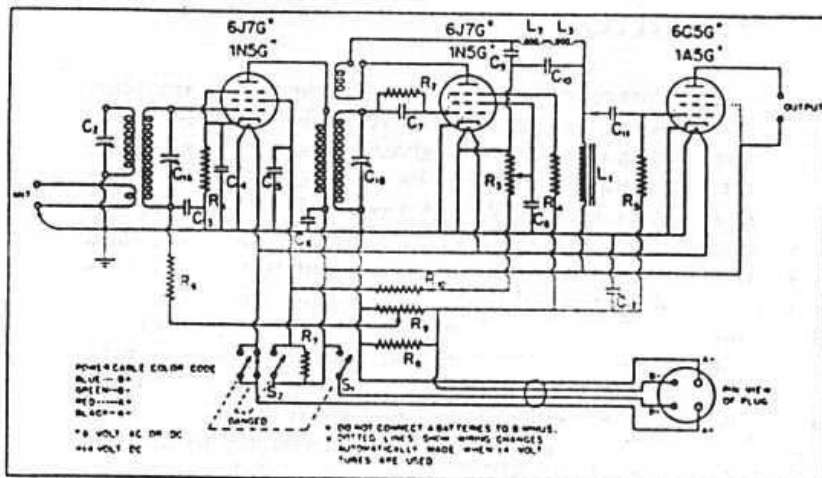


A type 6X5 tube *must* be used as a rectifier in the 6S6 Pack, although the rectifier socket is wired so that an OZ4 tube may be substituted without circuit changes.

Two types of commercial vibrator packs are generally available; the self-rectifier and the tube-rectifier. Of these, the latter is recommended, but only when a heater type of tube such as the 6X5 is employed. Packs having a cold-cathode gas rectifier tube such as an OZ4 cannot be used since the "B" current drain of an SW-3 is below the minimum value at which the tube functions normally.



DWG. NO. 1 — CIRCUIT DIAGRAM OF THE UNIVERSAL SW-3

- | | |
|--|--|
| C ₁ — dual variable air capacitor, 90 mmf. per section. | C ₁₂ — 25-mfd., 50-volt elec. capacitor. |
| C ₂ — Variable air capacitor, 50 mmf. | L ₁ — 700-henry choke — part of coupler. |
| C ₃ — .01-mfd., 400-volt paper capacitor. | L ₂ — 2.5-m.h. R.F. choke. |
| C ₄ — .1-mfd., 400-volt paper capacitor. | L ₃ — 5.5-m.h. R.F. choke. |
| C ₅ — .1-mfd., 400-volt paper capacitor. | R ₁ — 500-ohm, 1/2-watt resistor. |
| C ₆ — .1-mfd., 400-volt paper capacitor. | R ₂ — 5-megohm, 1/2-watt resistor. |
| C ₇ — .0001-mfd., mica capacitor. | R ₃ — 50,000-ohm potentiometer. |
| C ₈ — .1-mfd., 200-volt paper capacitor. | R ₄ — 5,000-ohm, 1/2-watt resistor. |
| C ₉ — .00025-mfd. mica capacitor. | R ₅ — 25-megohm, 1/2-watt resistor — part of coupler. |
| C ₁₀ — .00025-mfd. mica capacitor. | R ₆ — 50,000-ohm, 1/2-watt resistor. |
| C ₁₁ — .01-mfd. mica capacitor — part of coupler. | R ₇ — 70,000-ohm, 1/2-watt resistor. |
| | R ₈ — 2,000-ohm, 1/2-watt resistor. |
| | R ₉ — 3,000-ohm potentiometer. |
| | R ₁₀ — 20,000-ohm, 1/2-watt resistor. |
| | S ₁ — DPDT toggle switch. |
| | S ₂ — DPDT toggle switch. |

In no case should a common connection be made between B+ and heater circuits. Such a connection would remove the bias voltage from the audio tube. For this reason, the heater center-tap resistor of all new Type 5886-AB Power Supplies is omitted. This omission will not affect the operation of any other National equipment for which

the 5886-AB is recommended. The heater center-tap resistor must be removed from an older 5886-AB Supply when used in conjunction with a Universal Model SW-3.

R.F. Transformer Coils

Thirteen sets of plug-in coils are used to tune from 9 to 3000 meters. Five additional sets are used to bandspread the 10-, 20-, 40-, 80- and 160-meter amateur bands. See Dwgs. Nos. 2 and 3 and the coil listing on page 12.

When operation on any general coverage range is desired, the proper set of coils should be plugged into the receiver coil sockets. R.F. amplifier and detector coils of Sets No. 30 to No. 35 and No. 39 to No. 41, inclusive, are identical and may be interchanged in the coil sockets of the receiver. Coils of Sets No. 36, No. 37, No. 38 and No. 42 are not interchangeable. The coil forms of these sets are marked on the bottom outside near the prongs — "D," detector coils; "R," R.F. amplifier coils.

With a band-spread range in use, the receiver will not function properly if the R.F. amplifier and detector coils are interchanged in the receiver coil sockets. The detector coil can be readily identified by the variable trimmer capacitor mounted at the top of the coil form. When the band-spread coils are used, the grid leads attached to the receiver should be removed from the tube grid caps and clipped in place on the insulated posts mounted

on the sides of the metal shields next to the main tuning capacitor. The grid leads of the coils should be attached to the proper tube grid caps.

In all models of SW-3 Receivers, the R.F. amplifier coil socket is located at the left of the main tuning capacitor, as the receiver is viewed from the front; the detector coil socket is at the right side.

Operation

Controls

THE main tuning dial of the SW-3 Receiver is mounted on the front of the cabinet at the center. It is of the variable ratio type. A control lever is provided to adjust the control knob-to-

capacitor drive coupling ratio to any desired point between the limits of 6 to 1 and 18 to 1. Scale graduations are from 0 to 150 divisions over the 270 degrees of rotation through which the dial turns the main capacitor. Calibration curves (Dwgs. Nos. 2 and 3) show the approximate fre-