is guaranteed for one year, and retails at 12s. 6d., complete with two bits, 5 ft. of flex, fitted with a moulded lamp socket adaptor.

### "Liberty" Supersonic Unit.

A USEFUL component for the constructor of long range receivers is the "Liberty" supersonic unit, made by Radi Arc Electrical Co. (1927), Ltd., Bennett Street, Chiswick, W.4.

It comprises three matched intermediate transformers, filters, long wave oscillator 800-3000 metres, short wave oscillator 250-750 metres, and combined pick-up coil. The intermediate transformers and filter are mounted in an oblong box, and are completely wired up to plated terminals on an ebonite lid, thus obviating soldering connections.

Care is taken in the construction of this unit to see that the transformers are of an identical peak frequency, to ensure which the makers have eliminated the use of iron.

The price is £5, complete. An ultra short wave oscillator 10-200 metres is supplied for 10s. 6d. extra.

### "Ediswan" L.T. Accumulator Charger.

THE Edison Swan Electric Co., Ltd., of 123-5, Queen Victoria Street, E.C.4, has just put on the market the Ediswan home L.T. accumulator charger for A.C. mains.

This charger, which consists of a transformer, thermionic valve and barretter, together with the necessary flexible connections, is so small and compact as to facilitate ease of removing.

It will work on supply mains of frequencies ranging from 40 to 100 cycles, and tappings are provided so that the rectifier

can be made suitable for supply voltages of 100-110, 200-220 and 230-250. This instrument is designed to charge accumulators from two to six volts at the rate of 2 amps.

The Ediswan charger is as simple and safe in operation as it is efficient in results, and the current consumption is negligible. The cost to charge a 10 amp. hour actual accumulator when the cost of electricity is 3d. per unit is 1d.

The charger is exceptionally neat, and the design and workmanship are of a very high quality. Retail is £2 17s. 6d., complete with valve and barretter.

### H. D. Zealander and Co.

THREE lines which will be welcomed by traders generally have been placed on the market by H. D. Zealander and Co., of 124-127, Minories, E.1, one a plug-in coil, an S.L.F. condenser, and vernier dial.

The coil is designed especially for the Mullard "Master Three," and embodies all the features emphasised by the designers of this receiver. It is made of green silk-covered wire wound on a stout moulded former. At the bottom of the coil are six split pins, which are mounted so that they fit into a base with sockets correspondingly mounted.

This coil covers 1000-2000 metres, and retails at 6s. 9d.

The condenser has been constructed to meet the demands of an efficient instrument at a reasonable price. It is of the S.L.F. design, and is well finished. The trade price is 2s. 3d.

Outstanding features of the vernier dial are good workmanship and smooth action. It is of the usual design, with a circular moulded casing. The scale is marked from 0-180, and readings are taken from a small

## Brief Broadcasts

THE Hoyt Electrical Works of the U.S.A. have appointed Fredk. J. Gordon and Co., Ltd., of 92, Charlotte Street, W., as their agents for Great Britain.

THE telephone number of Marconi's Wireless Telegraph Co., Ltd., at Radio House, Wilson Street, E.C.2, has been changed to Bishopsgate 6565.

PARRS Advertising, Ltd., report that they have completed their second year of activity and that the volume of the last twelve months' business has considerably improved upon that of the previous year.

THE Marconiphone Co., Ltd., recently had returned to them one of their L.T.1 valves, which, after being in continuous use for nearly six years, is still in good condition. It would be interesting to hear of other valves of such longevity.

THE Telsen Electric Co., Ltd., of 207, Aston Road, Birmingham, have appointed Sloan and Co., of 7, Corporation Street, Belfast, as agents and distributors for "Telsen" products in Northern-Ireland.

C. D. MELHUISS, of 8, Great Sutton Street, Goswell Road, E.C.1, manufacturer of C.D.M. specialities, require agents for the south of England.

WE understand that the house of J. Francis, 147-149, Newington Causeway, Elephant and Castle, S.E.1, is now trading under a new name. The firm is now called Clark and Moir and has become a limited company.

This firm is opening a branch in Bristol at 36, Marsh Street.

window at the top. Movement is obtained by a knob of generous dimensions, fitted at the foot of the dial.

The trade price is 1s. 9d.

### "Zone" 5-valve Portable.

THE "Zone" (type A) receiver is a new five-valve portable set made by the Zone Wireless Co., Ltd., of Poland House, 167, Oxford Street, W.1. It is entirely self-contained, and is housed in a suitcase of attractive appearance.

A notable feature of this receiver is the use of white "Celastoid," a material which is similar in appearance to ivory. It is used for the panel, and takes the place of wood in other parts of the set. The instrument is easily operated, there being only two controls. When working on its own aerial it is claimed to pick up most stations within a radius of 500 miles and reproduce them clearly on the loudspeaker. The loudspeaker, with a handsome fretted grille, is fitted into the lid of the case.

The "Zone" portable set weighs 20 lb. and retails at thirty guineas complete.

### Cone Loudspeaker Unit.

MANY radio amateurs appear to be very keen on building their own loudspeaker, and any equipment required for this purpose is bound to prove a popular selling line. J. Millet, of 39, Farringdon Road, E.C.1, has recently marketed a new loudspeaker unit, which has been specially constructed for cone type speakers. The volume is adequate for all general purposes, while the tonal quality is excellent.

The retail price is 14s. 9d.

Mr. J. Millet also supplies material for the construction of a cone diaphragm.

### "Magnum" Wavetrap.

MANY retailers and experimenters will be interested in a recent line of Burne-Jones and Co., Ltd., of Magnum House, 288, Borough High Street, S.E.1. This is a wavetrap suitable for use with any make or type of receiver, and by its use greatly increased selectivity is obtained. It is efficient and compact.

The "Magnum" wavetrap consists of a bakelite former, wound with silk-covered



Greatly increased selectivity may be obtained by the use of this "Magnum" wave-trap.

Litz wire, thus keeping high frequency losses at a minimum. The coil is tuned by means of an adjustable mica dielectric condenser, covering the broadcast wavelength.

Where the wavetrap has to be placed close to H.F. coils, a suitable oxidised copper screening box can be supplied.

The price of the wavetrap is 15s., and the screening box sells at 5s.

### Weston Radio Set Tester.

AN instrument that will prove invaluable to all retailers and radio engineers is the Weston radio set tester, model 519A, marketed by Weston Electrical Instrument Co., Ltd., of 15, Great Saffron Hill, E.C.1. The ease with which the various voltage

adjustments can be made, and any faulty valves or circuits detected, will also make a wide appeal.

This model has a handsome appearance and is fitted in a well-finished teak case with carrying handle and removable lid. It consists of a Weston instrument and bipolar switch, by means of which the following ranges of 200-20 and 8 volts for H.T., G.B. and L.T. respectively are selected. Two current ranges of 20 and 400 M.A. for plate and filament current measurements of valves can also be obtained.

Each instrument is provided with valve sockets, adaptors and flexible lead. In order that the characteristics of valves may be compared quite apart from any radio set, independent binding posts are fitted.

The retail price is £15 15s.

**Wright and Weaire, Ltd.**

**T**WO interesting lines are being produced by Wright and Weaire, Ltd., of 740, High Road, Tottenham, N.17: a W.G.2 tuner and a valve holder. The tuner is a single hole fitting inductance covering the broadcast and Daventry bands. It is constructed on an ebonite former in two sections, one being for the broadcast band and the second for high wavelengths.

Reaction on both bands is obtained by a section wound rotor, operated by a large dial. On the top of this dial a small knob is fitted: the high and low band switch. When this is pulled out, the broadcast range is in operation, and, when pushed home, the high wave band is in circuit.

This component occupies very little space behind the panel, and retails at 15s.

The valve-holder is anti-microphonic, and

incorporates several new ideas in construction. This holder takes the form of a circular bakelite moulding, on to which is fitted a shallow cylindrical unit. Fitted inside the unit are four sockets. A feature of these sockets is that from the valve pin connection to the soldering tag there is no joint of any kind, each being made of a complete strip of metal. The socket portion is sprung to its utmost capacity, and provides excellent buoyancy for the valve.

In appearance it is neat and splendidly finished. Each holder is provided with four terminals and tags, and retails at 2s. 6d.

**Price Reductions.**

C.D.M. fixed condensers, .0005 to .002	£ s. d.
.....	1 8
C.D.M. fixed condensers, .0025 to .006	2 0
C.D.M. fixed condensers, .01	3 6
Philips H.T. unit for D.C. (type 508) to	3 17 6
Pye 5-valve receiver to	27 0 0
Ripaults Lateral Action Condenser (without dial) to	10 6
"Slektun" coils from No. 15 to 1,000 now sell at prices from 3s. 6d. to 8s.	

**Jewel Pen Co., Ltd.**

**T**HE Jewel Pen Co., Ltd., of 21-22, Gt. Sutton Street, E.C.1, have marketed a new push-pull switch.

This is strikingly simple in appearance and is very easily operated. It has single-hole fixings, and is suitable for a panel of any thickness. When fitted, this switch occupies very little space, and gives definite contact by means of a milled-ebonite knob.

Two nickel-plated terminals are provided for the usual connections.

**Provincial Products**

**Purpose Coils.**

**S**IMMONDS BROS., Shireland Road, Smethwick, near Birmingham, are producing a new set of special purpose coils wound on Paxolin formers. These coils will find a wide market amongst experimenters and constructors, and manufacturers anxious to improve the coil arrangements in their receivers.

In one of these coil units, intended to serve as a short-wave H.F. transformer, a short gap is provided in the secondary winding, to allow the insertion of terminal stops in the former, thus making for much neater wiring of the unit. In the long-wave transformer, the secondary winding consists of 252 turns of wire, wound in twelve slots in ebonite spacers, which are also used to support the primary and neutralising windings. The retail price for the complete set of coils and bases is £3 17s. 9d.

**Spade Terminals.**

**A** USEFUL type of spade terminal is a new product by Clarkes, Sinew Works, Redditch, Worcestershire. It is of the familiar spade type, but the shank is lined and stamped with lettering to identify the lead. It is supplied in packets with assorted markings—L.T., H.T., G.B., A.E., E., and L.S. The price is 6d. per packet.

**Two New Receivers.**

**T**WO new receivers are being marketed by Stratton and Co., Ltd., Balmoral Works, Bromsgrove Street, Birmingham. One, the Eddystone Twin "1929 Model," is an outstanding example of modern design. It incorporates the glass panel feature which was originated by this firm, and this serves to show how extremely simple and clean is the wiring and the disposition of parts.

Two valves and a transformer are placed well towards the rear, and in the forepart is a tuning arrangement which seems to mark a departure from the usual methods

of tuning. A simple "station switch" is connected to this through the glass panel and gives an immediate change-over from one range to another.

A similar master-control switch is on the opposite side of the panel, the centre of which is occupied by a slow-motion tuning dial. Reception of about twenty stations at good loudspeaker volume is achieved by the use of a special method of amplification and a new four electrode valve, which is not yet on the market in the ordinary way.

The receiver is mounted in an oak cabinet with accommodation in the base for the batteries, and is sold with batteries, loud-speaker and valves, at an inclusive price.

The second receiver is the Eddystone "Popular Two," for which the usual loud-speaker ranges are claimed. Particular attention was paid in the designing of it to the construction of a set for family use, the operation needing no technical knowledge whatever.

There is one dial only for tuning, and one master control, another knob being for the variation of the coil coupling. The cabinet totally encloses the set, a small glass panel near the top giving a view of the coils and the valves.

All the terminals are mounted at the back, and the cabinet is mounted on Eddystone Absorbos, which takes up all shock and prevents the cabinet from scratching any polished surface upon which it may be placed.

**Latest "Goltone" Product.**

**T**HE latest product of Ward and Goldstone, Ltd., of Frederick Road, Pendleton, Manchester, is the "Indispenso" dual purpose charger for D.C. supplies only. By means of this very efficient instrument both high and low tension accumulators can be charged at a negligible cost.

The "Indispenso" consists of a pear-shaped bakelite moulding on which is fitted a lamp socket and a polarity indicator

Three flexible leads are provided, two for connecting to positive and negative of the accumulator and the other, which is fitted with an adaptor, is for plugging into an electric light socket. As the voltage of D.C. varies a table of Metallum lamps and wattages is provided so that a suitable lamp can be obtained.

When power rates are available this charger can also be used with a carbon filament lamp for charging a number of L.T. accumulators from one to twelve in series, and for this purpose the "Indispenso" is supplied with a standard 5-amp. 2-pin wall-plug in place of the adaptor, at 1s. extra.

