Of these three distinct functions, only F_A is explicitly dependent upon the number n of charges mobilized capacitatively.

Since we had already determined the magnetic field frequency as

$$F_B = (4\pi^2 L_{2^\circ})^{-1}/W_{v2^\circ} = (4\pi^2 L_{2^\circ} W_{v2^\circ})^{-1} = (L_{2^\circ\,act} W_{v2^\circ})^{-1}$$

we can now write a series of physical aetherometric equivalences for this relation as a function of the coil inductance:

$$F_B = (4\pi^2 L_{2^\circ} W_{v2^\circ})^{-1} = (L_{2^\circ\,act} W_{v2^\circ})^{-1} = \lambda_{y1}/4\pi^2 L_{2^\circ}\ \mathbf{p}_e =$$
$$= C_{2^\circ}/ 4\pi^2 L_{2^\circ}\ n\ \mathbf{p}_e = \mathbf{\mathcal{E}}\,[\lambda_{y1}/(2\pi W_{v2^\circ})^2 L_{2^\circ}] =$$
$$= n F_A\,[\lambda_{y1}/(2\pi W_{v2^\circ})^2 L_{2^\circ}] = \mathbf{\mathcal{E}}/a_w\,(4\pi^2 L_{2^\circ})$$

As we shall demonstrate in the next communication [3], this frequency function is shared by the magnetic wave functions of both massbound and massfree charges, and corresponds directly to what is commonly known as the cyclotron frequency of the magnetic motion of a charge.

Test typing the TC728

We next turn to the final aetherometric discovery of the relationship of the length of the coil to the voltage wavespeed and the magnetic field frequency. For this purpose, employment of the BD10A coil is a fruitless task, since the coil is potted and, despite our repeated requests, the manufacturer was unable to supply the length of the secondary - invoking, amongst other spurious excuses, that "it would have to be measured" (!?). Similarly, employment of the SF TC for this purpose is also a thankless task, since its rated frequency is off by 1.5 times and its inductance off by almost 60% from the nominal specifications - albeit that we know the number of turns (nominal 400, counted 404). Hence, for the task at hand, we designed a 728 turn, 366 meter long secondary coil, drove it with the vibrator stage common to the BD10A, and test typed it in order to determine the capacitative and inductive frequency terms, F_A and F_B. The results were as follows: The voltage potential of this third coil (TC728) was measured with the gold-doped 2(3*H1803 Varo diodes) full-wave divider immersed in pure paraffin oil, as ranging from 46 to 50kV, ie an electric wave speed range of 3.1826 to $3.453*10^9$ m sec^{-1}; the actual inductance of the coil was ascertained with the Escort ELC-310 LCR meter as 38.5mH, corresponding to a classically calculated inductance of 975.2 μH =∫= $7.6758*10^{-19}$ sec^2 m^{-1}; and the derived electromagnetic coil frequency F_C was ascertained with the Tesla antenna unipolarly connected to the oscilloscope (Hameg HM1007), as being 200kHz, with a period of exactly 5μsec. The capacitance of the secondary was calculated by the classic relation and its aetherometric equivalence:

$C_{2^\circ} = [4\pi^2 L_{2^\circ} F_C^2]^{-1} = [4\pi^2(975*10^{-6} H)(200kHz)^2]^{-1} = 6.5*10^{-10} F = \int =$
$= \int = 8.25183*10^5 m$

For the maximum 50 kV voltage output, the electric frequency of the massfree waves assembled in the coil is determined by the aetherometric relation for ambipolar massfree radiation:

$$\mathcal{E} = (W_{v2^\circ})^2/\mathbf{p}_e = 8.536*10^{17} \text{ sec}^{-1}$$

and this permits determination of the wavelength of the same electric waves as:

$$\lambda_{y1} = W_{v2^\circ}/\mathcal{E} = \mathbf{p}_e/W_{v2^\circ} = 4.046*10^{-9} \text{ m}$$

The total capacitative charge developed by the coil at this potential is determined by:

$$Q = C_{2^\circ} V_{2^\circ} = \int = C_{2^\circ} W_{v2^\circ} = n\lambda_{y1} W_{v2^\circ} = 2.85*10^{15} \text{ m}^2 \text{ sec}^{-1}$$

and thus the number of (massbound) charges deployed at anyone time is:

$$n = (C_{2^\circ} W_{v2^\circ})/\mathbf{p}_e = 2.04*10^{14}$$

with the result that the frequency of the capacitative or electric field of the coil is:

$$F_A = \mathcal{E}/n = 4{,}184.88 \text{ sec}^{-1}$$

The frequency of the inductive or magnetic field of the coil is directly ascertained by the aetherometric relation:

$$F_B = (L_{2^\circ} W_{v2^\circ} 4\pi^2)^{-1} = 9.55616*10^6 \text{ sec}^{-1}$$

and these determinations are confirmed by the aetherometric relation we have discovered:

$$F_C = (F_A F_B)^{0.5} = 1.9998*10^5 \text{ Hz}$$