across the chosen inductors. S6L and S6N short the unused inductors.

The output of the selected plate tank is coupled to the output level control, L18, which matches the keyer output to the impedance of the transmission line. The keyer output terminal is a coaxial jack from which the frequency-shifted keyer signal may be connected to the transmitter.

A panel meter (fig. 10-6) may be connected in the grid or plate circuit of the power amplifier through the use of the metering switch, S5 (fig. 10-8). Thus, visual indication of these currents in the final amplifier circuit can be obtained for tuning purposes.

A capacitor voltage divider comprising C59 and C60 is connected between the plate and ground of V12 (fig. 10-9). The signal voltage at the junction of the two capacitors is fed to frequency meter jack for application to frequency measuring equipment.

Crystal Oven

The crystal oven is provided to assure minimum change in the value of the frequency determining components of the crystal and 200-kc oscillators. The oven is composed of four plaque resistors, HR-1, HR-2, HR-3, and HR-4, which operate from 115 or 230 volts obtained from the keyer power supply. The four heaters are insulated from the outer walls by strips of asbestos. The oven contains the crystal holders, the 200-kc oscillator tank circuit, and the cathode-to-grid capacitor, C41, of the reactance modulator.

The temperature of the oven is controlled by a thermoswitch, S8. The S8 contacts are closed, keeping the lamp lighted and the heater operating until the temperature of the oven rises to 70° C. The contacts open and close intermittently to maintain the temperature at this level. A -50- to +100-degree centigrade thermometer and an oven indicator lamp (not shown) are utilized as oven temperature indicators. The arrangement of oven heaters provides a constant temperature but not an extremely rapid warmup.

Power Supply

The power supply of the KY-75/SRT frequency-shift keyer (fig. 10-10) is a conventional, full-wave rectifier employing a double-pi filter. A-c power input is applied by the main power switch, S12. The power supply is wired for 115-volt operation, but, with minor changes, it can be adapted for a 230-volt, a-c input.

In 115-volt operation, the two windings of the T5 primary, and the oven heater resistors (fig. 10-9) are connected in parallel across the a-c input. During 230-volt operation, the two windings and the heater resistors are connected in series.

A relay, K1, is provided in the B- circuit of the power transformer. When the plate switch, S13, is closed, the a-c power circuit is completed through the plate indicator lamp, T1, and through the K1 solenoid. K1 becomes energized, closing its contacts, and thereby completing the B-circuit.

Two voltage regulator tubes, VR1 and VR2, are employed to increase the stability of the voltage applied to the keyer circuits. The circuit supplying the power to the K1 solenoid is completed through pins 3 and 7 of the regulator tubes. If either of the tubes is removed from the power supply, plate and screen power cannot be applied to the keyer stages.

TRANSMITTER-TELETYPEWRITER CONTROL UNIT C-1004A/SG

The Transmitter-Teletypewriter Control Unit C-1004A/SG (fig. 10-11) contains the components and circuitry necessary for controlling a teletypewriter radio circuit from a remote position. The unit provides the transmitter power-on switch, the power-on indicator lamp, carrier-on indicator lamp, and a three-position rotary selector switch.

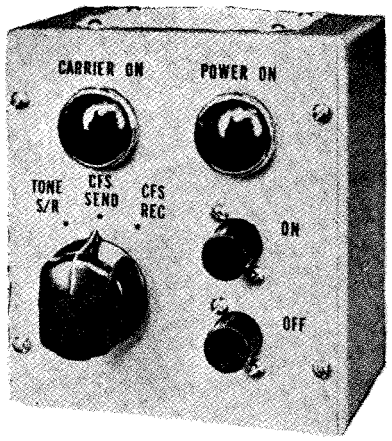

Figure 10-11. —Front panel of the transmitter-teletypewriter control unit, C-1004/SG.

The circuit diagram of the control unit is shown in figure 10-12. The power switch, S1, permits power to be supplied to the remote transmitter through terminals 1, 2, and 3 of TB2. The power indicator lamp is lighted when the transmitter is on. S1 is a momentary contact switch.

S2 completes the circuit from a send-receive teletypewriter to either a frequency-shift keyer (CFS SEND), a frequency-shift converter or comparator (CFS REC), or a tone terminal on a send-receive basis (TONE S/R). The positions of the switch are shown in this order in figure 10-12, A, B, and C. The input d-c telegraph signals are applied at the teletypewriter signal line input terminals, A and B, of TB1.

When S2 is placed in the CFS SEND position (fig. 10-12, A) the teletype loop passes through terminal B of TB1, and through S2B to the frequency-shift keyer via terminal F. From the keyer, the loop continues through terminal E of TB1, through S2B and terminal A of TB1 to complete the loop circuit. Note that the frequency-shift converter (not in use) is shorted through S2C, and the tone terminal equipment (also not in use) is shorted through S2A. Thus, complete isolation of the unused terminals is ascertained.

