

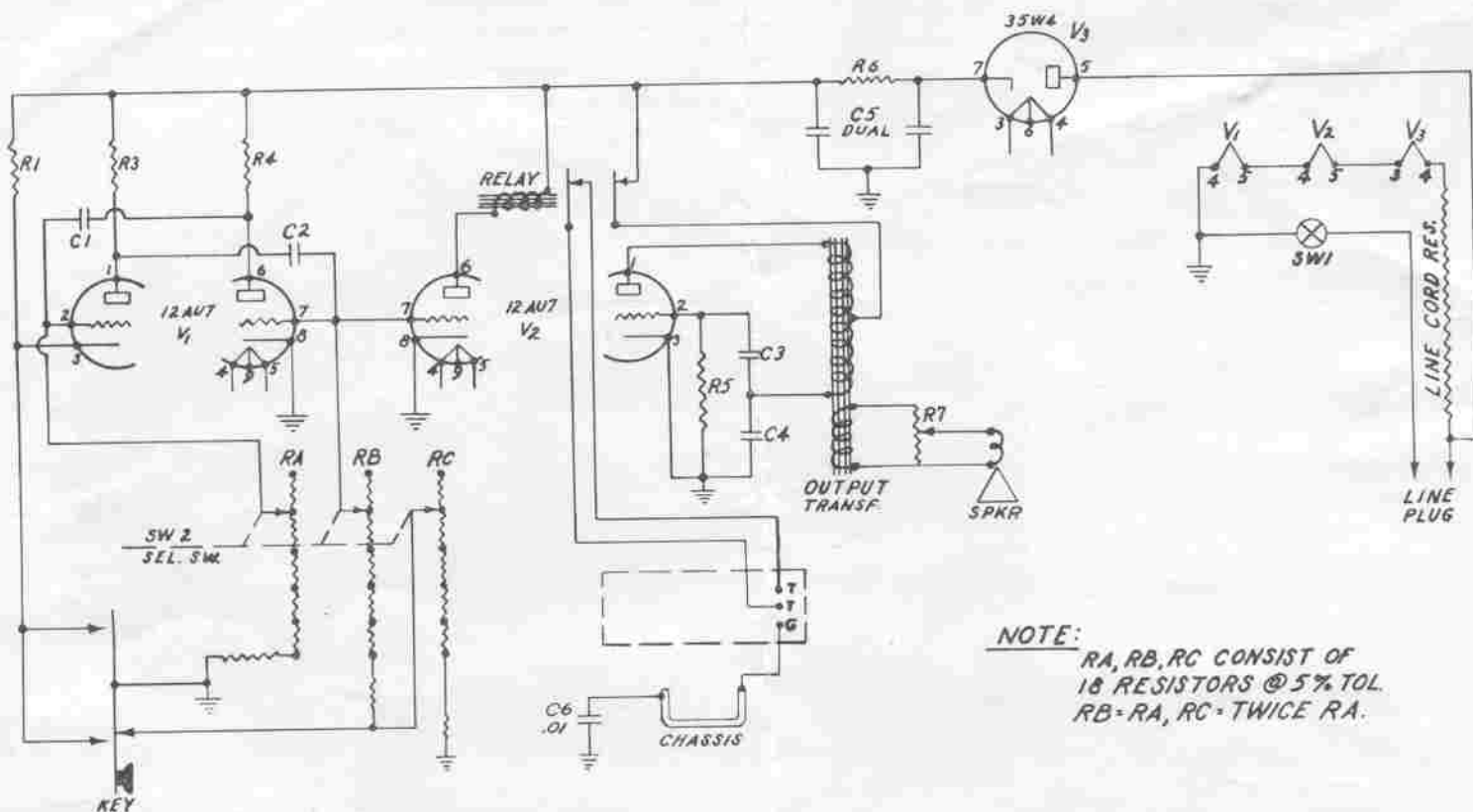
ELECTRONIC

Monitor And Sending Key

SEND CODE WITH PERFECT RHYTHM - TIMING - CONTROL

MON-KEY

SCHEMATIC DIAGRAM



NOTE:

RA, RB, RC CONSIST OF
18 RESISTORS @ 5% TOL.
RB = RA, RC = TWICE RA.

INSTRUCTIONS FOR OPERATION AND ADJUSTMENT

(PLEASE READ CAREFULLY BEFORE PLUGGING
INTO 110 VOLT A.C. OR D.C.)

