



Figure 3

Figure 3 shows how the supply voltages are actually switched and applied to the photocell. The eight ranges are connected to both sides of the wafer of the Selector switch in such a way that ranges V4 and V5 overlap. This arrangement provides five low sensitivity ranges (V1 through V5), and five high sensitivity ranges (V4 through V8).

The five low sensitivity range voltages are applied to the photocell through the Shadow position of the Sensitivity switch; the five high sensitivity range voltages are applied to the photocell through the Hi-Lite position of the Sensitivity switch. By pushing the Sensitivity switch, you can multiply the sensitivity of the circuit by 8; this is equivalent to three F-stops, or to turning the Selector switch three positions clockwise. Releasing the Sensitivity switch is equivalent to dividing the sensitivity by 8.

The circuit of the Fotoval Computer consists of a power supply, seven controls that are used as voltage dividers, a meter circuit, and a probe. The probe contains the photocell and two switches. The complete circuit is shown on the Schematic Diagram.

DC operating voltage is supplied by a full-wave voltage-doubler circuit that uses the power transformer, silicon diodes D1 and D2, and capacitors C1 and C2. The DC voltage is regulated by voltage regulator tubes V1 and V2, and is applied across controls R1 through R7.

Controls R1 through R7 are adjusted to provide supply voltages V1 through V7; the full B+ voltage is used as supply voltage V8. The supply voltages are applied individually to the photocell through the Selector switch in the probe, and through the Sensitivity switch in the probe. The Shutter switch in the probe disconnects the photocell when it is not being used.

Meter-protection diode D3 prevents the meter from being overloaded. The amount of voltage required to cause diode D3 to conduct is determined by resistor R9. Voltage beyond this point would cause excess current which could bend the meter pointer or burn out the meter movement. When diode D3 conducts, excess current is passed safely around the meter movement by the diode.