The "Indispenso" is packed in a strong box, together with full instructions for use. Retail price 6s.

**P.D. Dual Portable.**

**A** CONSIDERABLE advance in portable sets has been made by Automobile Accessories, Ltd., of Redcliffe Street, Bristol, in the P.D. Dual which the firm has just placed upon the market. This set, which is claimed to be practically non-



Portability is combined with efficiency in this set, made by Automobile Accessories, Ltd., Bristol.

directional, will receive any station—22 stations have been received on short wave length in Bristol on this set.

The total weight of the receiver is 32 lb., and one of its features is its great mechanical strength.

The price, including royalties, is 25 guineas.

**Accumulator Capacity Meter.**

**T**HE Eagle Engineering Co., Ltd., Warwick, makers of "Chakophone" receivers and components, are now marketing a useful accumulator capacity meter which indicates precisely the charge of an accumulator. Models are made for 2, 4, and 6 volt accumulators, and for high tension accumulators, 60, 72, 90, 100, and 120 volts. It can be supplied either in black or nickel-plated for panel mounting.

**Convertible Accumulator Carrier.**

**T**HE Brookes Manufacturing Co., Ltd., of 222-224, Lichfield Road, Aston, Birmingham, have produced a very useful device, called the Brookes convertible accumulator carrier which, although light in construction, is rigidly made to stand heavy and constant wear.

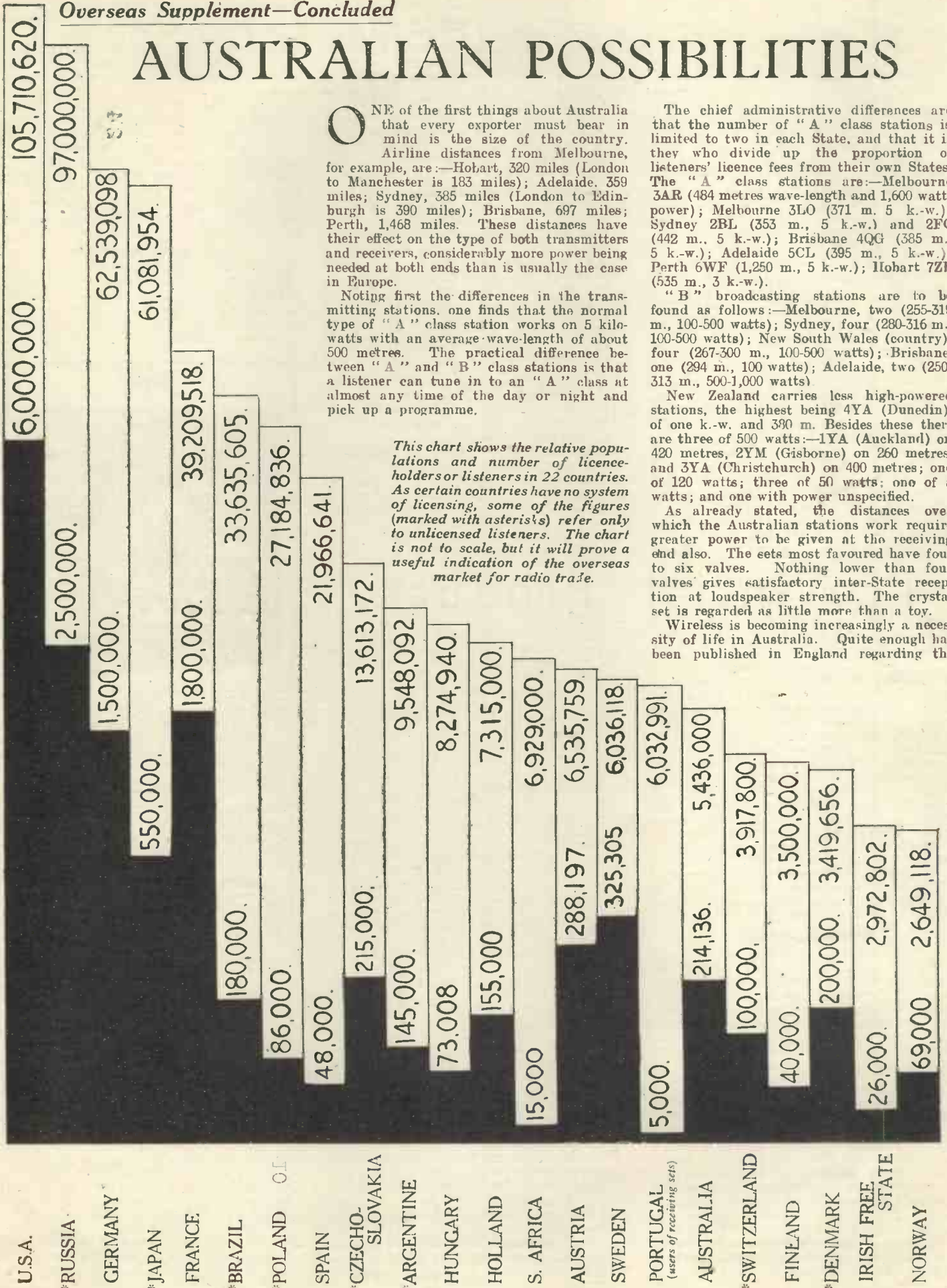
A great advantage of this carrier is that it may be adapted to carry 4 or 6 volt accumulators, and folds flat when not in use.

The price of this carrier is 1s. 6d., and a smaller model, made to take 2-volt accumulators only, sells at 1s.

Traders who are interested in these useful products are requested to communicate direct to the manufacturers.

Overseas Supplement—Concluded

# AUSTRALIAN POSSIBILITIES



ONE of the first things about Australia that every exporter must bear in mind is the size of the country. Airline distances from Melbourne, for example, are:—Hobart, 320 miles (London to Manchester is 183 miles); Adelaide, 359 miles; Sydney, 385 miles (London to Edinburgh is 390 miles); Brisbane, 697 miles; Perth, 1,468 miles. These distances have their effect on the type of both transmitters and receivers, considerably more power being needed at both ends than is usually the case in Europe.

Noting first the differences in the transmitting stations, one finds that the normal type of "A" class station works on 5 kilowatts with an average wave-length of about 500 metres. The practical difference between "A" and "B" class stations is that a listener can tune in to an "A" class at almost any time of the day or night and pick up a programme.

*This chart shows the relative populations and number of licence-holders or listeners in 22 countries. As certain countries have no system of licensing, some of the figures (marked with asterisks) refer only to unlicensed listeners. The chart is not to scale, but it will prove a useful indication of the overseas market for radio trade.*

The chief administrative differences are that the number of "A" class stations is limited to two in each State, and that it is they who divide up the proportion of listeners' licence fees from their own States. The "A" class stations are:—Melbourne 3AR (484 metres wave-length and 1,600 watts power); Melbourne 3LO (371 m. 5 k.-w.); Sydney 2BL (353 m., 5 k.-w.) and 2FC (442 m., 5 k.-w.); Brisbane 4QG (385 m., 5 k.-w.); Adelaide 5CL (395 m., 5 k.-w.); Perth 6WF (1,250 m., 5 k.-w.); Hobart 7ZI (535 m., 3 k.-w.).

"B" broadcasting stations are to be found as follows:—Melbourne, two (255-319 m., 100-500 watts); Sydney, four (280-316 m., 100-500 watts); New South Wales (country), four (267-300 m., 100-500 watts); Brisbane, one (294 m., 100 watts); Adelaide, two (250-313 m., 500-1,000 watts).

New Zealand carries less high-powered stations, the highest being 4YA (Dunedin), of one k.-w. and 390 m. Besides these there are three of 500 watts:—1YA (Auckland) on 420 metres, 2YM (Gisborne) on 260 metres, and 3YA (Christchurch) on 400 metres; one of 120 watts; three of 50 watts; one of 5 watts; and one with power unspecified.

As already stated, the distances over which the Australian stations work require greater power to be given at the receiving end also. The sets most favoured have four to six valves. Nothing lower than four valves gives satisfactory inter-State reception at loudspeaker strength. The crystal set is regarded as little more than a toy.

Wireless is becoming increasingly a necessity of life in Australia. Quite enough has been published in England regarding the

loneliness of homesteads and farms Outback, and it is all true enough, but what is more to the point for the distributor and selling agent is the paucity of entertainment in Australian country towns.

The growth in the number of licensed listeners has been extremely rapid. Last year the number of licensed listeners was as follows:—Ordinary—New South Wales, 56,908; Victoria, 113,612; Queensland, 22,226; South Australia, 15,904; West Australia, 3,616; Tasmania, 1,142; total, 213,408; grand total (including holders of special and temporary licences), 214,136.

#### Great Britain's Share.

The figure is in one sense poor, since it shows only about one person in thirty holding a licence; but if it is compared with the figures of the previous year, when the total of ordinary licences held was 125,047, it will be seen that there was a 70 per cent. increase in the twelve months. Moreover, since the population of Victoria is 1,711,827, and of New South Wales 2,347,781, if wireless sets were to be made as common in New South Wales as they are in Victoria, 100,000 would have to be sold. Seeing that a good part of the licence-holders last year require new apparatus as well, it may be stated that the capacity of the market has practically doubled.

It is satisfactory to be able to report that Great Britain has had a share in the growth of this trade. Only three years ago an Australian metropolitan daily newspaper had to stop the publication of a series of articles showing how to make receiving sets, at home. Readers complained that the articles specified only British parts which were not procurable in Australia. Things are different now. The examples that leap to one's mind are the great success which has been achieved by two British makes of valve and an English-made loudspeaker.

About one out of every two sets that one sees in private houses has valves of one of those English makes or the English loudspeaker. Their success depends on a variety of causes. They are about the best of their kind procurable, they are reasonably priced, and, given an equal value, Australian sentiment favours an Australian or British product. A man never has to make excuses to his friends for buying British goods.

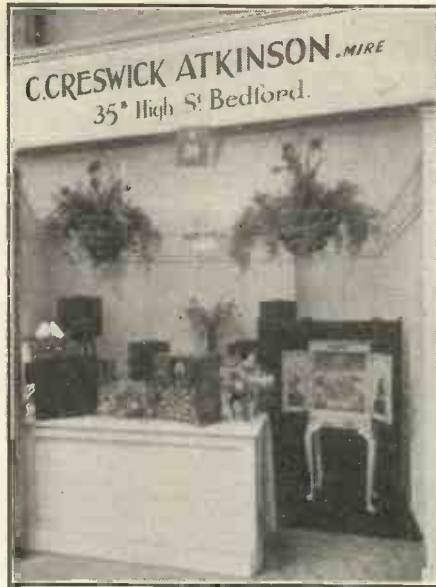
What, however, is even more important is that these firms are represented in this country. In face of the keen competition from American firms, it is hopeless for unrepresented firms to expect trade. Representatives—with adequate allowances for advertising—are essential.

#### Some Valuable Hints.

Two noticeable deficiencies are British dry cells and British receiving-sets. It is possible to search the pages of an Australian trade journal and not find a single dry cell of British make advertised. There was once a British two-valve set on the market, but it lacked selectivity and "punch." The matter boils down to this: a big trade can be done in the proper goods if distribution is rightly handled. Four-, six- and eight-valve sets are being sold by representatives of American firms in practically every State in the Commonwealth, and their selling is backed by service as well as supplies of suitable accessories.

For increasing the scope of British trade the first essential is a visit to this country and the selection of representatives. It would also not be out of place to remark that the Federal Government will usually consider the granting of trade concessions to firms which carry out in this country even the very last stages of production.

The reduction of the licence fee from 27s. 6d. to 24s., on which the Government have agreed with Amalgamated Wireless, is likely to keep up the constant growth in the number of listeners, so that the future for



Good taste and neat arrangement attracted attention to this stand at the British Industries Fair, London.

the wireless trade in Australia offers very bright prospects indeed.

#### Duties.

The duty on complete sets amounts to 55 per cent., but under the British preferential tariff to 35 per cent. only. The duty for component parts amounts to 40 per cent. and to 27 per cent. under the British preferential tariff. The duty on valves amounts to 15 per cent., but imports under the British preferential tariff are free. The duty on batteries and loudspeakers amounts to 10 per cent., but British imports are free.

## South American Broadcasting

ONLY two States on the South American Continent have as yet reached a certain degree of importance in the development of wireless. They are Brazil and the Argentine. The greater number of listeners will be found in Brazil, numbering approximately 180,000.

