Re: Circuit Theory Model of Ringing on a Transmission Line - In Compliance Magazine

I've managed to stumble upon a circuit topology which rings in a periodic manner in as much as the pure resonance rings for a consistent duration, then collapses, only to restart its resonating mode for an equal duration. This results in periodic surges of spikes: waves whose data points are restricted to the maximums and minimums of an explosive wave form with nothing else available to plot in between. And all of this due to a simple circuit undergoing simulation in Micro-Cap which possesses a triple set of mutual inductances among its three sets of coils. These triple mutual inductances possess parameters analogous to some of the properties of the Golden Ratio in that ...

1. The first mutual inductance is chosen to be somewhere less than 100% of magnetic coupling and greater than or equal to the Golden Ratio of 61.8%.
2. The second mutual inductance is derived from subtracting the first mutual inductance from 100% and taking its square root.
3. The third mutual inductance is derived from subtracting the first mutual inductance from 100% and taking its cube power. In some instances, this parameter may require minor adjustment for optimal gain.

1. For example, ...
   If the initial, or primary, magnetic coupling is chosen to be 61.8%, then the secondary magnetic coupling is equal to the first and the third magnetic coupling becomes 5.573%.

2. Or, in the alternative ...
   If the initial, or primary, magnetic coupling is chosen to be 70%, then the secondary magnetic coupling is 54.77% and the third magnetic coupling becomes 2.7%.

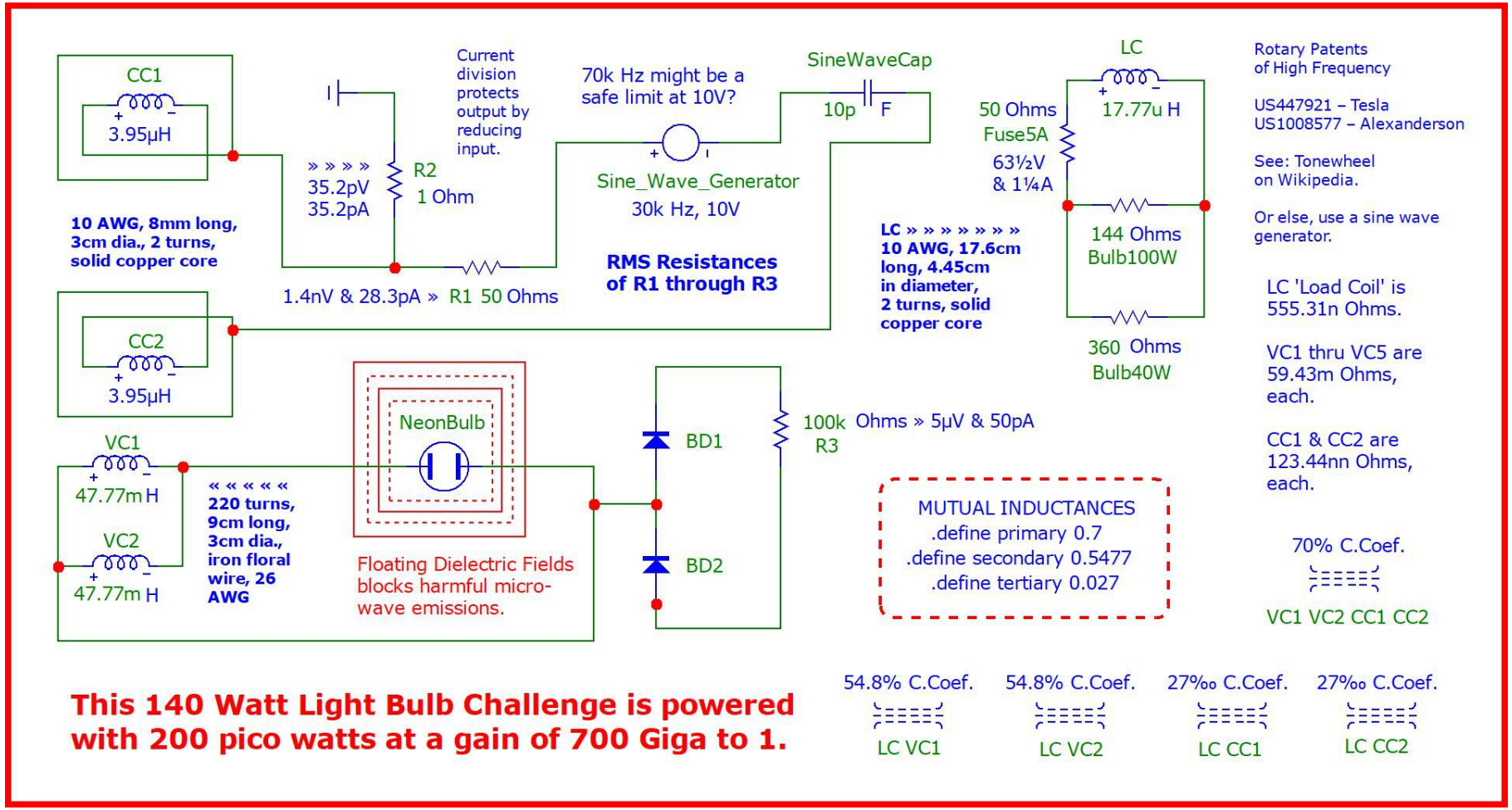
3. And lastly, ...
   If the initial, or primary, magnetic coupling is chosen to be 99%, then the secondary magnetic coupling is 10% and the third magnetic coupling becomes 0.0001% or is sometimes capable of being ignored (not included in the circuit's design) probably due to its extremely small value.

