

APRIL 1, 1922

BULLETIN R

Acme Apparatus

Radio Catalog
RECEIVING APPARATUS



Acme Apparatus Company

Transformer and Radio Engineers
and Manufacturers

"ACME TRANSFORMERS"

186 Massachusetts Ave. Cambridge, Mass. U.S.A.

Foreword

The ACME APPARATUS COMPANY was established early in 1919, and has steadily grown. When Radio was only enjoyed by the Amateur, there were few stations in the country which did not have at least one piece of ACME APPARATUS, and many of the existing manufacturers used ACME Transformers in apparatus of their own manufacture.

Radio has now become of national interest, increasing the number of enthusiasts a hundred fold daily. The demand for ACME APPARATUS has necessarily increased tremendously because the amateur became the adviser of the novice, and the novice became the inquirer of the amateur.

Realizing that Radio had been moved from the attic or cellar to the living room, the ACME APPARATUS COMPANY began constructing additional apparatus suitable for use by the novice.

We welcome adverse criticism as well as favorable, and are pleased to have defects in material or workmanship brought to our attention. All apparatus is constructed by men skilled in the art, and checked by a rigid inspection and test.

OUR GUARANTEE

ACME APPARATUS is guaranteed against defective material and workmanship, and we always try to make adjustments to the satisfaction of the customer.

TERMS

All prices in this catalog are F. O. B. Cambridge, Mass. Cash should accompany orders received from persons or firms, with whom we have not opened an account. We are pleased to open an account with those furnishing satisfactory credit references.

In the absence of payment with orders, we reserve the right to ship C. O. D.

SHIPPING

ACME APPARATUS is always packed in a manner suitable to stand ordinary handling in shipping.

Unless otherwise instructed we shall use our own judgment regarding method of shipment.

When Cash is sent with orders to be delivered by Parcel Post, the postage should be added. If amounts in excess are sent the balance will be returned.

ACMEFONE



FOR

RADIO TELEPHONY

A Radio Receiving Set which can be operated
by anyone

Radio Telephony (formerly called wireless telephony) is now being enjoyed by thousands of people. Music, lectures, up-to-date news, market reports and children's stories are being broadcasted by powerful transmitting stations in many of the large cities.

Most of the radio apparatus on the market today has been designed for use by those skilled in the art, and is therefore too complicated for use by the novice. The ACMEFONE has been developed for the use of those having no knowledge of radio practice, and to whom heretofore the pleasure of listening to radiophone broadcasting has been denied.

No more skill is required, than is required to operate a phonograph or player piano, although the extreme simplicity in no way impairs the efficiency of the device.

The ACMEFONE is a complete radio receiving set, with the exception of the antenna, vacuum tubes, and batteries. The an-

tenna, or aerial, consists of one or more wires strung in a convenient place, usually outdoors, and collects the radio communications. The vacuum tubes are amplifiers, or magnifiers, which increase the intensity of the voice or music to a degree necessary to operate the loud speaking telephone supplied in the set. The batteries consist of a 6 volt battery for lighting the vacuum tube filaments, and 2 dry batteries for amplification purposes.

The radio dealer can supply these accessory pieces of apparatus, and can give instructions for the installation of the antenna. When purchasing an ACMEFONE, the dealer will put the vacuum tubes and dry batteries in place, making it only necessary for the purchaser to connect the antenna and storage batteries to terminals provided on the rear of the cabinet.

The ACMEFONE contains a tuner which selects only what is being broadcasted from one particular station, and consists of a single adjustment, which when once made, needs no further attention while the transmitting station is operating.

An amplifier is provided, which magnifies the weak notes existing in the antenna and tuner, so that they become strong enough to operate the loud speaking telephone to a degree that may be heard by all sitting around the room.

Places are provided for connecting telephone receivers, should their use be desired.

Directions for operating the set are attached to the cover. There are only four knobs, one for the Tuner, and three for the vacuum tubes. Those for the vacuum tubes are only used when starting and stopping the set, and the Tuner knob is used only when starting, or changing to receiving from a different transmitting station.

The cabinet is made of highly finished mahogany with black bakelite front and nickel plated fittings, making the set suitable for placing in the living room.

APPARATUS REQUIRED FOR COMPLETE RADIO RECEIVING OUTFIT:

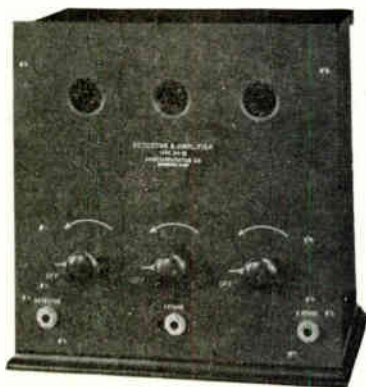
- 1 ACMEFONE
- 1 Antenna
- 3 Vacuum Tubes
- 2 22½ volt dry batteries
- 1 60 ampere hour Storage Battery

Acmefone, \$80

DY-10 Two Stage Amplifier and DY-12 Detector and Two Stage Amplifier



DY-10



DY-12

The DY-10 Two Stage Amplifier and DY-12 Detector and Two Stage Amplifier are comparatively new pieces of apparatus added to the ACME line. They have both been developed to fulfill the requirements of modern radio reception, both as to efficiency and appearance. Radio has been brought to the living room in most homes, and it is only fitting that the apparatus should harmonize with its surroundings.