A better proportion between the total population and the number of set-owners will be found in the Argentine. Some 145,000 listeners are supposed to be in that country, and although the figure is not official, because there is no licence system in either of the two republics, it may be taken as fairly correct. Just in the Argentine the last year has been an extremely important one with respect to the growth in the volume of wireless trade.

#### Trade Growth.

At the time when the first broadcasting station was established in Buenos Aires, and during two or three years following its establishment, wireless was exclusively limited to the capital. It must be admitted that Buenos Aires, with its two million inhabitants, constitutes not less than one quarter of the total population of the country, but nevertheless, the other three-quarters form an important market.

That market has now been opened, not so much by construction of new and more powerful stations as by a simple alteration in the programmes. Instead of broadcasting concerts and entertainments only, the authorities have decided to send out market reports for farmers, weather news and other items of interest to the country population, in addition to the matter for "townsfolk"

The immediate consequence of this altera-

tion was an increase in sales of wireless apparatus amongst the occupiers of the large estancias and their numerous staff. The larger number of listeners in the Argentine, as compared with last year, finds its explanation in the fact that the country population has joined the ranks of radio enthusiasts. The stations at present working in the Argentine are, with the exception of Buenos Aires, all stations of minor power.

We are sorry to state that the share of Great Britain in the wireless trade of the Argentine, or, for that matter, in the whole of South America, does not at all correspond to the proportion between British investments and investments of other nations in the republic. The chief difficulty lies in the powerful American competition.

#### Travellers' Licences.

United States manufacturers are greatly favoured by the geographical situation, and by the general penetration of the South American States by American traders and agents. Personal representation has now become essential.

There is no chance at all of competing with United States manufacturers in crystal sets or cheaper valve sets. But in four-valve sets, which are mostly used at present, and in several component parts such as low-loss couplers, accumulators and dry batteries, there is still plenty of scope for British firms. Unless a very reliable and active firm of local representatives can be found, who will systematically work provincial towns, it is advisable to send efficient travellers as is done by all the French exporters, and one or two British firms.

For commercial travellers, it is, however, necessary to possess a licence from the Government. This licence is granted against a fee of 500 paper pesos. The amount is often subject to certain alterations, according to the territory which it is intended to cover. Such licences are obtainable on application to the "Administracion General de Contribucion Territorial de Patentes, Calle San Martin 561, Buenos Aires."

It is possible to evade payment of the fee by having the traveller registered as on the staff of some resident agent.

In Brazil, market conditions are similar to those in the south-western neighbour State, except that the country market is of less importance than the towns.

#### The Best Markets.

There is no licence fee payable by the commercial traveller in Brazil, but he will often be liable to a tax up to several hundred pesos, and he should have a certificate from his firm, legalised by a Brazilian consul.

Wireless goods shipped to Brazil must be accompanied by one consular invoice—that is, an invoice legalised at the Brazilian Consulate in Aldwych House, Aldwych, W.C.2, and by two copies.

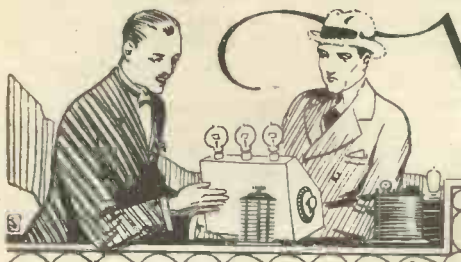
The best markets for sets and component parts are in Rio de Janeiro, which holds only 1,450,000 of the population of approximately 35,000,000, but is responsible for more than half of the total number of listeners, and in Sao Paulo, Pernambuco, Rio Grando, Bahia and Santa Cruz.

The broadcasting stations in Brazil are:—Rio de Janeiro (call sign SQZZ, wavelength 400 metres, power 2 kw.); Sao Paulo (power 5 kw.); and Bahia and Santa Cruz, relay stations.

#### Duties.

The duty on wireless goods and component parts for both Brazil and the Argentine amounts to 32 per cent. *ad valorem*.

Brazilian supplementary tariffs may, however, introduce alterations at any time, and it will be safe to ascertain the state of the duty at a given time before shipments are undertaken.



# World-Wide Wireless



## C A N A D A Ottawa.

**T**HE Supreme Court of Canada at Ottawa, Ontario, has rendered judgment in a matter of great interest to the radio world.

The Fada Radio Corporation appealed from a judgment of the Exchequer Court of Canada, which had decided that there had been infringement by that corporation of a valid patent known to the trade as the Alexanderson patent, the property of the Canadian General Electric Company.

The unanimous judgment of the Supreme Court sustained the arguments of the Fada Corporation and declared the Alexanderson patent could not be upheld as valid. The chief defences of the Fada Corporation were that Alexanderson's device did not constitute invention and that, if it did, he was anticipated by other inventors, particularly Wilhelm Schloemilch and Otto Von Bronk, in Germany.

It is understood that the respondents will launch an appeal to the Privy Council at London.

Fada Radio Corporation was represented by W. D. Herridge, Ottawa, and the respondents by O. M. Biggar, K.C., Russell S. Smart, K.C., Ottawa, and J. C. Macfarlane, Toronto.

**Price Reductions.**—The radio business in Canada has been going through a period of weakening prices, and late winter sales have been stimulated by the price announcements. The first substantial drop was noted in the case of the Rogers Batteryless Model, for which there was a reduction approximating 50 dols. Early in March, retailers featured price reductions on Atwater Kent, DeForest-Crosley and other radios, with miscellaneous lines also reduced. At Ottawa, Atwater Kent sets were quoted at 70 dols. to 165 dols., while DeForest-Crosley instruments were being sold at 44 dols. to 105 dols.

Another weakening feature in the Canadian market has been the move on the part of large departmental stores in Toronto and Montreal in clearing out radio stocks at bargain prices, thus intimating that the so-called radio selling season was nearing its end.

New reduced prices have also been announced for radio batteries, and a change has been effected in the listing of the battery prices. Formerly the zone price system was used, Western Canadian zones being higher than in the East. Under the new plan, prices to dealers are quoted f.o.b. nearest branch of the manufacturer or jobber's warehouse. This has caused a general revision of battery prices, and they are appreciably lower. Batteryless radio models have made an effect in the price situation, it is declared, but battery production costs are also lower.

## F R A N C E Paris.

**T**HE hope that France would have a regular régime, putting wireless at last on a solid and stable basis, is once more deferred. The famous 1926 Decree Law, though theoretically still in force, is dead as the proverbial door-nail. The scheme that was to reconcile, for four years at least, the State monopolists and the advocates of "controlled liberty" has proved abortive.

All the Chambers of Commerce and other

representative bodies want a system that will involve neither a public nor a private monopoly—that will give private enterprise a fairly free field while safeguarding general interests. The French wireless world dreads a State stranglehold that would keep radio behind the times.

**Action Against Price-Cutting.**—The Manufacturers' and Traders' Union, Paris, is acting energetically to put a stop to the price-cutting of marked articles. Manufacturers are to insist and, if necessary, legally enforce a rigorous respect for catalogue prices. These prices will be mentioned conspicuously on all invoices, dockets, packing, etc., and supplies withheld from any trader or intermediary selling or offering goods by advertisement at prohibited prices. Goods of mark cannot be given away as "premiums."

**German Competition Feared.**—The foreign trade returns for the January-November period of last year reveal reductions in both exports and imports as compared with 1926. The following are the principal figures, those of 1926 being placed in parentheses.

Imports of valves, 216 quintals (7 quintals—a quintal is 220 lb. avoirdupois); of other apparatus, 279 quintals (1,342 quintals). Exports: Valves, 246 quintals (562 quintals); other apparatus, 6,345 quintals (12,041 quintals). Exports are thus down by one-half.

French traders do not profit as they should by the advantages of exchange and the cheapness of their goods as compared with competing British articles. The latter are evidently served by their quality and reputation; indeed, they often sell well in most foreign countries when up against lower-priced products.

This, however, is no reason for not reducing prices as far as cost conditions allow. French consuls are calling their countrymen's attention to the German invasion of America. They quote figures to prove that Germany is gaining ground in the States to the detriment of Britain, and warn the trade that—favoured by the "enormous extension of the radio industry

in the Fatherland"—an attempt will surely be made beyond the Rhine to open up new markets in Europe as well as further west. The S.P.I.R. (Traders' and Manufacturers' Union) publishes in its monthly bulletin a letter to this effect, addressed from Königsberg Consul to the French Legion Office.

**A New Valve.**—The "Métal" Co. have launched a new valve in which the electrons are emitted by oxides (of barium, calcium, strontium, etc.) coating a nickel valve. This valve envelopes a silica rod drilled to receive a tungsten V-shaped heater whose temperature provokes the electronic emission of the oxides. The characteristics are: 2.5 volts, intensity, 1.75 amperes. Perfect electrical insulation exists between the nickel and silica tubes. The new valve can replace any existing model as a detector or for high frequency functioning.

## S O U T H A F R I C A

**S**OUTH AFRICA is on the eve of great things in the radio world, for the African Broadcasting Co., at the head of which is Mr. I. W. Schlesinger, of African Theatres, Ltd., has been developing its arrangements concerning the Johannesburg, Capetown, and Durban stations.

Mr. Eugene van Wyk, who has studied radio methods in America, and is the son of the secretary of the Nationalist Party on the Rand, Mr. O. J. J. van Wyk, has arrived from U.S.A. to take up the position of manager of the African Broadcasting Co. The company's aim is to get into touch with the isolated parts of the country.

**Listening-in to the Prince.**—The Prince of Wales's speech as Master of the Merchant Navy and Fishing Fleets at the Chamber of Shipping's banquet in London on February 23 was heard distinctly and in full by Mr. C. W. Christensen, 142, Seventh Avenue, Mayfair, Johannesburg, and by Mr. C. R. Slingsby at Capetown.

## BIRMINGHAM INSTALLATION

**M**R. MILTON DEEMING, Marconiphone agent, of the Whitworth Stores, Broad Street, Birmingham, was the contractor for the installation of a wireless receiver at the Birmingham and Midland Eye Hospital recently. The installation, which was built

by the Marconiphone Co., Ltd., is of a very interesting type, and is the forerunner of what the company intends shall be their standard set for use in hospitals and similar institutions.

It is as near foolproof as seems possible. It is, of course, worked off the mains, and a battery charger is built in the set, so that when not in use the batteries are being charged from the mains by a trickle charger. The whole of the apparatus is built into a vertical panel of prepossessing appearance, the tuning controls being simple and conveniently arranged.

Several hundred pairs of phones and a number of loudspeakers can be supplied with reception of adequate volume, and an interesting feature is the provision of balancing resistance at each point, so that when a loudspeaker or a pair of phones is withdrawn, no difference is made in the volume of reception at all the other points.

Thus all the phones but one might be withdrawn in any ward without there being any alteration of volume in the remaining pair. In addition, ward volume controls are provided, which can be adjusted independently of the other wards.



The stand at the British Industries Fair of the London Electric Wire Co., and Smiths, Ltd.



# Components or Complete Sets

by

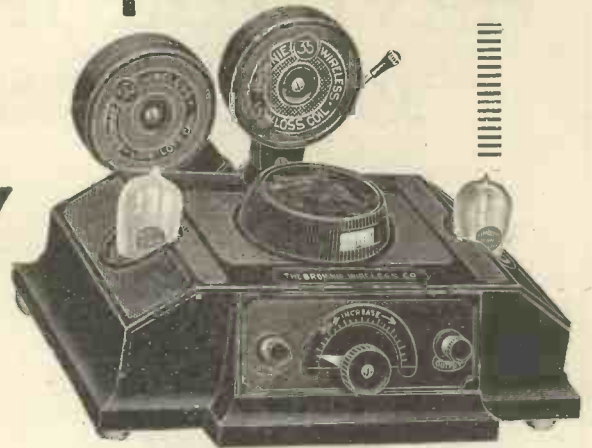
# BROWNIE

WIRELESS

*ensure satisfied customers!*

Brownie led the field in low-priced crystal sets. Brownie were the first to offer an inexpensive 2-Valver. Now Brownie maintain their position with a splendid range of components and accessories, distinguished for the high grade of materials used, and for the perfection of finish.

Instal Brownie lines and reap the increased profits that Brownie popularity ensures. Remember, attractive packing and prompt delivery are added sales advantages offered by Brownie.



**THE TWO VALVER.**  
All the latest Brownie improvements. Full clear loud-speaker reception up to 50 miles. From High Power station up to 120 miles. Complete with two Brownie coils. Valves and Marconi Royalties extra.