The MON-KEY, electronic key and monitor, is an assembly which includes a KEY mechanism of unique design which controls an electronic MULTIVIBRATOR. The multivibrator, when triggered by the key, emits pulses of proper length and spacing to form accurately timed dots or dashes. These pulses control a keying RELAY TUBE which actuates a small sensitive KEYING RELAY. The relay has two sets of contacts. One set is brought out to the terminals on the bottom of the key marked "T" "T". These are ungrounded. A ground terminal marked "G" is connected to the aluminum cast cover and chassis of the unit. These components of the unit serve, when connected to a non-inductive keying circuit of your transmitter, to replace any standard hand operated key. The relay contacts will safely handle 2 amperes in a non-inductive circuit. They should not be expected to handle primary keying currents.

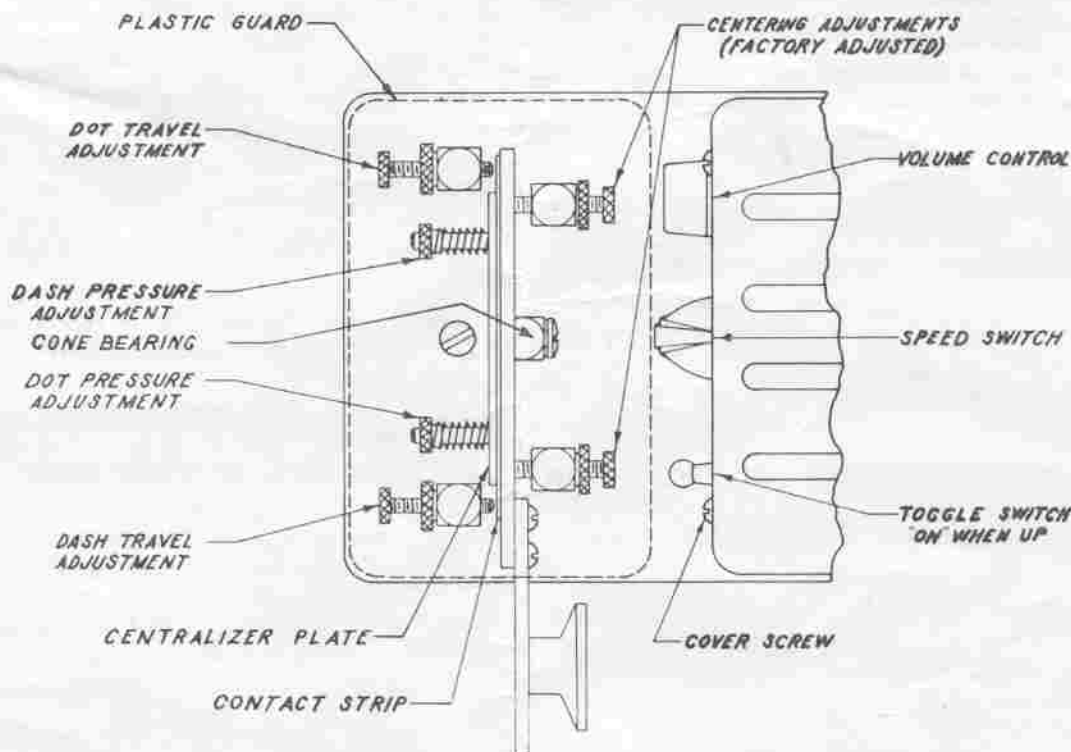
The other set of contacts on the keying relay is internally connected to control the plate current of a triode vacuum tube audio oscillator. This oscillator follows the key and emits a tone through a 2" dynamic speaker, so that the actual keying pulses to your transmitter are heard as an audio tone of pleasing pitch.

Controls on the front panel consist of (a) An "On" and "Off" switch which controls the filaments of the three tubes in the unit - (b) A speed change switch which adjusts the speed of dots or dashes while maintaining proper ratio of length to speed. The switch has six positions and nominal speeds of from 8 to 45 words per minute have been established at the factory - (c) A tone control for the audio monitor which when turned full scale serves as a shut-off switch for the audible tone.