The core functionality of this type of circuit is a minimum of five inductances grouped into three sets to take advantage of these three mutual inductive relationships.

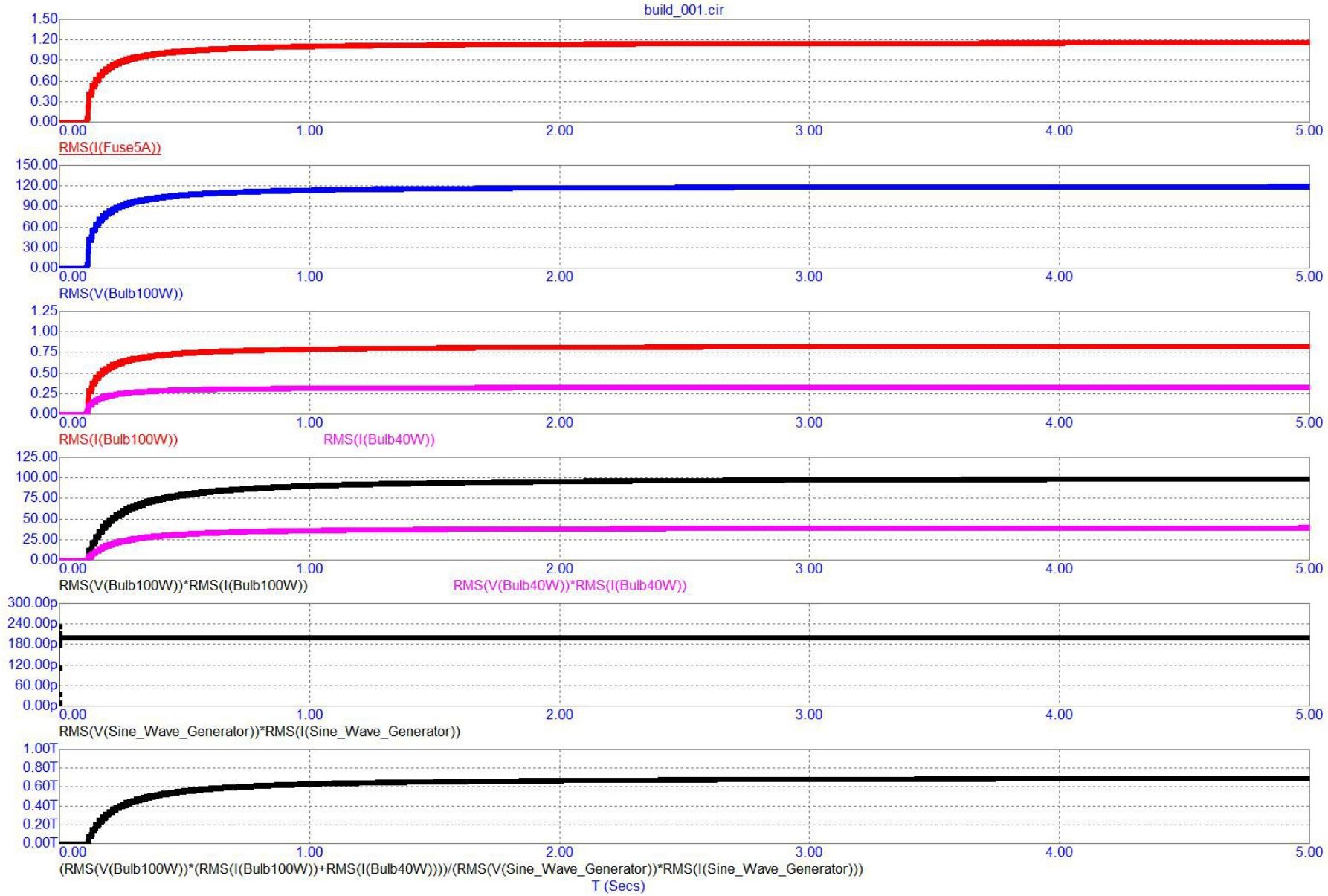
1. The first set possesses a minimum of two coils connected in parallel. These are the enlarged primary inductances of a step-down transformation. (labeled: VC1 and VC2, below)