Retail **50/-**



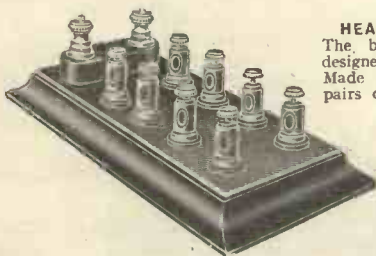
**BROWNIE TWO-PROGRAMME CRYSTAL RECEIVER.**  
The latest Brownie Receiver with two wave-lengths. 200-600 metres and 300-1,800 metres. No external or other loading coils required. Complete as shown above.

Retail **12/6**



**BROWNIE CRYSTAL RECEIVER No. 2.**  
"The World's Receiver." Natural wave length of 600. Adaptable, with loading coils, to 5XX Daventry. Complete as shown above.

Retail **10/6**



**HEADPHONE EXTENSION BOARD.**  
The board consists of a beautifully designed moulding with nickel fittings. Made to accommodate four pairs of headphones.

Retail **2/6**



**BROWNIE "POPULAR" TRANSFORMER.**  
A reliable 100 per cent. British article within the price of all. In beautifully moulded case Smart appearance.

Retail **9/6**



**BROWNIE TAG SOCKET.**

Wired as simply as a bell push. Each socket takes two pairs of 'phone or speaker tags and is supplied cartoned with diagram, instructions and screw for fixing.

Retail **1/3**

*Write to-day for full list of our products and trade terms.  
Full sets of displays supplied to Brownie stockists on request.*

# BROWNIE

BROWNIE WIRELESS CO. (G.B.) LTD., Nelson Street Works, Mornington Crescent, London, N.W.1

# HAVE YOU TAKEN ADVANTAGE OF OUR SPECIAL OFFER?



### OVERSEAS REPRESENTATIVES:

**AUSTRALIA**—R. V. Bristol & Co. (Pty.) Ltd., Melbourne.

**INDIA**—Bombay Radio Co., Bombay.

**CANADA**—C. M. Scott, Winnipeg.

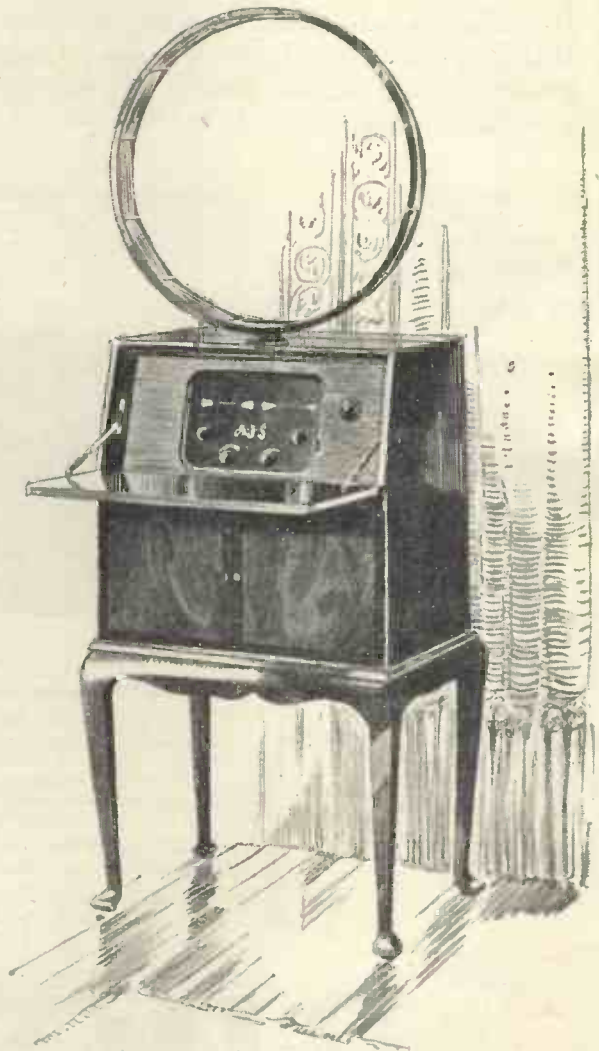
**NEW ZEALAND**—R. V. Bristol & Co. (Pty.), Ltd., Wellington.

**EAST INDIES**—Aarsen & Co., Java.

**PERU**—H. Gomez-Cornejo, Lima.

**EUROPE** — (Controlling Agent) G. A. Strasser, Birmingham, England.

**E**VEN THE HOME CONSTRUCTOR CANNOT COMPETE WITH THE AMAZING OFFER WHICH WE ARE EXTENDING TO YOU; YOU CAN REALISE 100% OR MORE ON YOUR OUTLAY, AND AT THE SAME TIME KNOW YOU ARE BUYING THE WORLD'S BEST IN RADIO. OUR SALES MANAGER WILL GLADLY TELL YOU MORE ABOUT THIS REMARKABLE INCENTIVE, AND YOU AS A FULLY ALIVE TRADER WILL NO DOUBT WRITE HIM AT ONCE, OR YOU MAY BE TOO LATE TO BENEFIT BY THIS MONEY MAKING SCHEME.



**A. J. STEVENS & CO. (1914), LTD., RADIO BRANCH, WOLVERHAMPTON**

'Phone: 1748 (7 lines).

'Grams: "Reception."

**London Office: 122/124, Charing Cross Road, London, W.C.2.**

'Phone: Regent 7161.

'Grams: "Ajayesso, Westcent."

# On the Commercial Wave-Band

Wherein we tell the financial story of the month

## NEW COMPANIES.

**H. Adams and Co., Ltd.**—Private company. Registered February 22. Capital £6,000 in £1 shares. To acquire the business of A. F. Crisp and H. Adams at 213, London Road, Reading, and at 18, Duke Street, Henley-on-Thames, as "H. Adams and Co." First directors: A. F. Crisp and H. Adams.

**Adey Wireless, Ltd.**—Private company. Registered February 25. Capital £1,500 in £1 shares. Manufacturers, repairers and dealers in portable wireless sets, loudspeakers, long-range receivers, cabinet receiving sets, wave meters and wireless parts, etc. Subscribers: G. F. Puckle and Edith F. Keeler. First directors not named. Registered office: 99, Mortimer Street, W.1.

**Aeonio Wireless, Ltd.**—Private company. Registered February 22. Capital £1,000 in £1 shares. Manufacturers and dealers in wireless receivers and instruments, etc. Subscribers: Kathleen Hosler and Mary Greig. Registered office: 32/36, Coventry House, South Place, E.C.2.

**Apex Magneto Co., Ltd.**—Private company. Registered February 17. Capital £1,600 in 1,000 "A" ordinary shares of £1 each and 12,000 "B" ordinary shares of 1s. each. Dealers. First directors: C. Valentine, P. S. Clark and J. Kershaw. Registered office: 31a, King Street, Stretford, Lancs.

**W. P. Barnell and Co., Ltd.**—Private company. Registered March 6. Capital £2,500 in £1 shares. Wireless engineers, etc. Permanent directors: W. P. Barnell, J. V. Hutchings and E. H. Cunningham. Registered office: County Chambers, 1, The Drapery, Northampton.

**The British Acetate Silk Corporation, Ltd.**, was registered as a "public" company on March 13, with a nominal capital of £2,700,000 in 2,557,500 ordinary shares of £1 each and 2,850,000 deferred shares of 1s. each. Objects: To acquire the undertaking and assets and all or any of the liabilities of the Bulmer Rayon Co., Ltd.; to acquire from Sir William Bulmer, Kt., certain plant, machinery, tools, stocks and stores; to adopt an agreement with Sir William Bulmer (providing for his employment as managing director for seven years), and two agreements with Smith Bulmer and Co., Ltd., and to carry on the business of manufacturers of and dealers in insulating material and other material or articles capable of being used for electrical or wireless purposes, etc. The minimum cash subscription is seven shares. Subscribers: S. A. Sharpe, F. J. Groombridge and five other clerks. The first directors are Sir Wm. Bulmer (managing director) and others to be appointed by the subscribers. Solicitors: Herbert Smith and Co., 62, London Wall, E.C.2.

**Broadcast Relay Service, Ltd.**—Private company. Registered March 1. Capital £2,000 in £1 shares. To construct and maintain wireless signal stations and all other stations for the reception of wireless or radio signals or waves, etc. Permanent directors: J. F. Powell and H. Solomon. Solicitors: Leaning and Carr, Clacton-on-Sea.

**Bromley-Langton Electric Wire and Insulator Co., Ltd.**—Private company. Registered March 8. Capital £2,000 in £1 shares. To acquire the business of dealers in radio accessories, etc., carried on by H. T. Bromley and F. C. Langton as Bromley and Langton, at 29, Newman Street, W. First directors: H. T. Bromley and F. C. Langton. Registered office: 29, Newman Street, W.1.

**Broughton Copper Works (1928), Ltd.**, was registered as a "public" company on February 20, with a nominal capital of £525,000 in 425,000 7/8 per cent. cumulative preference shares of £1 each and 2,000,000 ordinary shares of 1s. each. To acquire the business of the Broughton Copper Co., Ltd., and of John Bibby, Sons and Co. (Garston), Ltd., to adopt an agreement with the Broughton Copper Co., Ltd., and to carry on the business of dealers in copper ore and other metals, etc. The minimum cash subscription is seven shares of any denomination. First directors: L. Sumner, G. Fitzbrown, J. H. Bibby, E. C. Clark, F. Tomlinson, E. A. Mercer and D. H. Siltzer. The said directors are all directors of the above-mentioned companies. The office is at Broughton Copper Works, Manchester.

**Clark and Moir, Ltd.**—Private company. Registered February 18. Capital £3,000 in £1 shares. To acquire the business of wholesale wireless factors and importers carried on by J. S. Clark at 147-9, Newington Causeway, S.E., as "J. Francis." Permanent directors: J. S. Clark and A. W. Moir. Registered office: 147-9, Newington Causeway, S.E.

**Community Radio, Ltd.**—Public company. Registered February 25. Capital £30,000 in £1 shares. To adopt an agreement with the Community Radio Syndicate and to develop and turn to account the business of receivers, distributors and relays of radio, television and other programmes and radio engineers and manufacturers, etc., comprised therein; to erect radio or television stations in Blackpool, Lytham St. Annes, Fleetwood and adjoining districts. Minimum cash subscription: 8,000 shares. First directors: H. A. Thickett, W. R. Duckworth, A. T. Liver, H. J. Liver and J. A. A. Taylor. Registered office: Union Bank Chambers, Clifton Street, Lytham St. Annes.

**Cope, Morton and Co., Ltd.**—Private company. Registered February 17. Capital £1,000 in 900 8 per

cent. preference shares of £1 each and 2,000 ordinary shares of 1s. each. Manufacturers of and dealers in wireless apparatus, etc. First directors: J. Harrison and A. A. Bower. Qualification: 50 shares. Registered office: 163a, Strand, W.C.2.

**J. Edwards and Co., Ltd.**—Private company. Registered March 2. Capital £2,500 in £1 shares. Dealers in wireless appliances, etc. Directors: F. Stockdale and G. C. Smith. Office: 37, Corporation Street, Manchester.

**Elvira Sanson, Ltd.**—Private company. Registered February 29. Capital £2,500 in £1 shares. Dealers in wireless telegraphy instruments, etc. First directors: G. H. Scobbie, Mrs. E. E. Sanson and Mrs. E. F. Newton. Registered office: Trafalgar House, 11, Waterloo Place, S.W.1.

**Entaps, Ltd.**—Private company. Registered March 5. Capital £500 in £1 shares. Manufacturers of and dealers in wireless apparatus, etc. Directors: E. Tapsell and W. L. Langmaid. Registered office: 25, Thomas Street, Woolwich, S.E.18.

**General Products (London), Ltd.**—Private company. Registered February 22. Capital £3,000 in 2,000 10 per cent. participating preference shares of £1 each and 20,000 ordinary shares of 1s. each. To acquire from C. H. Cooper and W. E. Tydeman the benefit of the concessions granted to them for the purchase of the agency referred to therein. Dealers in wireless accessories and supplies, etc. First directors: C. H. Cooper and W. E. Tydeman. Registered office: St. Paul's Chambers, 19, Ludgate Hill, E.C.4.