Likewise, with S2 placed in the CFS SEND position, the transmitter carrier is turned on via S2C and terminals 5 and 6 of TB2. The circuit for the carrier-on indicator lamp is continued from one side of the line input voltage through S2B and terminal 4 of TB2 to the transmitter. The circuit is completed through the transmitter and terminal 2 of TB2 to the other side of the a-c line.

Figure 10-12, B and C, show the position of the S2 contacts for the CFS REC and TONE S/R positions, respectively.

When the switch is set to the CFS REC position (fig. 10-12, B) the carrier-on indicator lamp and the carrier are off. The teletypewriter is connected to the frequency-shift converter circuit by S2B, and the tone and frequency-shift keyer terminals are shorted by S2A and S2C, respectively.

In the TONE S/R position of S2 (fig. 10-12, C), the carrier-on indicator lamp and the transmitter remain deenergized. The teletypwriter is connected to the tone terminal loop through S2B. The frequency-shift converter and frequency-shift keyer are shorted by S2C.

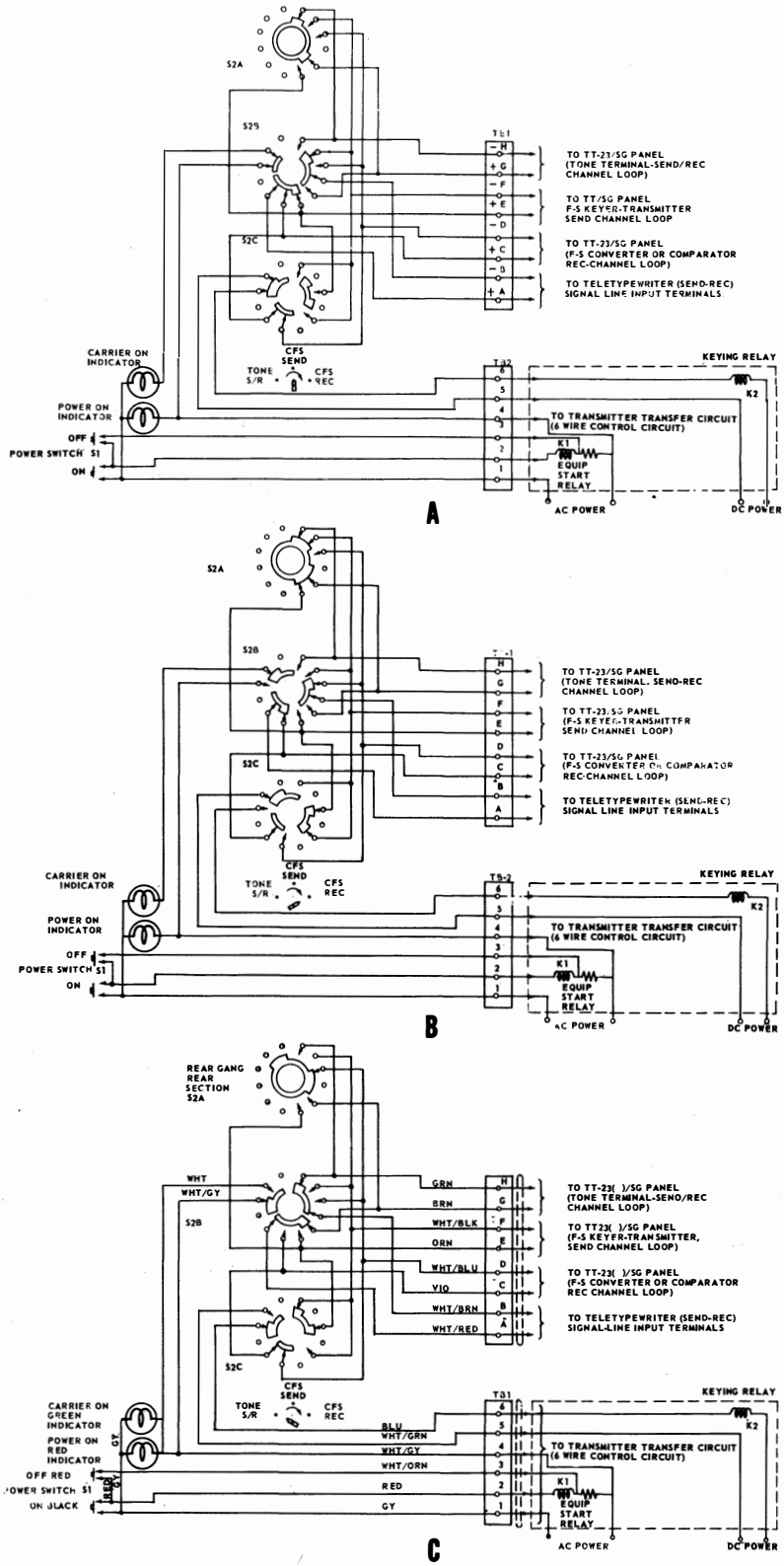

Figure 10-12. —Control unit circuit diagram.