OPERATION

We would suggest that because the key will be an entirely new sensation to you to begin with, that you just plug it in the light socket without connecting it to a transmitter, wait 15 seconds or so for it to warm up and then, without attempting to adjust the key, learn its reactions to its controls. Hold the key paddle to the left and a series of "dashes" will be heard coming from the relay or speaker (depending on the location of the tone control knob). Hold the key paddle to the right and "dots" will come out. Continue to hold the key in one position and turn the speed switch. The percentage of speed increase or decrease will be noticed. Always, the dashes will be 3 times as long as the dots and the spaces between successive dots or dashes will be equal to dot length! Now all you have

KEY TOP VIEW



to do is learn to hold the key on either side until the required dots or dashes are made by the key to form a letter. You will find yourself increasing the speed within a few minutes and you'll probably find it hardest to learn to let the key make its own series of dashes. (It has been observed that most fellows have been making dashes too long and a CQ comes out of the key with more than a couple of dashes on the end, but they soon learn to release the dash contact when a perfect letter has been made - there's no "Swing" possible with the MON-KEY).

Practice the alphabet a few times, notice the letters you've been doing wrong and you'll soon be following the key perfectly.

KEY ADJUSTMENT

WARNING

The plastic cover on your MON-KEY serves several purposes. It allows you to see the key yet keeps off dust. It also protects you from accidental shock from 110 volts. Like any AC-DC device, certain elements of the circuit are necessarily common with one side of the power line circuit. The metal cover and chassis of the MON-KEY are isolated from the line circuit and by-passed so that a ground connection on the

ground terminal provides good shielding, but the KEY arm and contacts are in the common return lead. If the line plug is in the correct position, the key parts will be at ground potential; if the line plug is reversed, the key parts will be 100 volts above ground. THEREFORE, remove the cord plug from the wall socket before removing the plastic cover to adjust the key contacts. The key has been properly centered at the factory. It should not be necessary to adjust the two contacts closest to the control panel. Spacing and tension adjustments are all on the "outside" of the key and are as follows: (See above diagram)

The front screw, nearest the knob, adjusts the movement of the key to the left to form DASHES. The rear screw adjusts the movement of the key to the right to make DOTS.

The spring adjustment screws are used to establish the pressure required to move the key from center to either right or left.

Should the rear screws become out of adjustment, proceed as follows to center the key.

Lock one adjustment. Adjust the other until the "centralizer plate" is just touched and tighten the lock nut. Then adjust space controls to suit. If the "centralizer plate" is pushed out away from the center arm too far, the key will not center properly. If the "centralizer plate" isn't at rest against both screws, the key will have a "Loose" feeling. When properly adjusted, the key arm uniformly clears the slot in the plastic cover.

TO LOOK INSIDE

If you must - then remove only THREE screws, two on the front, near the switch and tone knob, one at the extreme end of the underside of the base, farthest from the key. The cover then lifts straight up.

REMOVE TUBE SPACERS

To protect the tubes in your MON-KEY during shipment we now place a cardboard spacer inside the cover. Before you use the MON-KEY for long periods of time, remove cover and take out this cardboard spacer.

ABOUT MAINTENANCE

After months of operation the only trouble experienced was a loose contact screw on the key. As the diagram shows, the MON-KEY uses 3 contacts on the key. Normally, the right hand front contact engages the brass strip on the key arm and keeps a speed control resistor short circuited. When the key is moved to make a dash, this contact opens and changes the value of resistance in the timing circuit. If this contact becomes loose or dirty, erratic operation will result. If it is tightened too tight, only dots will be heard in any key position. So, don't attempt any repairs on the internal circuits until you are positive that the key is clean and properly adjusted.

1. Your key has an improved cone bearing. The cone adjustment can be made by means of the two brass nuts on the bottom center of the key arm. If play develops, carefully tighten these nuts.
2. If, after sufficient practice, you find that with your individual "touch" a contact bounce seems to occur, try bending the flat brass contact strip outward a few thousandths of an inch with a pocket knife. Be sure, however, that contacts are clean before assuming that "bounce" is present.

We have had some inquiries regarding the reduction of the speed range of the MON-KEY. Speed reduction can most readily be accomplished by adding a capacity of .005 mfd. in parallel with capacitors C1 and C2. These capacitors are mounted directly under the two 12AU7 tubes. They are 5% tolerance condensers. If equal mica capacitors are added, uniform reduction in all speeds will occur. Unequal capacitors will result in bad spacing or pulse duration.

FACTORY SERVICE

We are equipped to render service on your MON-KEY at the factory. We will advise you of the service costs before proceeding to repair it if it is returned to us PRE-PAID.

GUARANTEE

The MON-KEY is guaranteed against defective workmanship and materials for a period of ninety (90) days. If believed to be defective, it should be returned to us within that time for inspection with the understanding that all shipping charges will be paid by you.

HURLETRON



**ELECTRONIC INSPECTION
AND
CONTROL EQUIPMENT**

ELECTRIC EYE EQUIPMENT CO.

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