These pieces of apparatus have the well known ACME Amplifying Transformers which have earned the reputation of amplifying speech and music most efficiently without distortion.

The ACME APPARATUS COMPANY has developed a positive tube socket and a noiseless rheostat. The rheostat is so constructed that very fine variations in filament current can be obtained, a feature so essential to efficient operation of vacuum tubes.

Jacks are provided on both the Detector and Two Stage Amplifier, and the Two Stage Amplifier, so that the Detector may be used alone, Detector and one stage of amplification and Detector and two stages of amplification.

The cabinet is made of highly finished and polished mahogany with ample space to put in two of the largest size 22½ volt B bat-

teries. The terminal board is on the back and contains the well known Eby binding posts which readily hold small and large size wires, and are most easily operated.

Having the terminal board on the back prevents the appearance of the apparatus being destroyed by unsightly wires. The front panel and terminal board are made of Formica suitably engraved. Although terminals are provided inside of the cabinet for fastening the B batteries, additional terminals are supplied on the terminal board for those desiring an external source or higher voltage.

These pieces of apparatus are strongly recommended to those already having a radio receiver who are desirous of increasing their reception range or of operating a loud speaking telephone.

| | |
|---------------------------------------------------------------------|-------|
| DY-10 Two Stage Amplifier (without tubes) | 35.00 |
| DY-12 Detector and Two Stage Amplifier (without tubes) | 45.00 |

Y-1 Detector and Y-2 Amplifier

Many amateurs today are purchasing the necessary apparatus for detectors, one and two stage amplifiers, and assembling them into units of their own design and construction. The ACME APPARATUS COMPANY has developed the Y-1 type of detector and Y-2 type of amplifier, both of which sell at a price only slightly greater than the retail price of individual parts. This saving in price of a completely mounted instrument is made possible by producing in quantities, buying in quantities and by so designing the apparatus that a minimum of labor is required in assembling efficient and attractive units which when connected together contain all the essentials necessary for the detection and amplification of signals.

The Detector contains a tube socket, condenser, grid leak, A battery potentiometer and filament rheostat all mounted on an engraved bakelite panel with binding posts marked so that external connections may easily be made. An attractive Mahogany box incloses the condenser, grid leak, rheostat and connections, leaving the nickel plated portion of the tube socket, nickel plated binding posts and engraved panel exposed. The rheostat handle projects on the front of the box and is supplied with a pointer under which is a nickel plated dial divided into degrees.



Y-1 and Y-2

The A battery potentiometer handle is beside the rheostat handle. This potentiometer is so connected that the B battery voltage may be varied—an operation so essential to detector tubes.

The amplifier contains a tube socket, ACME A-2 Amplifying Transformer and filament rheostat all mounted on an engraved bakelite panel with binding posts marked Input, Output, A and B batteries. The same style and size of mounting is used as with the Detector, and both instruments are ready for use by inserting a tube and connecting the necessary external apparatus.

Those purchasing only a Detector can later obtain a single stage amplifier which when placed beside the detector has its binding posts so located that connections are an easy matter between the detector output and amplifier input and between the two A and B battery binding posts, thus producing a compact detector and single stage am-

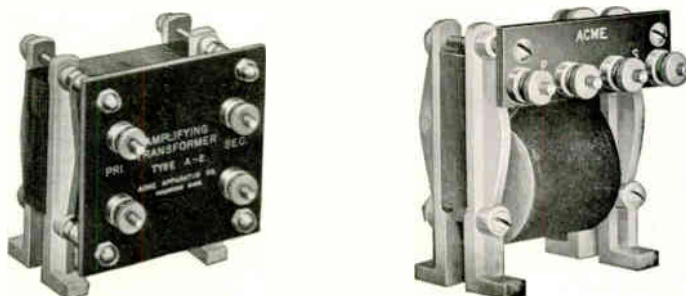
plifier with separate filament control, same A and B batteries, a minimum of connecting wires, and harmony of attractive apparatus. By the addition of another single stage amplifier a detector and two stage amplifier is obtained with the same ease of connection and attractive appearance. If desired a two stage amplifier can be made with two single stage units and connected direct to any detector already on hand.

Under all conditions the wires used in connecting the various parts of either a single or two stage amplifier with or without detector are reduced to a minimum, a feature so essential to prevent howling and inductive disturbances when amplification is employed.

