eter which is usually used in this case is inductive and difficulties are encountered unless

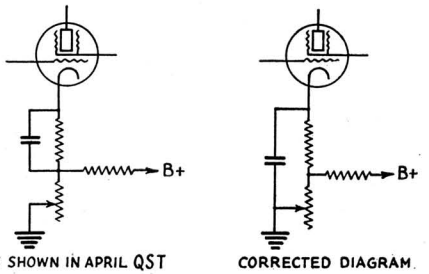

FIG. 4 — CORRECTED DIAGRAM FOR R.F. VOLUME CONTROL ON SW-3

the bypass condenser includes the potentiometer in addition to the actual fixed cathode resistor.

— Jack Wagenseller, W3GS-BF

Key Filter Constants

Using an inductance-capacity-resistance key thump filter of the type shown in Fig. 5, H. E. Vernon, W2EET-BTJ, has worked out the following formulas for determining the right size

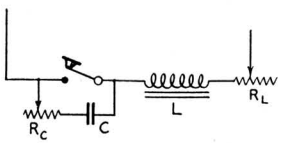

FIG. 5

of resistor to use once the inductance and capacity values have been decided upon. The formulas are:

$$R_L = 20 \times L \text{ in henrys}$$

$$R_c = \frac{50{,}000}{C \text{ in } \mu\text{fd.}}$$

These formulas are based on time constants of $\frac{1}{16}$th second, which should be ample delay for eliminating transients caused by shock excitation when the voltage is applied to the keyed tube.

Hard-Drawn vs. Soft Copper Wire

When we recently considered putting up a 160-meter fundamental antenna, we ordered some antenna wire and were shipped, by mistake, some No. 12 enameled magnet wire. The question arose as to the stretch and final strength of this No. 14 magnet wire. A very simple tensile testing apparatus was rigged up and several samples tested, with data being recorded as to the increase in length up to the breaking point. The results of tests on a number of samples showed the wire to have an ultimate strength of approximately 150 lbs., and the amazing property of stretching, before breaking, to the extent of $1\frac{1}{8}$ inches in an original measured length of $6\frac{1}{2}$ inches, the distance between markers on the sample being $7\frac{5}{8}$ inches at the time the wire broke. In the case of an 80-meter fundamental antenna, this would give a total stretch of 280 inches. Why then measure to the fraction of an inch or test for the proper length? The first heavy wind or load of ice will give the antenna considerable additional length.

With these thoughts in mind an investigation was made of the genuine "hard drawn" No. 12 copper wire. In the same test setup, the hard drawn wire showed a breaking strength of approximately 300 lbs. This wire showed a stretch of approximately $\frac{1}{64}$ of an inch in the 6.5 inches between markers, when stretched to the breaking point of 300 lbs. If the hard-drawn wire is stretched up to a 150-lb. load, sufficient to break the magnet wire, the total stretch would be only approximately one inch, compared with 280 inches for the softer wire.

— John H. McAulay, W7BUX

Duplex Portables

(Continued from page 10)

tween local stations. Another suggestion might be to use it at local bazaars, fairs, clubs and gatherings where it would be inconvenient or impossible to use a larger portable — for instance if space is limited or no a.c. power is available for the larger types of portable transmitters. Of course the transceiver would simply be used as pickup or relay station, passing on messages to the base station.

These portables have been in use for over six months and are still going strong.

Strays

From the RCA Victor Company of Camden, N. J., we learn that they are now supplying type UV-203-A with graphite anode at no increase in price. These tubes can be obtained in matched pairs for Class B audio use, if desired.

The approved ratings, which are conservative enough to insure long life and satisfactory operation, are as follows:

Audio Frequency Power Amplifier—Class B

Maximum operating d.c plate voltage..		1250 volts
Maximum d-c plate current	Averaged over any audio frequency cycle....	0.175 amp.
Maximum plate dissipation		100 watts

Typical operation: E_b=1000, E_c= −35, E_f=10 V. d-c

Zero signal plate current.....	0.005 amps.
Maximum signal plate current	160 milliamps.
Peak output.....	100 watts

The above ratings relate to one tube only.