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)

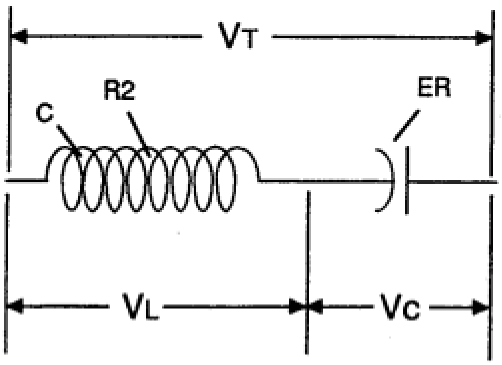

FIGURE 1-2: LC CIRCUIT

Figure (1-1)

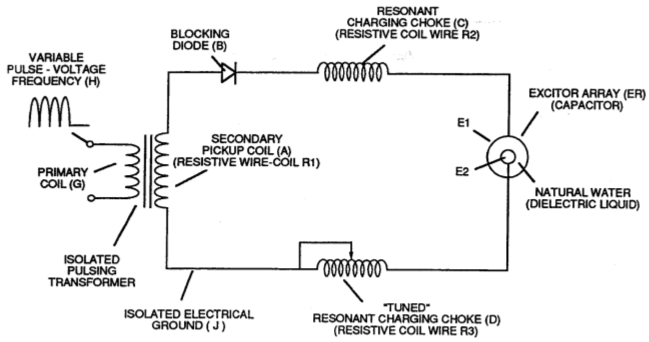

FIGURE 1-1: VOLTAGE INTENSIFIER CIRCUIT (AA)

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.

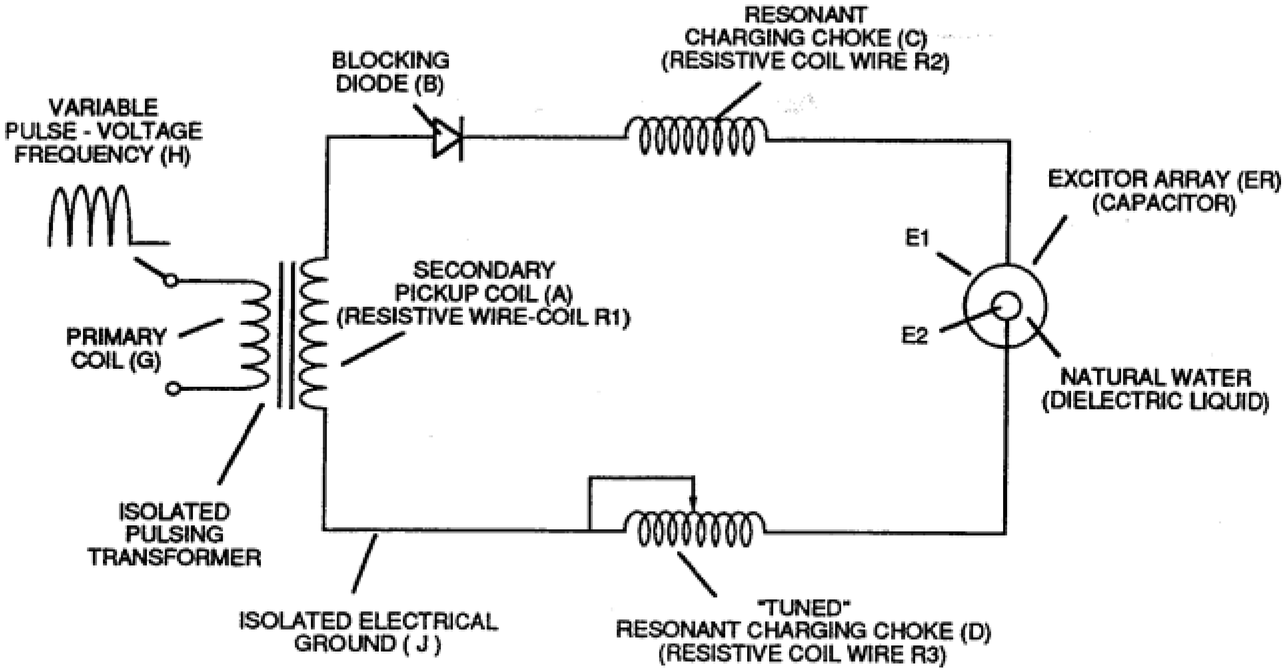

FIGURE 1-1: VOLTAGE INTENSIFIER CIRCUIT (AA)

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)

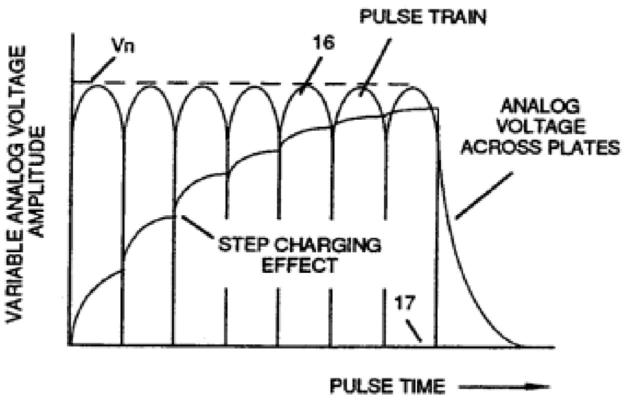

FIGURE 1-3: APPLIED VOLTAGE TO PLATES

Figure (1-4)

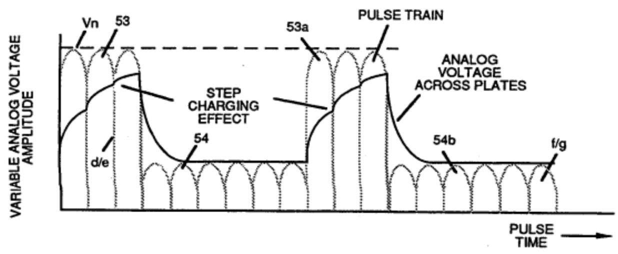

FIGURE 1-4: APPLIED VOLTAGE TO RESONANT CAVITY

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)

(Eq 1)

$$\text{Z series} = (Xc - Xl)$$

Where:

(Eq 2)

$$Xc = \frac{1}{2\pi fc}$$

(Eq 3)

$$Xl = 2\pi fl$$

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

(Eq 4)

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

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

$$Vt = I Z \quad \text{(Eq 5)}$$

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