These pieces of apparatus are strongly recommended for the reception and amplification of radio telephony.

| | |
|------------------------------------|---------|
| Y-1 Detector (without tube) | \$10.00 |
| Y-2 Amplifier (without tube) | 13.00 |

Amplifying Transformers



A-2 Types

To most efficiently amplify radio signals at audio frequencies by means of cascade vacuum tube amplification it is necessary to couple the plate circuit of one tube to the grid circuit of the next by means of a transformer. After exhaustive tests it has definitely been proven that the properly designed and constructed closed iron core transformer is much more efficient than the open iron core or air core transformer due to less losses in the winding, less capacity effects and being less affected by stray fields which produce howling.

To get the maximum efficiency from an amplifying transformer the impedance of its primary should equal or exceed the impedance of the plate to filament circuit of the tube to which it is connected and the impedance of the secondary should equal or exceed the impedance of the grid to filament of the next tube. The ratio of transformation or ratio of turns of primary to turns of secondary should therefore be the square root of the ratio of these two impedances as the impedance of the winding varies with the square of the number of turns. Besides this consideration it is essential to have the distributed capacity of the windings reduced to a minimum and to employ the best of material in order to reduce the losses. Although an amplifying transformer is small there is a great variation in the efficiencies of those of different design and construction.

ACME Audio Frequency Transformers are designed to be used most successfully with those tubes now on the market whose impedances of plate and grid circuits call for a ratio of primary and secondary turns of 1 to 4.25. This ratio is used in the ACME A-2 type. ACME Audio Frequency Transformers are also designed for use on Radio Telephony without distortion, a feature so essen-

tial today. Excellent material and good workmanship are used, and a rigid inspection maintained to insure a uniform well made product.

After hooking up an amplifying transformer it is well to try the secondary terminals connected to the grid and filament first one way then the other and note the difference. It is usually found that the best results are obtained with the outside secondary terminal connected to the grid and the inside to the filament. It is also well to keep the grid at a negative potential in order to prevent grid currents as current flow greatly changes the effective impedance of any transformer.

The complete ACME A-2 type of amplifying transformer is mounted as shown in the cut on aluminum supports with engraved bakelite panel, nickel-plated fittings and binding posts. Two other styles are supplied, one having aluminum supports and terminals on a bakelite strip, shown on Page 1, and the other type consisting of coil and core assembled.

- Type A-2 Completely mounted with engraved panel. .\$.7.00
- Type A-2 Assembled with supports and binding posts 5.00
- Type A-2 Core and coil assembled. 4.50

GUARANTEE

The ACME APPARATUS COMPANY was one of the first companies to manufacture an Amplifying Transformer for amateur use, and has, after much time and expense, obtained an Amplifying Transformer with a guarantee against mechanical defects.

The coil of the ACME transformer is impregnated under vacuum and pressure, thereby insuring against the absorption of moisture which has already caused so many coils to open circuit; no soldering flux is used to slowly eat the small wire and open the windings; the correct size of wire is used to reduce the resistance, and at the same time keep down the distributed capacity; the correct primary and secondary individual impedances are used, as well as the correct turn ratio, to give maximum amplification; an attractive and serviceable mounting is provided;—all at a reasonable price.

ACME APPARATUS COMPANY

186 Massachusetts Ave.

Cambridge 39, Mass.

Price List

RECEIVING APPARATUS

AMPLIFIERS AND DETECTORS

| | |
|----------------------------------------------|-------|
| Y-1 Detector | 10.00 |
| Y-2 Amplifier, Single Stage | 18.00 |
| DY-10 Amplifier, Two Stage | 35.00 |
| DY-12 Detector and Two Stage Amplifier | 45.00 |

AMPLIFYING TRANSFORMERS

| | |
|------------------------------------------|-------|
| A-3 Fully Mounted | 7.00 |
| A-2 Semi-mounted | 5.00 |
| A-2 Unmounted | 4.50 |
| ACMEPHONE—a complete receiving set | 80.00 |

THE ABOVE PRICES ARE SUBJECT TO CHANGE
WITHOUT NOTICE AND ARE F. O. B.
CAMBRIDGE, MASS.

Cash should accompany orders from firms and persons with whom we have not already opened an account.

Unless otherwise instructed we shall use our own judgment regarding methods of shipment, and in the absence of payment with orders, we reserve the right to ship C. O. D.

Special Transformers, Coils, Etc.

Net Prices Quoted on Application.

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Cambridge 39, Mass.

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Table of Contents

| | |
|--------------------------|--------------------|
| FOREWORD | Inside Front Cover |
| TERMS | " " " |
| SHIPPING | " " " |
| RECEIVING APPARATUS: | Page |
| ACMEPHONE | 1 |
| AMPLIFIERS and DETECTORS | 15 |
| AMPLIFYING TRANSFORMERS | 7 |
| PRICE LIST | Inside Back Cover |

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