

# LC Circuit

**Resonant Charging Choke (C)** in series with **Excitor-array (E1/E2)** forms an **inductor-capacitor circuit (LC)** since the **Excitor-Array (ER)** acts or performs as an capacitor during pulsing operations, as illustrated in Figure (1-2) as to Figure (1-1).

Figure (1-2)

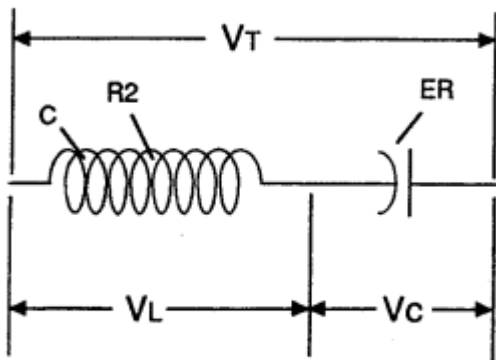


FIGURE 1-2: LC CIRCUIT

Figure (1-1)

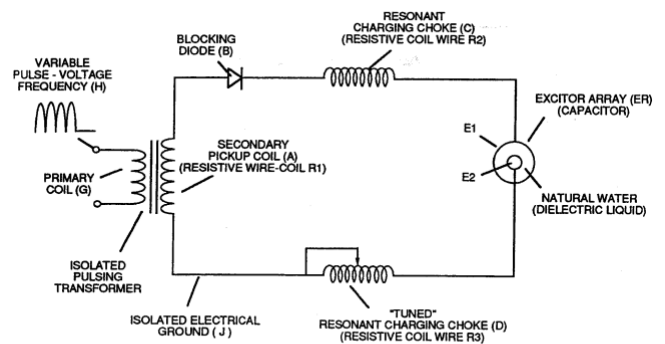


FIGURE 1-1: VOLTAGE INTENSIFIER CIRCUIT (AA)

The **Dielectric Properties** (*insulator to the flow of amps*) of natural water (*dielectric constant being 78.54 @ 25c*) between the **electrical plates (E1/E2)** forms the **capacitor (ER)**.

Water now becomes part of the **Voltage Intensifier Circuit** in the form of "**resistance**" between electrical ground and pulse-frequency positive-potential

... helping to prevent electron flow within the **pulsing circuit (AA)** of Figure 1-1.