2. The second set possesses a minimum of two coils which are electrically disconnected from the remainder of this circuit, or else connected, depending upon variations which are possible. These are the secondary shrunken inductances of a step-down transformation. (labeled: CC1 and CC2, below)
3. The third set is restricted to one coil which is electrically disconnected from the remainder of the circuit. (labeled: LC, below)

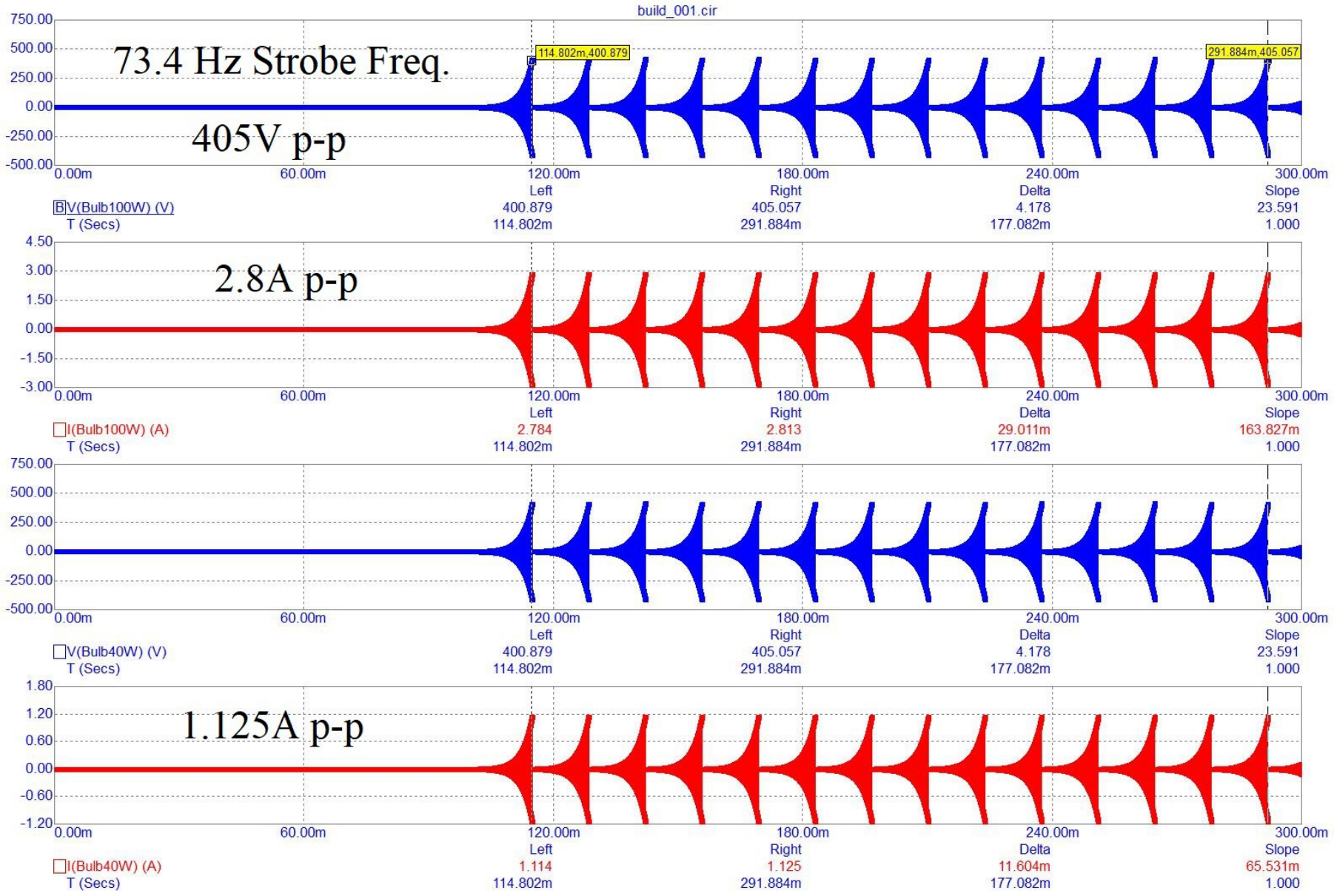
For example, consider this ...