**Fredk. E. Gillett, Ltd.**—Private company. Registered March 3. Capital £10,000 in £1 shares. To adopt an agreement with Frederick Edward Gillett, and to carry on the business of manufacturers and importers of and wholesale and retail dealers in wireless appliances and instruments, etc. First directors: Frederick Edward Gillett, Frederick Edward Gillett, junr., and P. G. Gillett. Solicitors: Slaughter and May, 18, Austin Friars, E.C.2.

**Hector Russell and Co., Ltd.**—Private company. Registered March 9. Capital £1,000 in £1 shares. Dealers in wireless apparatus of all kinds, etc. Directors: H. G. Russell, Mrs. C. K. Fairbairn and J. A. Hildreth. Qualification: 25 shares. Registered office: 19, Hamilton Street, Greenock.

**The Hoyal Body Corporation (1928), Ltd.**, was registered as a "public" company on March 12, with a nominal capital of £200,000 in 140,000 7/8 per cent. cumulative preference shares of £1 and 1,200,000 ordinary shares of 1s. each. The objects are to acquire the undertaking of the Hoyal Body Corporation, Ltd., to adopt agreements (a) with the said company, (b) with the said company and Carlton Greig and Co., and (c) with Carlton Greig and Co., also agreement with H. H. Hoyer and H. W. Allingham, to acquire the trade mark "Hoyal"; and to carry on the business of radio and general engineers, etc. Minimum cash subscription: Seven shares. First directors: H. H. Hoyer, H. W. Allingham, L. Gordon and C. Latham. Registered office: Hoyal Works, Weybridge, Surrey.

**Jelco Trading Co., Ltd.**—Private company. Registered March 3. Capital £100 in £1 shares. Dealers in electrical and wireless lamps, valves, wires, cables, apparatus, etc. Subscribers: S. van Mindeno and H. Weinberger. S. van Mindeno is the first director. Registered office: 2, Dyers Buildings, Holborn, E.C.1.

**Markyate Garage, Ltd.**—Private company. Registered February 14. Capital £5,000 in £1 shares. Dealers. First directors: J. McRae, E. F. Suter and R. P. Chambers. Solicitors: Engall and Crane, 28, Bedford Row, W.C.1.

**Mechanical Reproductions, Ltd.**—Private company. Registered February 27. Capital £1,000 in 5s. shares. Manufacturers of and dealers in wireless, telegraphic and telephonic apparatus, etc. Subscribers: Lillian J. Palmore and F. Greenfield. Solicitors: Grundy, Kershaw, Samson and Co., 6, Austin Friars, E.C.

**C. A. Middleton, Ltd.**—Private company. Registered March 2. Capital £1,500 in £1 shares. Mechanical, electrical, radio, automobile and general engineers. Subscribers: C. A. Middleton and F. Cooper.

**Newling Electric Supplies, Ltd.**—Private company. Registered March 1. Capital £2,500 in £1 shares. Manufacturers, importers and exporters of and

dealers in electric lamps and all kinds of electrical goods and equipment, etc. The directors are: C. G. Newling and C. S. C. Rippon. Registered office: 5, Princes Street, Hanover Square, W.1.

**North East Coast Engineering Services, Ltd.**—Private company. Registered February 15. Capital £1,000 in £1 shares. Dealers in wireless, etc. Subscribers: Mrs. A. M. Burdick and C. F. Armstrong. Solicitors: Freedman and Morton Smith, 47a, John Street, Sunderland.

**P.D.P. Co., Ltd.**—Private company. Registered February 29. Capital £5,050 in 5,000 8 per cent. cumulative preference shares of £1 each and 1,000 ordinary shares of 1s. each. To acquire the business of a wireless manufacturer's agent and dealer, etc., carried on by A. C. Dixon at 41, Great Tower Street, E.C. First directors: E. S. Marks and A. C. Dixon. Registered office: 41, Great Tower Street, E.C.3.

**P. and C. Manufacturing Co. (1928), Ltd.**—Private company. Registered February 20. Capital £500 in £1 shares. Dealers in telegraphic and wireless telegraphy apparatus, etc. Permanent directors: Adolf Posner and Max Posner. Registered office: 96, Middlesex Street, Aldgate, E.1.

**Radiant Advertising Co., Ltd.**—Private company. Registered February 15. Capital £500 in £1 shares. Dealers in wireless instruments and appliances, etc. First directors: A. W. Matthews, P. R. Biggs, W. T. F. Hardesty and W. A. Dickinson. Registered office: 23, St. Andrew's Street, Cambridge.

**Radio Maintenance, Ltd.**—Private company. Registered February 29. Capital £500 in £1 shares. Manufacturers, erectors and repairers of wireless apparatus, valves, equipment and accessories, etc. Subscribers: T. L. Fox and A. D. Pettit. First directors are to be appointed by the subscribers. Registered office: 15-17, King Street, St. James's, S.W.1.

**E. T. Roberts, Ltd.**—Private company. Registered February 20. Capital £3,000 in £1 shares. Objects: To acquire the business of a wireless agent, etc. now carried on by E. T. Roberts at Botchergate, Carlisle, as "E. T. Roberts." Permanent directors: E. T. Roberts, E. S. Roberts and W. Auckland. Solicitor: A. T. Saul, 29, Fisher Street, Carlisle.

**Robinson and Hands Electric Co., Ltd.**—Private company. Registered March 6. Capital £5,000 in £1 shares (4,980 7 per cent. cumulative preference and 20 ordinary). To acquire the business of Robinson and Hands Electrical Co., Ltd., in so far as it consists of electrical and wireless factors, and all trade marks, patents and designs connected therewith, the leases and tenancies vested in the company of, and in, 54, 55 and 56, Barwick Street, Birmingham, 2, Broadgate, Lincoln, Gleebe Street, Stoke-on-Trent, and 47, Station Road, Taunton, together with all factoring stocks, etc., and to adopt an agreement with G. W. Sparrow and F. E. Bendall. First directors: A. G. Robinson and F. H. Fennell. Registered office: 54, Barwick Street, Birmingham.

**Shaffesbury Distribution Co., Ltd.**—Private company. Registered February 16. Capital £2,000 in £1 shares. Manufacturers, agents and dealers in wireless apparatus and installations, etc. First directors: B. Moorwood-Megson and J. H. Pickard. Registered office: Kent House, 87, Regent Street, W.1.

**Specialised Repairs, Ltd.**—Private company. Registered February 29. Capital £500 in £1 shares. Objects: To carry on the business of manufacturers of, agents for and dealers in wireless apparatus, etc. Subscribers: N. P. Baker and C. L. Baker.

**Steval, Ltd.**—Private company. Registered February 15. Capital £1,000 in £1 shares. To acquire the "Steval Gramophone Co." Subscribers: C. L. Castle and C. G. Treacher. First directors are not named. Solicitors: Penman and Brown, Watford.

**Television Supplies, Ltd.**—Private company. Registered February 14. Capital £2,100 in 2,000 ordinary shares of £1 each and 2,000 deferred ordinary shares of 1s. each. Engineers, manufacturers and dealers in electrical, television and wireless apparatus. Subscribers: F. A. Smith and D. A. Scott. First directors not named. Solicitor: K. Thomas, Lennox House, Norfolk Street, W.C.2.

**Ernest W. Trott, Ltd.**—Private company. Registered February 27. Capital £3,000 in £1 shares. To carry on the business of dealers in copper and wire, etc. Life directors: E. W. Trott and Mrs. Ethel M. Trott. Registered office: 86, City Road, E.C.1.

**Truphono Trading Co., Ltd.**—Private company. Registered March 5. Capital £6,000 in 5,000 participating cumulative 10 per cent. preference shares of £1 each and 20,000 ordinary shares of 1s. each. Objects: To adopt an agreement with F. W. Welstead and F. M. Cooper, and to carry on the business of manufacturers of and dealers in wireless sets, wireless cabinets, loudspeakers, valves, batteries and accumulators, etc. Subscribers: G. J. Armstrong and E. F. A. Day. First directors to be appointed by the subscribers. Registered office: 189, Regent Street, W.1.

**United Rubber Manufacturers, Ltd.**—Private company. Registered February 20. Capital £1,500 in £1 shares. Dealers in wireless instruments, etc. First directors: S. L. Evans, H. G. Barnes and G. J. Bowman.

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**Westward Electrical Co. (1928), Ltd.**—Private company. Registered March 2. Capital £3,000 in £1 shares. To acquire the business of A. D. Herbert and H. L. Bangham at 36, St. Helens Road, Swansea, as "Westward Electrical Co. (1927)." Provisional directors: A. D. Herbert and H. L. Bangham. Solicitors: K. D. Edwards, Central Chambers, Goat Street, Swansea.

**W. S. Wilton and Co., Ltd.**—Private company. Registered February 22. Capital £2,000 in 1,500 ordinary and 500 7 per cent. cumulative preference shares of £1 each. Manufacturers, sellers and dealers in wireless apparatus, etc., and to acquire the business carried on at 56, Bromham Road, Bedford, as W. S. Wilton and Co. First directors: S. E. Watkins and G. Byfield. Registered office: 56, Bromham Road, Bedford.

**Zone Wireless Co., Ltd.**—Private company. Registered February 10. Capital £50 in 1s. shares. To acquire the Zone Wireless Co. The subscribers (each with one share) are: J. Q. Shirrepp and Margaret E. Maddison. The subscribers are to appoint D. D. Pyper managing director for five years. Registered office: Iddlesleigh House, Caxton Street, Westminster, S.W.1.

**PRIVATE ARRANGEMENTS.**

Summers and Gould, wireless and electrical dealers, 438, High Street North, E.12.—A meeting of the creditors was held on March 9. Mr. E. C. Randall stated that no statement of affairs had been prepared, but figures had been drawn up by the debtors which showed that there was a surplus of about £109. The liabilities to trade creditors amounted to £770, whilst there were two loan creditors for £128 and £213 respectively. The assets totalled £1,220.

The creditors resolved that the matter should be dealt with under a deed of assignment to Mr. Parkin S. Booth, of Kimberley House, Holborn Viaduct, E.C., as trustee.

**BANKRUPTCIES.**

**Augustus Henry Crump**, dealer in wireless, late 202, Walworth Road, S.E., as Selwyn Electrical Engineering Co., lately 184 and 220, Walworth Road, S.E.—At the first meeting of creditors held at the London Bankruptcy Court it was stated that the debtor owed £500 and had assets £121.

Severe competition in the wireless section of his business was the cause of his present position. The electrical section had always been a success.

The case was left in the hands of the Official Receiver, who will wind up the estate.

**Leopold Arthur Harcourt**, cycle and wireless agent, High Street, Sutton Valence, Kent.—The public examination of this debtor was recently held. According to the statement of affairs, there were liabilities of £718 2s. 6d. against assets of £189 4s. 5d. Debtor attributed his failure to want of capital, bad trade owing to inclement summers 1926 and 1927, pressure by creditors, and to excessive costs of executions and writs, and illness. The examination was closed.

**London Cabinet Co., Ltd.**, White Horse Yard, Essex Road, N., manufacturers of wireless and gramophone cabinets.—Under the Winding-up Order made on January 30 the first meetings of the creditors and shareholders were held on March 1.

The Official Receiver presided and reported that the company was formed with a nominal capital of £500 to manufacture and sell wooden cabinets, particularly for wireless sets, gramophones, etc., and was promoted by Isydor Reuben Preston and Sydney Bertram Hereford.

The company's failure was attributed to the unsuccessful use of a special spray polishing machine which the company purchased at a cost of £55, the use of which was not understood by the staff, with the result that a large amount of material was spoiled and had to be made good at a loss to the company.

The liquidation was left with the Official Receiver. **John Tucker Nichols**, wireless parts merchant, 4, Glebe Road, Kingsland Road, Dalston.—On February 24 the above debtor applied to Mr. Registrar Francke at the London Bankruptcy Court for a discharge.

The Official Receiver reported that the liabilities were £233, and assets to the value of £150 had

been recovered by the trustee. He attributed his insolvency to the failure of the Reflex Radio Co., Ltd., and to the liabilities for costs of an action brought by him against the preceding creditors.

His Honour suspended the discharge for three months.

**MORTGAGES AND CHARGES.**

**Celebrity Gramophone Co., Ltd.**—Particulars filed of £2,000 debentures authorised by resolutions of January 3 and 6, 1928, charged on the company's property, including uncalled capital, the whole amount being now issued.

**Currys (1927), Ltd.**—Mortgage dated February 9, 1928, to secure £3,680, and further advances charged on certain properties in Long Eaton. Holders: Bradford Third Equitable Benefit Building Society.