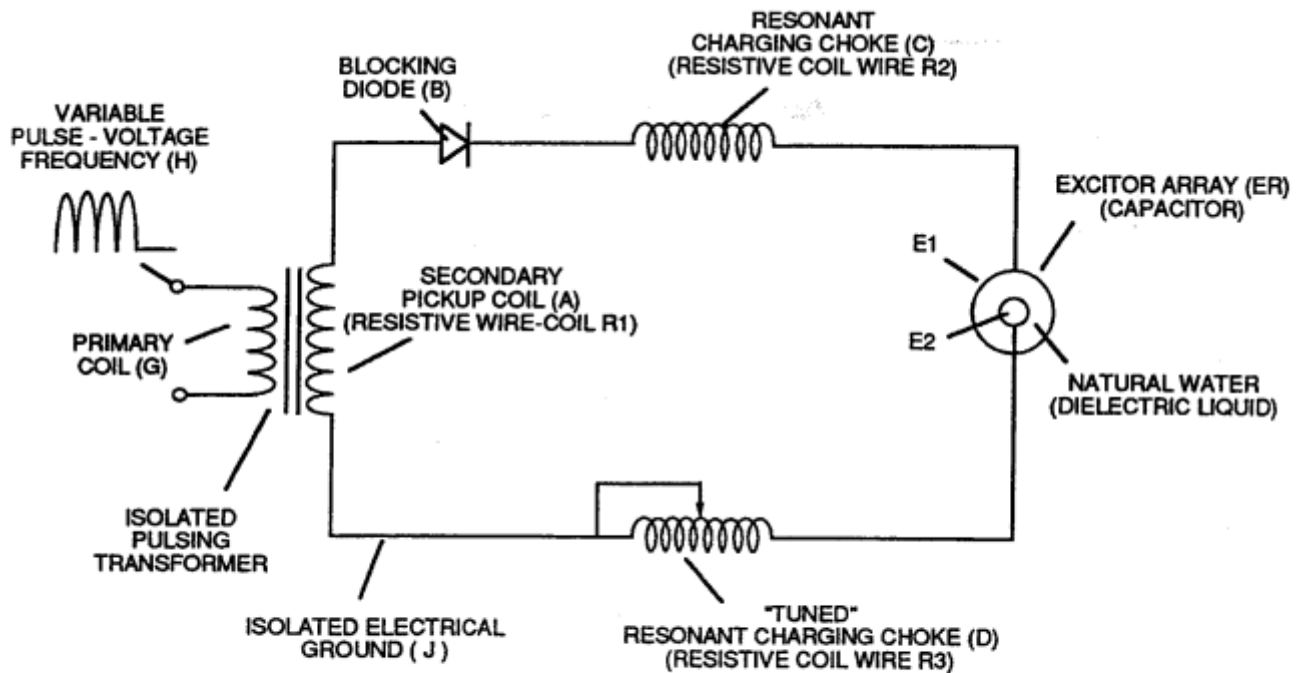


FIGURE 1-1: VOLTAGE INTENSIFIER CIRCUIT (AA)

The **Inductor** (C) takes on or becomes an **Modulator Inductor** which steps up an oscillation of an given charging frequency with the effective capacitance of an pulse-forming network in order to charge the **voltage zones** (E1/E2) to an higher potential beyond applied voltage input.

The **Inductance** (C) and **Capacitance** (ER) properties of the LC circuit is therefore "**tuned**" to resonance at a certain frequency.

The Resonant Frequency can be raised or lowered by changing the inductance and/or the capacitance values.

The established **resonant frequency** is, of course, independent of voltage amplitude, as illustrated in Figure (1-3) as to Figure (1-4).

Figure (1-3)

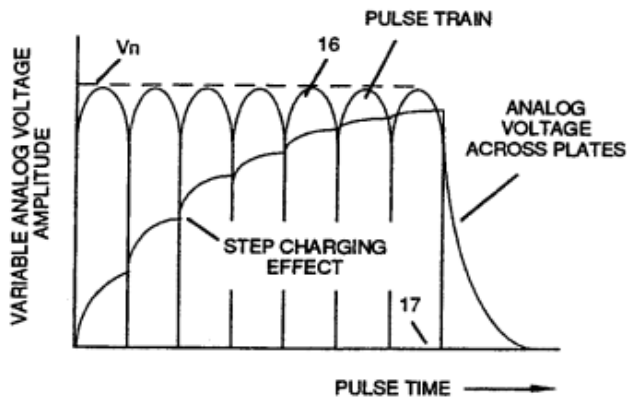


FIGURE 1-3: APPLIED VOLTAGE TO PLATES

Figure (1-4)

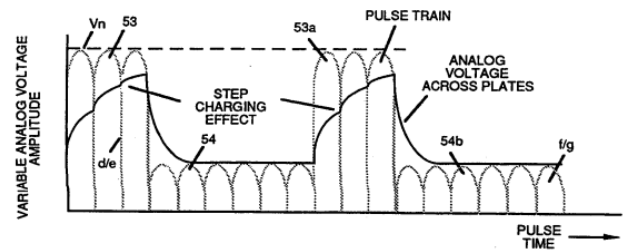


FIGURE 1-4: APPLIED VOLTAGE TO RESONANT CAVITY

The value of the **Inductor** (C), the value of the **capacitor** (ER), and the pulse-frequency of the voltage being applied across the LC circuit determines the impedance of the LC circuit.

The impedance of an inductor and a capacitor in series, Z series is given by (Eq 1)

$$Z_{\text{series}} = (X_c - X_l) \quad (\text{Eq 1})$$

Where:

(Eq 2)

$$X_c = \frac{1}{2\pi f c}$$

(Eq 3)

$$X_l = 2\pi f l$$

The Resonant Frequency (F) of an LC circuit in series is given by (Eq 4)

$$F = \frac{1}{2\pi \sqrt{LC}}$$

(Eq 4)

Ohm's Law for LC circuit in series is given by:

(Eq 5)

$$V_t = IZ$$

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