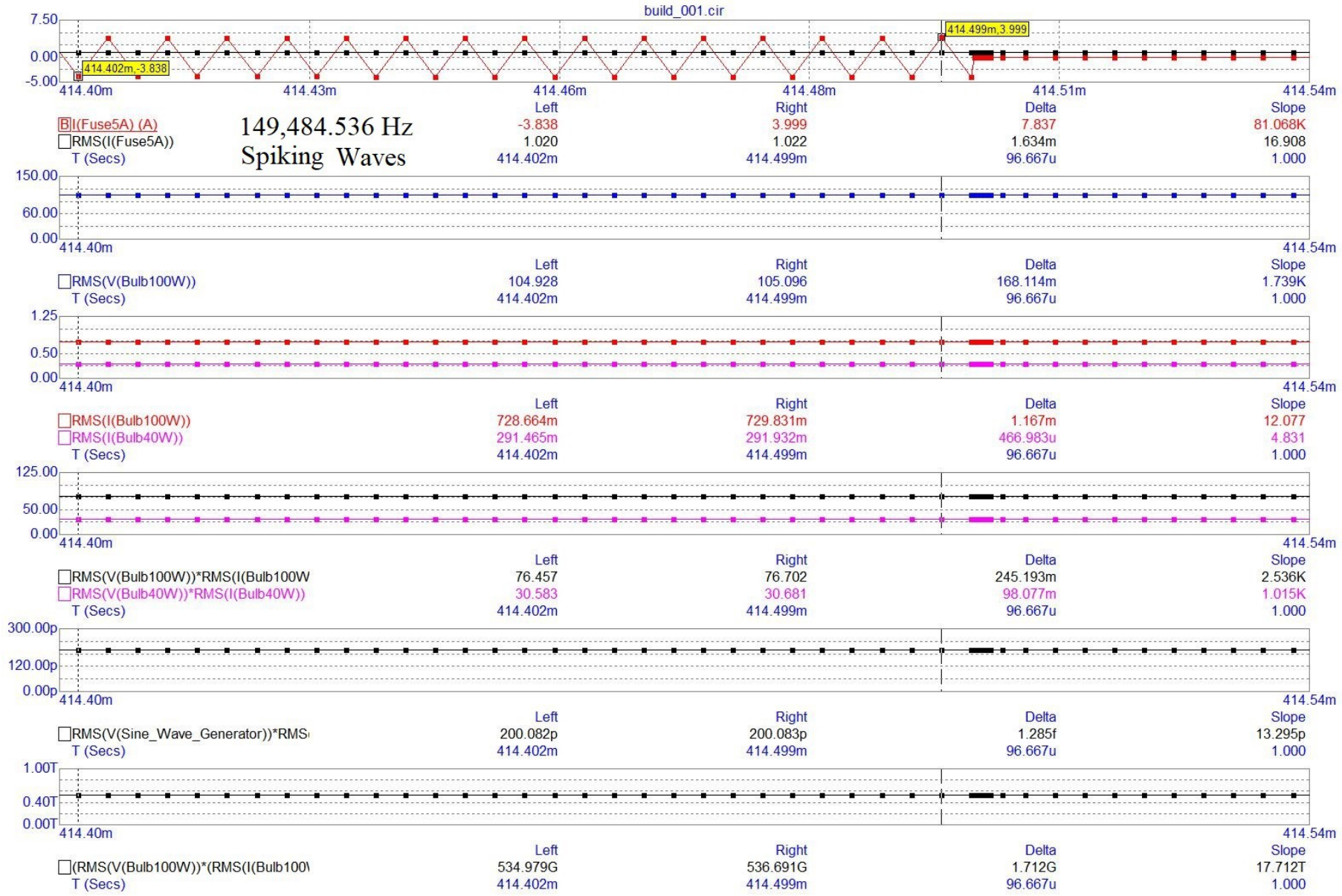
Some of whose outputs are these …



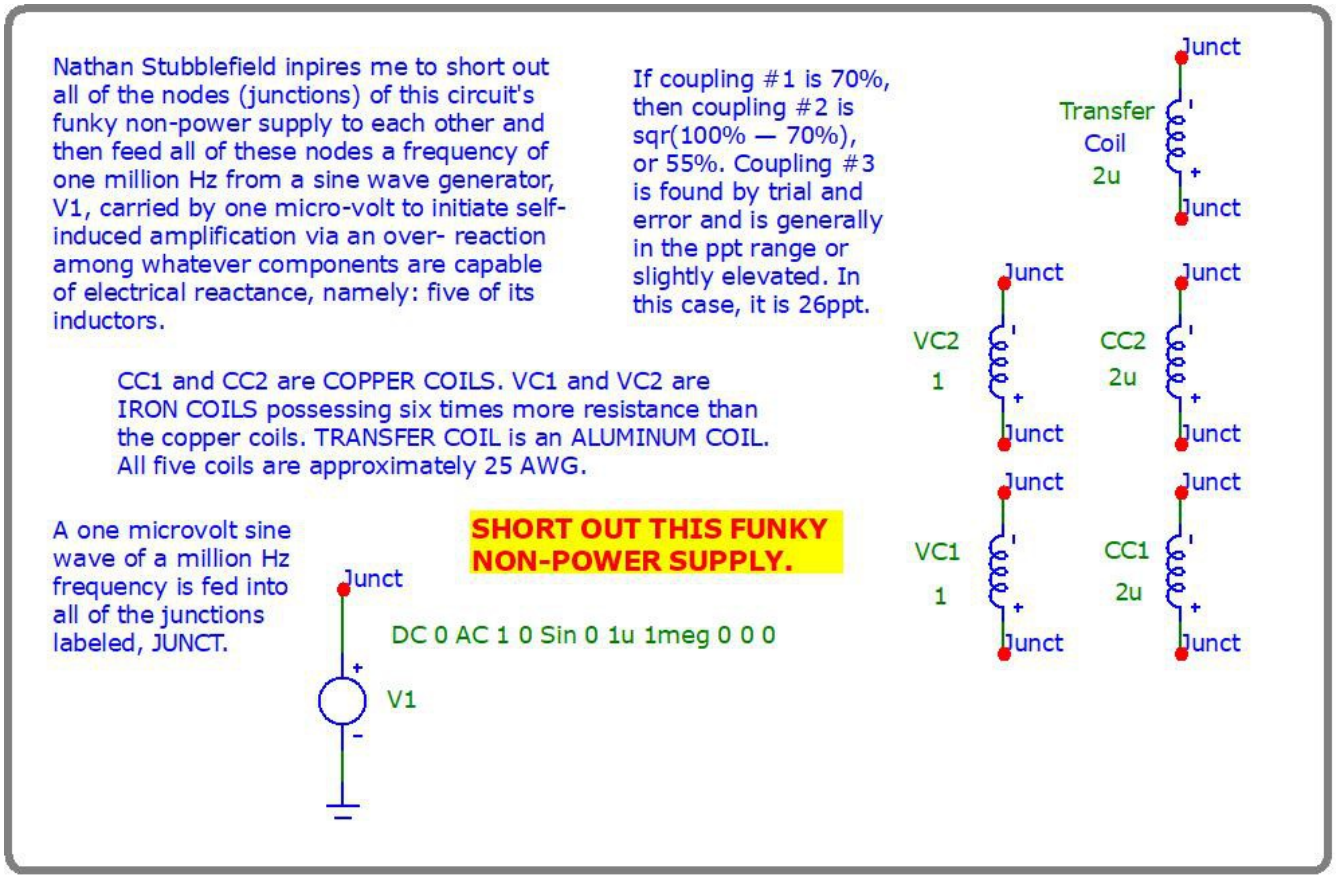
The frequency of its periodic collapse (strobe) is ...

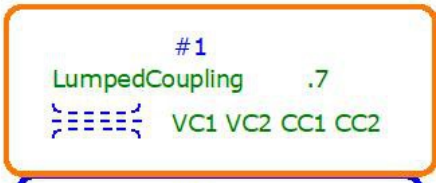


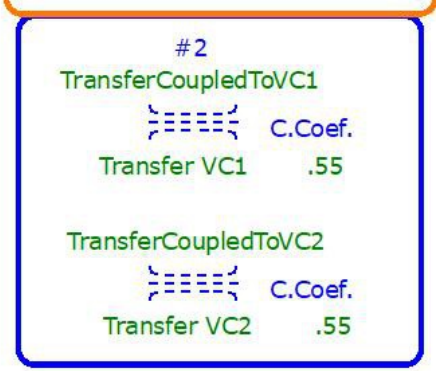
The frequency of its spiking waves is ...

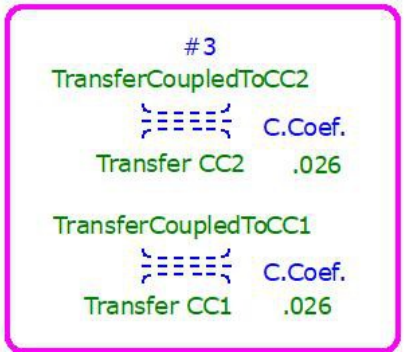


Another variation is this which does not strobe. Instead, it exponentially escalates without limit ...