**Currys (1927), Ltd.**—Two mortgages dated February 11, 1928 (1) to secure £4,350 and further advances, charged on properties in High Street, Southampton, and (2) to secure £1,350 and further advances charged on property in Stroud, Glos. Holders: Bradford Third Equitable Benefit Building Society, 48, Market Street, Bradford.

**Dental and General Radiography, Ltd.**—Debenture dated February 4, 1928, to secure £500, charged on the company's undertaking and property, including uncalled capital.—Holder: F. Daphne, 10, Charterhouse Square, E.C.

**J. J. R., Ltd.**—Particulars filed of £250 debentures authorised January 27, 1928, charged on the company's property and assets, including uncalled capital, the whole amount being now issued.

**Kirk Wilson, Ltd.**—Mortgage dated January 31, 1928, to secure £2,800, charged on land with bowling green, garage thereon in Wragby Road, Lincoln. Holders: E. C. Midgley and J. W. F. Hill, solicitors, Silver Street, Lincoln.

**Short Wave Communications Development Co., Ltd.**—Particulars filed of £2,000 debentures authorised February 2, 1928, charged on the company's undertaking and property, including uncalled capital and land and two houses in Wickford, the amount of the present issue being £1,500.

**Smith and Sturt, Ltd.**—Second debenture dated January 23, 1928, to secure £200, charged on the company's undertaking and property, present and future, including uncalled capital. Holders: F. C. Smith, La Mina, Ranegua, Chili, South America, and W. E. Jenkins, Hazelmere, Four Ashes, Dorridge, Warwickshire.

**Thompson Young and Co., Ltd.**—Debenture dated February 21, 1928, to secure £340, charged on the company's undertaking and property, present and future, including uncalled capital. Holder: Mrs. M. E. Young, 92, Highbury New Park, N.5. Also debenture of same date to secure all moneys not exceeding £300 which the chargee may pay under a guarantee with the company's bankers, charged on the company's undertaking and property, present and future, including uncalled capital (subject to the above debenture). Holder: S. Young, 29, Mark Lane, E.C.

**SATISFACTIONS.**

**Radio Communication Co., Ltd.**—Satisfaction in full on February 3, 1928, of debenture dated April 14, 1926, securing £81,500 (£10,000 outstanding).

**Radio Service (London), Ltd.**—Satisfaction in full on February 15, 1928, of debenture dated July 25, 1927, securing £125.

**RECEIVERSHIPS (APPOINTMENT OR RELEASE).**

**Brijane, Ltd.**—F. T. Shearcroft ceased to act as receiver or manager on February 3, 1928.

**Commercial Telephone and Electrical Co., Ltd.**—J. H. Rook, solicitor, of 22, Southampton Street, Holborn, W.C., was appointed receiver on February 10, 1928, under powers contained in debentures dated April 30, 1924.

**General Radio Co., Ltd.**—F. S. Fisher, C.A., of 329, High Holborn, W.C.1, was appointed receiver and manager by order of court dated February 16, 1928.

**N.S. Battery and Equipment Co., Ltd.**—P. B. Nevill ceased to act as receiver and manager on January 18, 1928.

**Rose Bros. Electrical Co., Ltd.**—T. G. Weavers ceased to act as receiver or manager on February 3, 1928.

**Uelma, Ltd.**—F. T. Shearcroft ceased to act as receiver or manager on February 3, 1928.

**L. H. Wadsworth, Ltd.**—E. S. Thorn ceased to act as receiver or manager on February 14, 1928.

**Wireless Piano Players, Ltd.**—W. Holman, incorporated accountant, of 11, Queen Victoria Street, E.C.4, was appointed receiver on February 9, 1928, under powers contained, debentures issued at various dates from August 4 to October 27, 1927.

**NOTICES OF INTENDED DIVIDEND.**

**William Hay Dickson and Alexander James Solomon**, trading as Dickson and Solomon, wireless engineers, 13 and 14, Tavistock Street, Devonport, Plymouth, Devon. No. 44 of 1926. Claims to Alfred N. F. Goodman, 11, St. Aubyn Street, Devonport.

**Henry David Douglas**, trading as H. D. Douglas and Co., 32, Queen Victoria Street, E.C.4. Wireless factor, etc. No. 791 of 1926. Claims to Ebenezer Henry Hawkins, 4, Charterhouse Square, London, E.C.1.

**Catalogues and Literature**

**Burndept Wireless, Ltd.**—Publication No. 152, dealing with the new "Screened Four" receiver, is a fine example of good printing. A full description, including instructions for use and technical notes, are contained in this excellent fourteen-page booklet.

**Celestion Radio Co.**—A charmingly reproduced folder in three colours, dealing with the loud-speakers of this company.

**S. H. Collett Mfg. Co.**—List No. 28. An attractive folder, printed in two colours, is issued by this firm in connection with "Excel" products.

**D. P. Battery Co., Ltd.**—A new folder containing complete details and illustrations of the "Kathode" L.T. type cells, also 20-volt and 30-volt H.T. batteries. The cover is attractively printed in two colours.

**Dublier Condenser Co., Ltd.**—A well-arranged catalogue and price-list. In four sections for quick reference. Profusely illustrated.

**Falk, Stadelmann and Co., Ltd.**—This firm's latest catalogue (No. 586) is a fine example of good printing and good production. Each of the "Etesca" wireless products is fully described and illustrated in half-tone. The sixty pages are enclosed in a cover of brown art paper attractively designed.

**Harlie Bros.**—Multi-sided folder, containing full particulars of all lines made by Harlie Bros. Printed in two colours, adequately illustrated and well arranged. This is also designed for use as a pocket log chart. Space is left for overprinting trader's name and address.

**The Irish Radio News.**—A new weekly, the official organ of the Wireless Society of Ireland, with programmes of the two Irish stations, Cork and Dublin, and news and articles of general interest.

**The Marconiphone Co., Ltd.**—A coloured leaflet dealing with the new Marconi 2-volt general purpose valve.

**L. McMichael, Ltd.**—An attractive folder, with illustrations in three colours, of the "Dimic Three" and the "McMichael Five" receivers.

**Metro-Vick Supplies, Ltd.**—Publication No. 7117/10, showing their latest product, the Met-Vick 3-valve mains-receiver. The booklet has 12 pages, pointing out the advantages of a mains-receiver and instruction for installation and operation of their 3-valve model.

**C. A. Vandervell and Co., Ltd.**—Their latest brochure, "The Modern Battery," which illustrates and describes in a simple and non-technical manner the advanced progress and improved design of C.A.V. batteries. An excellent production enclosed in a cover of thin card.

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# Around the Radio Trade

## Birmingham.

There is a curious divergence of views amongst dealers in Birmingham as to the value to the retailer of the boom in home-constructed receivers made from bits of parts and circuits marketed by manufacturers. Dealers who cater specially for the experimenter and constructor say the results have been excellent.

On the other hand, dealers who in the past have done good business in the selling of complete receivers report an alarming falling-off in sales, and wonder where this newly-stimulated fashion of making sets at home is going to end—for them. For one dealer at least, who has consistently refused to indulge in price-cutting and other adventitious aids to business it means selling off and closing down.

One of the bright features on which most traders are agreed is the permanent appeal of the portable set. Walker Bros. report good retail trade in McMichaels, and Priestley and Ford, the wholesalers, also report a good volume of business in this and other well-known portable sets.

**Trade Summary.**—Amplifiers: Good demand for component parts. Batteries: Excellent sales still maintained in all well-known dry types, and L.T. accumulators. Increasing business in eliminators is reported. Coils: Fair tone evident. Condensers: Steady sales. Loudspeakers: Good turnover in most well-known types. Moving coil units going ahead. Phones: Small demand. Valves: Sales largely confined to 2-V. class; Marconi, Osram and B.T.-H. best sellers. Portables: McMichael and Pye still favourites. Transformers: Good demand for Marconi, Ferranti, and R.I.

## Bristol.

Complaints of slackness have been general during the past month; probably this is due partly to the increase of wireless traders, and it is a moot point whether the limit in this direction has not been reached. Until the number of listeners increases very considerably it would seem that there is not sufficient business to keep existing retailers busy, especially after the dabbler—and he is very much to the fore in Bristol—has taken his tribute.

**Trade Summary.**—Good demand for Cossor "Melody Maker" components, and also for the Mullard "Master Three." Batteries steady; Lissen and Sure-a-Lite good sellers. Valves in fair demand; Mullard, Cossor and Marconi lead. Loudspeakers on the slow side. Portables: Fairly good demand. Eliminators: Selling steadily.

## Darwen.

The volume of trade in wireless sets and components during the past month has been less than usual owing to the depression in the staple cotton industry: but interest is maintained in Brandes and Marconi receivers and the better class components, notably the Mullard "Master Three."

## Derby.

**Trade Summary.**—Batteries: Steady sales. H.T. accumulators: fair business. Eliminators: Good, especially parts for home construction. Coils, loudspeakers, transformers, valves and condensers: Steady demand. Tuners: Good sales. Cossor and Mullard home construction set parts: Good. R.C. Units: Moderate. Gramophone pick-ups: Steady.

## Halifax.

**Trade Summary.**—H.T. Accumulators: Moderate sales. Dry Batteries: A fairly good line. Cossor "Melody Maker" and Mullard "Master Three" components in good demand. Valves: A steady trade being

## Notes and summaries of March trade in the principal centres of Great Britain.

done. Triotron and Cossor valves sold quite well. Loudspeakers and eliminators: Quiet. Transformers: Ferranti and R.I. are popular. Trade generally satisfactory.

## Hastings.

The great feature of recent trade has been the increasing demand for portable sets.

**Trade Summary.**—Batteries: Siemens, Ever-Ready, Exide, Sure-a-Lite and Lissen in chief demand; "foreigners" have slumped badly. Valves: Mullard, Marconi, B.T.-H. and Cossor. Six-Sixty running well in some districts. Coils: Igranic, Lissen, Gambrell and Lewcos, all in very good demand. Transformers: Ferranti, Marconi, and R.I. Condensers: Ormond, G.E.C., Igranic, Eureka and Varley. Loudspeakers: Celestion and Amplion. Receivers: Marconi models in consistent demand; "Met.-Vick. Five," Gecophone models, Cromwell III and Edison-Bell "King" popular. Portables: The new Rolls, Pye, Ormond and Halcyon.

## Hull.

Trade running evenly. The lines most spoken of are Cossor "Melody Maker" and the Mullard "Master Three."

**Trade Summary.**—Sets: Marconiphone, G.E.C. and Brandes most popular. Valves: Mullard, Marconi and Cossor have the biggest sale; the latter appears to be very popular. Loudspeakers: Celestion, Amplion and Brandes. Batteries: Lissen, Ever-Ready and Siemens.

## Leeds.

Trade generally in the city has improved during the last month, and constructors are still busy with the Solodyne, Raleigh, and, of course, the "Melody Maker," "Master Three" and "Threesome."

**Trade Summary.**—Batteries, dry H.T.: Good demand. Accumulators, H.T.: Fair sale. Eliminators: Better trade than of late. Loudspeakers: Celestion, M.P.A., B.T.-H., Brown in first-class demand. Receivers: More complete sets being sold. Valves: Cossor, Mullard, Edison, Osram, Marconi apparently the best sellers, with all "combine" valves good.

## Leicester.

Trade much quieter than last month. There is still cutting of prices in this area.

**Trade Summary.**—The usual components for the Mullard "Master Three" and the Cossor "Melody Maker" are still in demand. Sets: Marconi and Brandes popular. Accumulators: Oldham and Exide. Batteries: Siemens, Ever-Ready and Lissen on a par. Loudspeakers: Cone-shape most popular; B.T.-H., Amplion and Brown next best. Cossor, Ferranti, Mullard and Lissen apparatus all in good demand.

## Liverpool.

Many inquiries for portables have been received of late, and they are expected to be good selling lines during the next two or three months.

**Trade Summary.**—Although there has been a slight decrease in the demand, turnover is good for the time of the year. Batteries: Ever-Ready and Lissen are a steady trade. Accumulators: C.A.V., Exide and Oldham selling well. Loudspeakers: Amplion, B.T.-H., Browns and Sterling are going moderately well. Valves: Fairly good sale for Marconis, Mullard, Cossor, Osram and Ediswan. Transformers: Fair demand, chiefly for R.I. and Varley, Ferranti, Marconi, Igranic, G.E.C., Silvertown, Pye's and

B.T.-H. Condensers: Steady sale for Ormonds, Polar, R.I. and Varley, Igranic, Pye's and G.E.C. Headphones: Very quiet. Brown's, Brandes, B.T.-H. Complete receivers: Marconiphone, Pulford Bros., Pye's, Rolls, B.T.-H., McMichael's and G.E.C. are the makes attracting most attention. H.T. Eliminators: Business rather quiet.

