

Fig. 1: Tiny WWV receiver with the cover removed shows layout

Knowledge of the exact time is often required in the field while conducting tests. Here is a compact, sensitive receiver that will meet the need quite well.

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Washington 25, D. C.

For Accurate Timing Build a

WWV Time Signal Receiver

THIS radio receiver is designed to receive the 5 MC transmission of WWV for time signals. The photographs in Figures 1 and 3 show the comparative size and parts layout of the receiver. The

receiver is housed in a plexiglass case 1 x 3 1/4 x 4 inches and can easily be carried in the coat pocket. Figure 2 is the circuit schematic diagram which uses nine transistors in a superheterodyne circuit.

The first six stages use the inexpensive 2N588 high frequency transistor.

The front end uses a loopstick antenna and a stage of radio frequency (Continued on page 216)

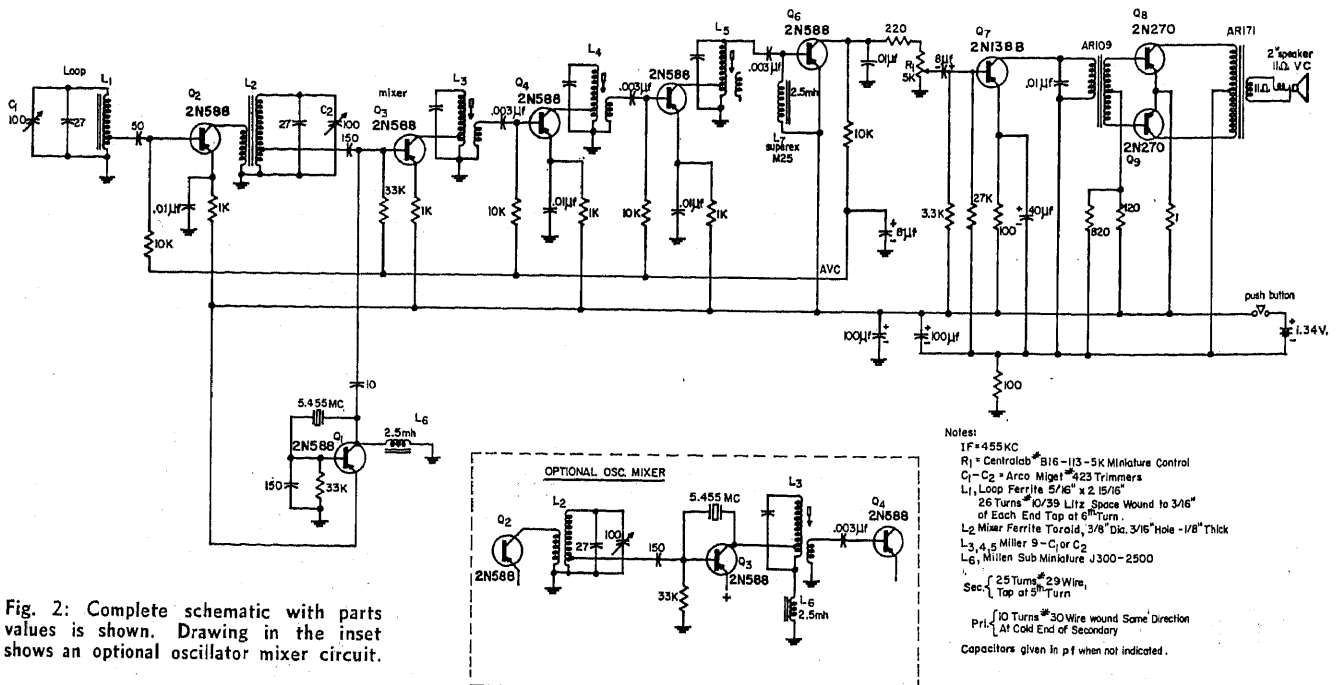
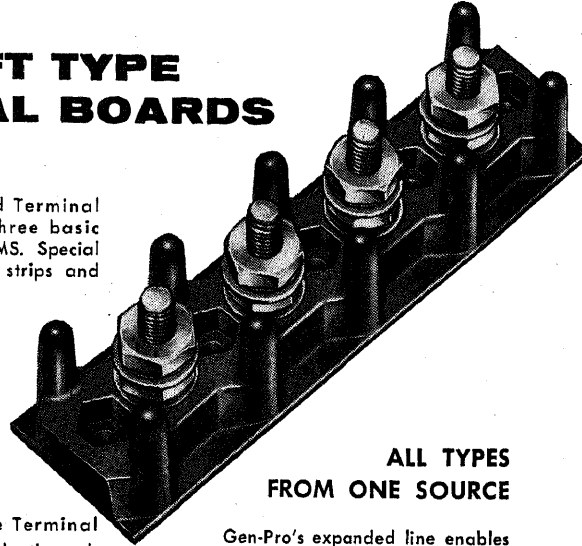


Fig. 2: Complete schematic with parts values is shown. Drawing in the inset shows an optional oscillator mixer circuit.

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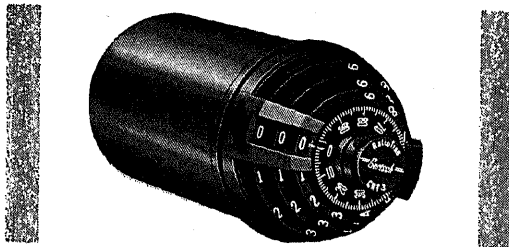
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SALT SPRAY.....	MIL-E-5272A
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FUNGUS.....	MIL-E-5272
HUMIDITY.....	MIL-STD-202A
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OPERATING.....	+ 52° C
NON-OPERATING.....	+ 71° C
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OPERATING.....	- 18° C
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WWV Receiver (Concluded)

quency amplification Q_2 , the mixer oscillator uses separate transistors Q_3 , Q_1 , or can be combined in a single transistor as shown in the circuit inset; however, its alignment is somewhat more difficult. The crystal is tuned to the high side of the 5MC signal to obtain the 455 KC i-f signal. Two stages of i-f are used, Q_4 and Q_5 . The use of a 2N588 detector, Q_6 , gives more

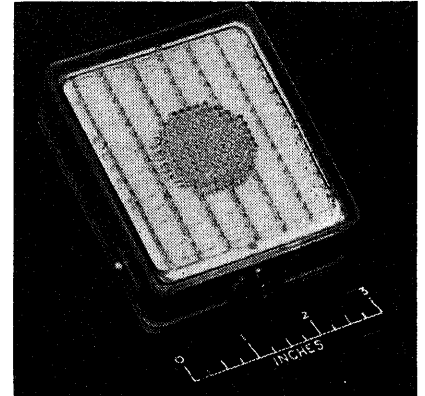


Fig. 3: WWV receiver is compact and can be carried in the pocket.

amplification than if a diode is used. The AGC voltage for all preceding steps is obtained here.

A driver and push pull class B amplifier is used to operate a 2 inch speaker at room volume. The power is supplied by a single 1.34 v mercury cell which simplifies the battery replacement problem. The current drain is about 18 ma at full signal and 6 ma with no signal. A push button switch is provided to conserve the life of the cell.

Test Machine For Teaching Electronics

The Air Force has awarded a contract to Western Design, a division of U. S. Industries, Inc., 250 Park Ave., N. Y., N. Y., for 18 automatic teaching machines. They will be tested for use in training in basic electronics.

Here is how the machine works. Similar to a microfilm machine in appearance, it presents course material to the student in a series of small, logical steps. After each step, the student is required to answer a multiple choice question based on the material he has read before he can move to the next step. Errors are explained and the student retested.