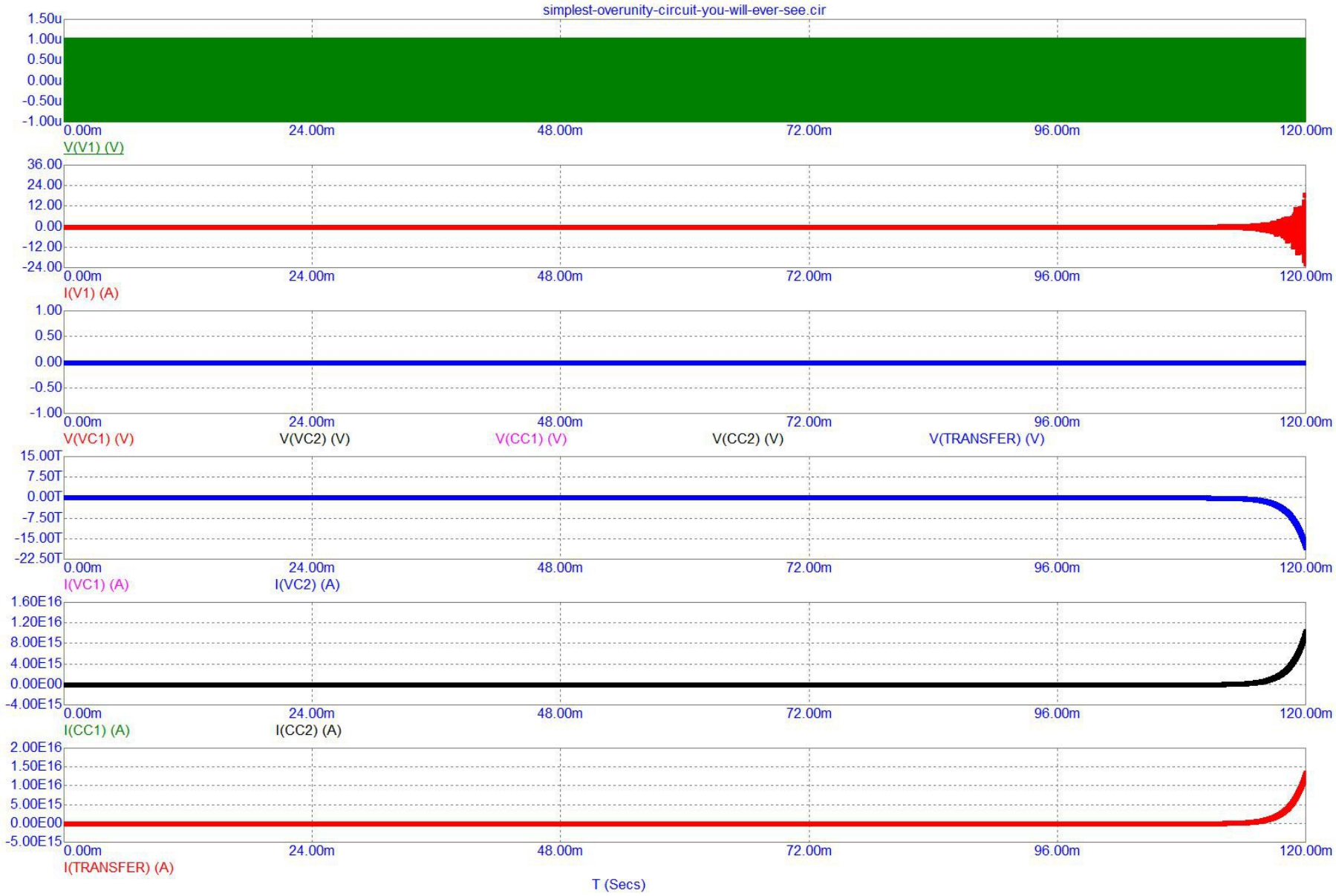




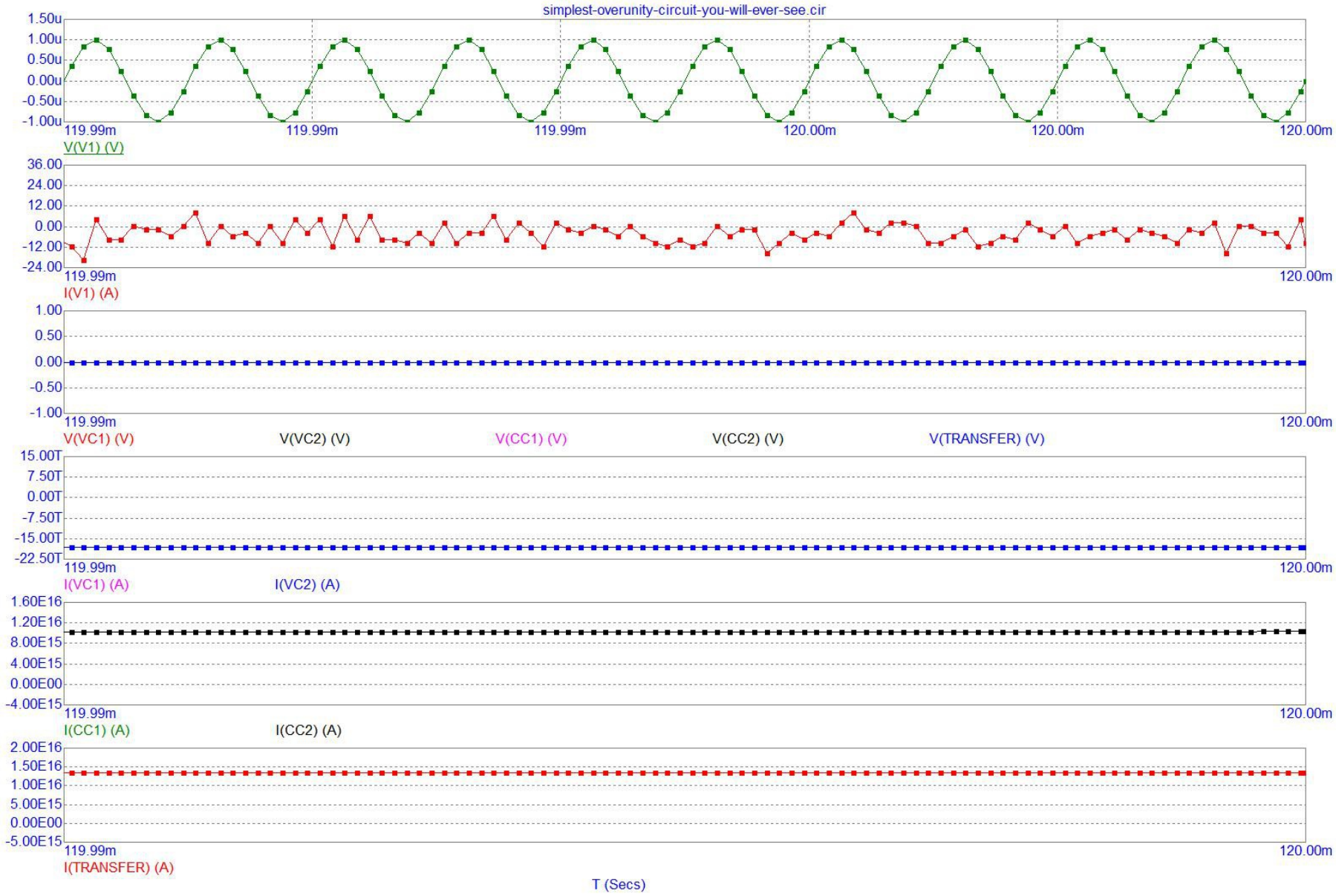




Whose outputs are these …



Closeup view at 120ms ...



My question to you is this, ...

I don't know where to look, online – in the literature, to find this anomaly under discussion.

I don't know what else to call it to facilitate an online search.

Yet, I managed to discover your article!

Plus, it's a challenge to determine how to build a circuit with three precise mutual inductances.

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Vinyasi

Overunity does not Defy Physics (wireilla.com)

100 Watt Light Bulb Challenge (quora.com)