## London.

**Trade Summary.**—Batteries: Good demand both for H.T. and L.T. Coils: A brisker tone was evident in plug-in types. Transformers: Steady trade for all well-known makes. Valves: All ring valves are selling well, with very little competition from foreign makes. Condensers: A fair all-round demand. Eliminators: A steady increase. Loudspeakers: Good sales for all makes, with a preference for cone types. Pick-ups: Good business in medium-priced instruments. Receivers: Fair, but consistent volume of trade for two- and three-valve models. Portable Sets: Increased business.

## Middlesbrough.

**Trade Summary.**—Loudspeakers: New Amplion 37s. 6d. cone sells best; many inquiries for moving coil speakers, also Ormond and Celestion models; steady sale for latter and Brown models. Eliminators: Mullard, Phillips and Benjamin, quiet sales; Ferranti trickle charger, a popular line. Accumulators: Oldham and Exide best sellers both for L.T. and H.T. Batteries: Lissen an easy first; Ever-Ready and Hellesen good lines for regular trade. Valves: Cossor, Marconi and B.T.-H. Sets: Brandes III. enjoys great popularity. Condensers: Ormond (standard variable S.L.F.) an easy winner. Fixed condensers: T.C.C. and Lissen most popular. Transformers: Ferranti, R.I. and Varley and Lissen.

## Monmouth.

**Trade Summary.**—Loudspeakers: A fair demand for Amplion hanging cone. Brown and Celestion makes are also popular. Burn-dept receivers selling well, and Marconiphone models retaining their popularity. Gecophone receivers very successful. Fairly good business is reported for other components, but a comparatively slow trade has been done with components for the Ediswan "Threesome," Mullard "Master Three" and Cossor "Melody Maker."

## Newport.

Trade is booming and dealers report no falling-off in sales. A steady sale of complete sets, mostly of the two- and three-valve type, is a feature of the trade.

**Trade Summary.**—Batteries: Steady demand for all reputable makes. Transformers: Lissen and Ormond favoured. Valves: Cossor and Mullard hold sales, but a call also for Marconi and B.T.-H. Condensers: Brisk trade for Lissen and Brandes. Loudspeakers: Horn types have a slight lead on cones, but both are selling fairly steadily.

## Northampton.

The chief feature of the radio trade in this district has been the demand for wave traps and the interest in moving coil loudspeakers.

**Trade Summary.**—L.T. batteries: Good demand, especially for Exide D.T.G. and D.F.G.. H.T. batteries: Steady demand, with Ever-Ready the best sellers. Eliminators: Sales improving, especially for the necessary components. Transformers: The leading makes still selling well, with Ferranti the best sellers. Condensers: Good sales for both types. Ormond and T.C.C. preferred. Coils: Steady demand for the best makes. Valves: Cossor and Mullard the best sellers.

**Loudspeakers:** Steady demand, cone types preferred, with good inquiries for moving coil types, such as Magnavox and B.T.-H. "R.K." Valve sets: Steady demand for portables and components for Cossor "Melody Maker" and Mullard "Master Three."

#### Nottingham.

A "portable" summer is predicted, and traders are concentrating on five-valve sets in particular.

**Trade Summary.**—A splendid month for loudspeakers, particularly of the better class type. Artistic cabinet sets have been in good demand, and there is a steady market for the "general utility" set, compact and not too costly. Accumulators and amplifiers have gone well and valves have been sold in great numbers, all the leading makes coming in for strong request. Coils, medium, Cossor "Melody Maker" and Mullard "Master Three" in demand.

#### Paisley.

Leading dealers report a good demand for better class sets at prices ranging from £25 to £35, and that portable sets are gaining increased favour. Mr. Peter Hamilton, whose knowledge of the business is extensive, points out that it is now five years since the Glasgow station opened, and in that time the best sets have been reduced from £50 to £25. The gramophone pick-up, which is growing so popular in the south is coming into favour in Scotland.

#### Plymouth.

**Trade Summary.**—Receivers: Still a demand for Marconi 22 and 32 sets, with call for other leading makes of three valves. Loudspeakers: B.T.-H., Amplion and Celestion are popular. Valves: Good demand for the principal makes. Coils: Igranic a best seller. Condensers: Ormond sought. Accumulators: Fair demand for both L.T. and H.T. Batteries: "Ever-Ready" a popular line. Components: Steady call for Cossor "Melody Maker," Mullard "Master Three," and Ediswan "Threesome." A better supply from the wholesalers is enabling traders to push these goods successfully.

#### Pontypool.

Components for the Mullard "Master Three" and Cossor "Melody Maker" have been the best selling lines of the month. Trade generally has been fairly brisk and practical retailers have had an unusually busy month. Brandeset IIIA has been a good line in complete receivers.

#### Portsmouth.

A notable feature in connection with the trade is the growing volume of hire purchase sales for complete installations, and the instalment principle is also being extended to battery eliminators and loudspeakers, both of which are still going out well.

**Trade Summary.**—Amplifiers: Very little sale except as gramophone pick-ups. Batteries: Best H.T. sellers are Ever-Ready, Popular, Hellesen, and Lissen; L.T. rather on slow side, but demand continues for Oldham and Ediswan, while Pertrix non-salammoniac dry has taken on well. Eliminators: Still in fair demand, with average inquiries for Mullard, Marconi, and Goltone; Yeldon's (local manufacture) at £5 10s. proving good seller. Condensers, fixed: Mainly Dubilier, T.C.C., and Edison Bell; variable: Ormond, Brandes, and Igranic principal call. Loudspeakers: Cone type growing in favour, Amplions doing good business; Brown range also sell well. Transformers: Ferrant's still required, Woodalls being satisfactorily introduced, Telsen and Lissen best market in cheaper lines. Valves: Mullards still leading, with Cossors and Marconis closely following.

#### Rotherham.

**Trade Summary.**—Trade has not been particularly brisk during the last month. Apart from portables there was little demand for receivers. An increased call for components indicates a busy time on the part of the home constructors. Loudspeakers: Amplion, Brown and B.T.-H. in fair demand. The cheaper variety of valves are best sellers, but Cossors well maintained their popularity. Condensers: Negligible. Transformers: Fair. Coils: Moderate. Batteries: Slow, with Exide most called for.

#### Sheffield.

**Trade Summary.**—Many inquiries for portable sets. Cossors and Mullard still maintain their popularity among the valves, although "Triotron" has come considerably to the front, the Wonder Wireless Store reporting a sale of 1,000 of that valve. Loudspeakers: Amplion, B.T.-H. and Celestion most popular. Batteries: Exide best seller. Receivers: Quiet; most call for low-powered sets.

#### Stafford.

Trade has decreased slightly during the past month, but traders are not grumbling, for a steady business is being done.

**Trade Summary.**—Sets: Little demand on the whole. Speakers: Burndept "Ethocone" going well. Cone speakers now chiefly in demand. Batteries: Steady demand. Exide and Oldham high-tension units are improving in popularity. Valves: Mullard most sought after. Transformers: Ferranti A.F. 5 selling fairly well. Coils: Steady demand. Igranic, Lissen and Lewcos are popular types.

#### Stourbridge.

The purchasing of receivers on the instalment plan is growing here and in the neighbouring country districts.

**Trade Summary.**—Amplifiers: Demand occasional and slow. Batteries: Modest sales, new grid bias types popular. Coils: Special types in increasing demand. Condensers: Quiet. Phones: A steadily diminishing trade. Loudspeakers: Buying

## Removals and Extensions

Mr. P. T. Bradley is shortly to open new premises in The Green, Stafford, as demonstration and show room. The premises have been completely reconstructed, and when finished are to be fitted up on the modern salon lines.

Mr. H. Stanley Smith, electrical and radio engineer, of St. Leonards-on-Sea, has now opened a branch establishment in Queen's Road, Hastings.

Booth Bros., the well-known Middlesbrough radio factors, have opened commodious new premises in Stockton, where they are experiencing good business.

King and Co., of Hull, are moving to larger premises in the centre of the city.

Messrs. A. J. Coleman and Co., 41, The Arcade, Northampton, have commenced trading as electrical and radio factors.

The Radio Supply Co., 11, Wood Street, Northampton has moved to larger and more convenient premises at 11a, Wood Street, next door to their old premises.

Mr. Paul Taylor, the Northampton Burndept service agent, has transferred his business to Stanford Road, Kettering.

Messrs. Brooks and Clayton have given up their shop in Conduit Street, Leicester, and it has been opened by Lyrics, Ltd., who has as one of its members Lionel Hart, a well-known factor, of Sparkenhoe Street, Leicester.

Messrs. Wright and Co., of Narborough Road, Leicester, have removed to 9, New Bond Street, Leicester, while Bernard Hendry has opened a shop at the corner of Eastleigh Road, Leicester.

is even in respect of all the leading makes, moving-coil types coming towards the front. Transformers: Ferranti's and Ideal continue popular. Valves: Good trade, little fluctuation. Receivers: Marconiphone, B.T.-H., Metro-Vick, good sellers.

#### Sunderland.

Although quiet, trade, on the whole, is fairly steady, while the outlook for the summer is improving. Fewer buyers are, however, coming in from the pit districts.

**Trade Summary.**—There is a continued demand for the Mullard "Master Three" and the Cossor "Melody Maker." Loudspeakers are selling well, particularly Cossor, Mullard, and Osram, with the small Brown also in favour. Exide accumulators good sellers. Valves: Cossor and Mullard.

#### Tunbridge Wells.

On the whole, trade is still flourishing and the demand for complete sets continues.

**Trade Summary.**—Batteries: C.A.V. wet and Exide W.H.10 are both good lines and are selling well; whilst, among the dries, Ever-Ready, Hellesen, and Lissen hold premier place. Eliminators: Burndept, All Mains, and the Mullard H.T. are both going fairly well. Condensers: The new Burndept lowloss has established itself well, and the Ormond (No. 3) is also finding buyers. Loudspeakers: Mainly Gecophone; but, for a cheap make, Bullphone is demanded. Transformers: Marconi, Ideal and Ferranti still hold the market; General Purpose R.I. and Brandes, Igranic also being asked for. Valves: Burndept, Mullards and Cossors selling well. Receivers: The Pye portable sets are still firm favourites.

#### Ulster.

Trade is showing a slight seasonal falling-off. Sales of parts for building the "Master Three" and the Cossor "Melody Maker" continue to be good, and have proved a welcome help to the trade.

Trade in the country districts continues to be fairly good. The great trouble would appear to be—from the wholesaler's viewpoint—that the trader will not carry adequate stocks, and therefore cannot hope to get business. Very few men buy on "paper."

A Belfast Agency.—Mr. William Garmany, 31, Donegall Street, Belfast, is now handling for Ulster the "British Standard" valves, retailing at 5s. each, irrespective of voltage or type.

**Trade Summary.**—In batteries, Lissen are still in great demand; Siemens, Sure-a-lite, Ever-Ready, all sell well. Valves: The Mullard series top the bill, with Cossor probably second, though Osram are always in fair demand. Trade in complete sets is patchy, though Brandes and Marconi are in demand.

#### Walsall.

There continues to be a good deal of interest in home constructed sets, notably the Cossor "Melody Maker" and the Ediswan "Threesome."

**Trade Summary.**—Batteries: H.T. 60 and 90-V units still a good feature. Coils: Brisk tendency. Condensers: Quite a good demand for leading types. Components: Small lines and screens and metal panels show better results. Loudspeakers: Amplion, Brandes, B.T.-H., and Gecophone keep a bright appearance. Transformers: As good as can be expected. R.C. units: Improving. Valves: Sales not so large, but still good. Receivers: A firm market.

#### Weymouth.

**Trade Summary.**—Batteries: Brisk demand; wet cells have declined somewhat in popularity. Valves: Dull emitters largely in demand, with Mullard and Cossor leading. L.T. accumulators: Fair demand. Variable condensers: S.L.F. type most popular, all good brands selling well. Battery eliminators: Numerous inquiries, but few sales. Loudspeakers: Trade falling off slightly. Receivers: Good business in Marconiphones and Langham portables.

# The WIRELESS RETAILER

The Official Organ of the  
Wireless Retailers' Association  
(of Great Britain)

Vol. 4. No. 12.

