



is only another example of insufficient power required to reproduce bass notes, although the frequency characteristic of an impedance or resistance coupled amplifier is essentially a straight line from 30 cycles upward. A very interesting laboratory experiment along these lines proved that where a pure 60 cycle note from a vacuum tube oscillator was fed directly into the grid of a UX 210 tube, the full output of this tube did not produce even an audible sound at this frequency. All low frequencies are not entirely lost, however, as their harmonics are reproduced, but with much less intensity, and the fundamental pitch is usually obtained by the beat note of a second and third harmonic.

In reviewing the subject of power handling capacity of an amplifier, there are many other more important phases to consider than the particular method of coupling (transformer, resistance, or impedance). It is a well-known fact that no better quality can be expected than is radiated from a broadcasting station or that can be faithfully reproduced by the loudspeaker—regardless of what coupling method or combination of methods may be used.

Bearing in mind that the frequency range of the better broadcasting stations is something like 80 cycles to 5000 cycles, and the better loudspeakers cut off at 80 cycles at the lower end and 7000 cycles at the upper end, also remembering that the better transformers in use today are capable of even amplification between 60 cycles and 6000 cycles, the selection of the amplifier tubes and proper operation for maximum efficiency of those tubes should receive more consideration than is generally given to amplifier tubes, particularly the last stage tube from which the loudspeaker is operated.

Data on New A. C. Tubes
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Maximum Undistorted Output	
at 180 volts	0.160 watts
" 135 " (-9 v. c)	0.070 "
" 90 "	0.020 "
Base—Standard Large "UX" or "CX"	
Mechanical Dimensions	
Maximum overall length	4-11/16 inches
diameter	1-13/16 "

NOTICE

With each copy of the June issue of the Experimenter a postcard was mailed to be properly filled out and returned if future issues of the Experimenter were desired. So many cards have been returned that it has been impossible to revise our list before releasing the July issue. We are consequently sending the July issue to our complete list.

The August issue, however, will be mailed only to those who have returned postcards.

New General Radio Parts for A. C. Operation

TYPE 440A LOW VOLTAGE TRANSFORMER



The alternating current tubes require a source of low voltage capable of delivering large current. The various types of tubes require several different voltages. The Type 440A transformer supplies voltages for all popular tubes and sufficient current for all ordinary receiver requirements. Filament supply is provided for filament, separate heater, power and rectifier tubes.

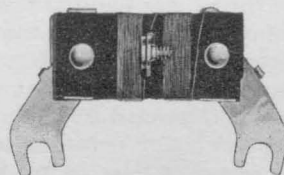
The transformer will carry a total load of 70 watts. The actual current which may be drawn from any winding depends on the current being drawn from the other windings. The watts being drawn from any winding when supplying filaments may be found by multiplying together the current and voltage for the winding. The sum of these products for all the windings is the total load on the transformer. In a particular case the loads might be:

Volts	Amperes	Watts
2	10	20
3.5	5	17.5
5	2.5	12.5
7.5	2	15

TOTAL WATTS65
Pri. 115 V (for lines 105-125 volts)
60 cycles.

The Type 440A low voltage transformer sells for \$10.

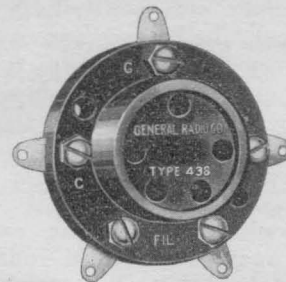
TYPE 439 CENTER TAP RESISTANCE



The new tubes for alternating current filament operation require a resistance with center tap across the filament. In the filament type of tube, the center tap provides the point of connection for the positive

grid and negative plate potential sources. The Type 439 Resistance is designed to fit directly across the tube socket. No other mounting is necessary. Price, \$.60.

TYPE 438 SOCKET



All of the new A. C. tubes, with the exception of the Type UY-227 or C-327 detector tubes, have the standard UX or CX four prong base and mount in the General Radio Type 349 Socket.

The new Type UY-227 or C-327 detector tube, however, has a separate heating element, and has consequently a five prong base which requires a socket especially designed with five spring contacts.

The Type 438 Socket is designed for the UY-227 or C-327 tube.

Firm contacts are made to the sides of the tube prongs with double gripping springs. The base of the socket is of moulded bakelite.

The Type 438 Socket sells for 50 cents.

TYPE 410 RHEOSTATS



The new A. C. tubes require low resistance rheostats capable of carrying appreciably more current than those used with D. C. tubes.

The resistance wire of the Type 410 Rheostat is of brass, tightly wound on a specially treated fibre strip. The form is of genuine moulded bakelite. The tapered knob, which is also of moulded bakelite, has an engraved pointer which indicates the position of the switch arm along the arc of the resistance unit.

The Type 410 Rheostat has the single hole mounting feature.

Resistance	Current	Price
.5 ohm	3.5 amperes	\$1.25
1.5 ohm	2.0 amperes	1.25

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