April, 1928

## Factors' Association Essential

**I**N the February issue, under the title "Are Factors Needed?" we quoted certain of the remarks of a writer in a contemporary journal. We make no apologies for repeating the quotation, which was as follows: "The only way I can see to stop price-cutting definitely is to dispense with the services of the factor and make the retailers purchase direct from the manufacturers." We stated that we could only endorse that opinion if factors proved less amenable to deal justly with legitimate retailers than did the manufacturers.

Our article was written under the same heading as the above, and the substance of it had reference to an invitation to factors generally to lend their support to our scheme for limiting trade discounts to *bona-fide* wireless dealers.

Let us say at once that except for the leading factors in the country, who have come forward in a gratifying manner almost to a man, the response has been

significantly meagre. It would seem, indeed, that with the factors rests the whole crux of the discount question. That is a fact to be noted.

The list of the firms who have given their permission for their names to be published is appended, and we may add that most of them have gone further than this and rendered very valuable assistance to the Association in other ways.

The tenor of their letters, moreover (extracts from which are published elsewhere in these pages), affords convincing evidence of their sympathy with the campaign which the Association is conducting in the interests of the legitimate retailer wherever situated, and the genuineness of their desire to act fairly will not be doubted.

*Bona-fide* dealers cannot help but realise that these factors are their friends, and that as such their friendship should be reciprocated.

And now we come to the solution of the discount problem. It is not a new solu-

tion, but it is one that has become more than ever apparent. It is the formation of a Factors' Association, an Association that will work in the closest liaison with the W.R.A. We believe that most of our friends desire such an Association, but certain influences are holding them back. These influences can be overcome by a sufficiently insistent demand on the part of retailers.

It will be seen, therefore, that the solution of the discount question really rests with the dealers themselves. They must combine in greater numbers than ever before. But there must be a national association representing them all to voice their demands.

Dealers in other trades have shown what can be done by combination. Let legitimate retailers make up their minds once for all to unite. Let them realise the logic of the situation. Let them put aside apathy and, above everything else, let them act and act *at once*.

### Uninsured Flood Losses—

**C**ONVERSATION with a manufacturer whose factory was inundated reminds us that phenomenal weather conditions this year have resulted in many of our members—and others—finding themselves faced with losses which were not covered under any of their insurance policies.

Whilst the ordinary policies exclude the hazards of storm, tempest and flood, it is now possible, under the W.R.A. special Traders' Comprehensive Policy, to include cover against storm and tempest; but members will readily appreciate that a separate policy would be necessary for flood damage, as rates vary with each location and its relationship to danger zones, and further, premises with basements would be more highly rated than others.

### —And Broken Glass.

**S**KILFUL window-dressing is a fine art, and there are now firms of specialists who will send a dresser to you periodically for a consideration. Even if you rely on the resources of yourself and staff, however, no little expenditure of time and trouble is involved, and it is clear that traders lose whenever a window-plate is broken, with the resultant disorder and, as usually happens, the unsightly boarding process which has to take place.

A plate-glass policy covers the replacement of the glass itself, but does not cover either cost of repairing window frames or the damage to the goods displayed; and

again, if the window has to be boarded up, the plate-glass policy does not pay this cost, and the object of this little reminder is to let traders know that our Insurance Department can effect a supplementary policy to cover these three items at quite a moderate premium.

## List of Factors Supporting the Discount Scheme

Accessories (Edinburgh), Ltd.  
Beadle, T., and Co., Ltd.  
Beardsall, W. E., and Co., Ltd.  
Black, Michael.  
Brown Bros., Ltd.  
Burris, Fred., and Sons.  
Capel's Wholesale Wireless Co., Ltd.  
Cleave, H. R., and Co.  
Cook's Wireless Co., Ltd.  
Dayzite, Ltd.  
Dawson, Fred.  
Dew, A. J., and Co., Ltd.  
Eastick, J. J., and Sons.  
East London Rubber Co., Ltd.  
Ellison and Hillman.  
Empress Radio and Electrical Co.  
Fielding, T., and Co., Ltd.  
Flinders (Wholesale), Ltd.  
Hobday Bros., Ltd.  
Hollingsworth, W.  
Houghton-Butcher (Gt. Britain), Ltd.  
Huet Bros.  
Hulme, E., and Co.  
Inman, D.  
Irvine, J. F., and Co., Ltd.  
London Electric Stores, Ltd.

Manchester Machinists Co., Ltd.  
Manchester Radio Co., Ltd.  
Midland Automobile Components.  
Murdoch Trading Co.  
Newcombe, F. D., and Co.  
North British Machine Co., Ltd.  
Northern Steel and Hardware Co., Ltd.  
Nottingham Radio Supplies  
Priestly and Ford.  
Radiocraft Supplies, Ltd.  
Riddiough, Frank, and Son.  
Robertson, James.  
Sel-Ezi Wireless Supply Co., Ltd.  
Sellers, of Leeds.  
Sinclair, J. Corston, and Co.  
Sloan Electrical Co., Ltd.  
Southern Motor Factors, Ltd.  
Station Radio Stores.  
Sun Electrical Co., Ltd.  
Superlamp, Ltd.  
Thomson and Brown Bros.  
Whiteley, S. E., Ltd.  
Wholesale Fittings Co., Ltd.  
Wildbore, J. E.  
Young, Thos. D., and Son.

# The Opinions of the Factor

FROM the large volume of correspondence from factors all over the country which we have received, the following extracts are chosen.

Many of the letters received not only indicate a wholesale desire to participate in the W.R.A. scheme, but also bring to light some of the difficulties under which factors are labouring.

Thus: "We hasten to point out that we are prepared to support your object in every way, but we in this district are faced with price cutting to a very great extent, discounts of as much as 20 per cent. and 25 per cent. being given to ordinary members of the public. We are very much afraid that until this stops, it is going to be extremely difficult to get the trade on to anything like a footing."

Again, another letter reads: "We would state that we are fully in sympathy with the contents of your letter."

"We know of many instances where certain radio factors allow practically anyone trade terms, on the simple condition of answering a question from the sales counter, 'Are these goods for the trade?'"

### A Suggestion.

"Might we suggest that it would be much better if it were compulsory for the name and full address of each dealer to be put on the cash sale note? In our opinion it is ridiculous to allow trade terms to any purchaser who simply states he is in the trade; even a trade card should not be accepted unless the supplier is certain that the trader is bona-fide."

"We consider that this cash sale business is the root of all evil existing."

That many factors have endeavoured by individual action to restrict trade terms solely to the trade, is also evident:

"I am very pleased to see that something is being done in the matter of stopping supplies to illegitimate retailers. I have done everything in my power since starting in the wholesale trade to stamp this out in my district, and although I am still troubled with this, I think I have gained a fair amount of success in reporting all cases that have come to my knowledge and having supplies stopped to same."

"I have always made a strict point of inquiring into a trader's business before selling him any goods, and I can assure you that all my customers are legitimate retailers."

"I shall be greatly obliged if you will give me further particulars of your intentions for the future and keep me posted with any further developments, as I shall be a very strong supporter of this scheme."

### The Right Attitude.

Interest is undoubtedly keen, and many firms are alive to the possibilities of success which should attend a combined effort on the part of factors to stamp out this evil. The W.R.A. action is welcomed, for instance, here:

"We beg to acknowledge receipt of your letter dealing with a very serious problem of discounts to non-traders. This is a matter such as in the past received very careful attention from this company, and we have endeavoured, through a wide range of channels open to ourselves, to locate the exact status of any dealer, not already on our records, approaching us on trade lines."

"You have, however, shown us that this is a rule and condition which will be strictly adhered to in the future, and we welcome the stand which you are taking in the matter."

This is the type of attitude which promises well for the success of the scheme, and if every factor felt—and acted—alike, the evil would undoubtedly be rapidly suppressed.

A similar spirit is manifest in another communication from which the following is extracted:

"We entirely agree with your remarks. As a matter of fact, we are most careful in the direction you mention and take every precaution possible when opening new accounts, as we will not supply any wireless goods to any firm who do not carry stock and are not engaged in the trade in a bona-fide manner."

"We are out to stop dabbler supplies wherever possible. We shall therefore be only too pleased for you to include the name and address of our firm in the list you are compiling, and you may have our assurance that we will take every reasonable precaution to prevent the allowance of discounts to persons outside the trade."

Indeed, the whole tone of the correspondence received by the W.R.A. on this matter shows not only a desire to help, but real appreciation of the W.R.A. and its work.

"We are quite in agreement with you in the fact that the granting of discounts to persons who are not legitimately engaged in the trade is against the interests of the trader, the wholesaler and the manufacturer."

"We shall be very glad if you will be good enough to include our name in the list of wholesalers who will take every reasonable precaution to prevent the allowance of discounts to persons outside the trade."

"I am in full agreement with the purport of your letter and have pleasure in allowing my name to be included in your list as one who has always looked after the interest of the genuine retailer in the radio trade."

"You certainly have my assurance that no person, firm or company, other than those fully entitled to do so, will receive the trade terms on radio goods."

"Wishing your Association every success."

### Individual Successes.

Some firms have undoubtedly been successful in preventing abuse of trade discounts by means of individual methods, and their experiences will be very useful to the organisers of the scheme:

"We fully endorse your point of view on the above subject, and we would like to point out that we have advocated this discrimination between wireless trader and goods trader for several years past, and our policy has been to supply at a discount only those who really are genuine traders, and not amateurs or other dabblers."

"Wishing you every success in your efforts in this direction, and assuring you of our support in every way."

The writer of the above has evidently found it possible to restrict discounts to legitimate traders, and if one firm's effort can be successful it should be obvious that a national campaign has every possible chance of success.

### Suspected Manufacturers.

The fact that certain manufacturers supply non-traders is mentioned here:

"As members of the wholesale section of the late N.A.R.M.A.T., we adopted from the commencement of that Association the rule to supply to the trade only, and we are therefore in agreement with your ideas on this subject."

"This is a city of mechanics, and we not only have radio traders here who are receiving wholesale terms and selling retail, but many manufacturers also are not above suspicion in supplying at trade terms the many home workers."

One of the most interesting letters received contained the following:

"We can assure you that as the only purely wholesale factors in — who do no retail business whatever, we are quite in accord with your aims and are agreeable to be included on your list of firms who undertake not to allow discounts to persons outside the trade."

"We think another list of factors who are also retailers would be quite a useful thing to circulate amongst your members."

We have reproduced only a small percentage of the remarks and suggestions which we have received. We think, however, that sufficient has been quoted to prove the keen interest which has been aroused.

## THE WIRELESS RETAILERS' ASSOCIATION (of Great Britain)

Hon. Secretaries:  
70, FINSBURY PAVEMENT,  
London, E.C.2.

### FORM OF APPLICATION FOR MEMBERSHIP.

Sirs,

I/we desire to join THE WIRELESS RETAILERS' ASSOCIATION, and shall be pleased if you will submit my/our name/s to the Committee for election at the next meeting.

Yours faithfully,

<b>SUBSCRIPTION</b> £1 1s. 0d. per annum. No entrance fee.	Name .....
	Address .....
	.....
	Date .....
Particulars of Business .....	

NOTE.—Subscriptions become payable upon election, and should be sent direct to the Hon. Treasurer, H. C. WILLARD, Esq., 48, London Wall, London, E.C.2. (whose receipt alone will be recognised).



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Retail Prices:—Oak 35 Gns.  
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**T**HE Langham Portable leads the Portable Market. Now, here is the new Langham Transportable—a self-contained 5-Valve Receiver complete in every detail, requiring no aerial or earth and selling at 35 Gns.

Contained in a beautiful Oak Cabinet incorporating a Langham Radio Speaker, the Transportable at once takes the lead in this class of receiver, in quality, performance and price.

The range is as great as that of the Langham Portable, and this is materially affected by the turntable, which is concealed in the base of the cabinet. There is only one tuning control, and the long and short wave ranges are simply switched in—there are no coils to change. Each Set is supplied with a complete calibration chart.

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*Write for particulars now!*

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MODEL C 12



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**A**S far South as New Zealand, as far North as the Hudson, East to Hong Kong and West to Vancouver, British "Celestion" enjoys the reputation of being the standard of comparison amongst loud speakers.

"Celestion" sales have soared steadily but surely, even during the recognised off seasons. Sheer merit and perfect craftsmanship aided by the "Celestion" patented reinforced diaphragm have earned this enviable distinction.

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French Agents :  
CONSTABLE & CO.,  
Paris.

Australian Agents :  
VEAL & CO.,  
Melbourne.