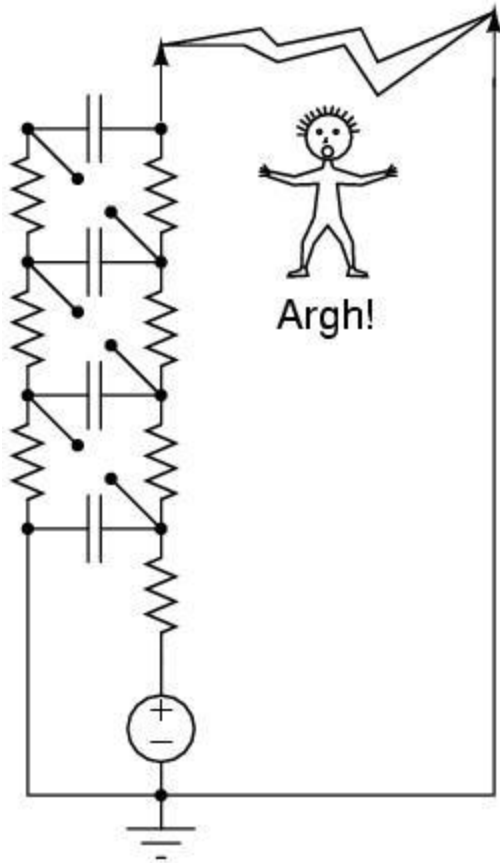


Marx Generator

The Marx Generator is a simple way to generate lots of voltage. It isn't a new idea, charge up a stack of capacitors in parallel, discharge them in series. When you use high voltage capacitors and spark gap commutators the resulting sparks are quite impressive.



If cheap loud and long sparks are your aim, a Marx generator delivers them with excellent simplicity. Just a slack handful of bits and pieces (although somewhat exotic devices are required) will build you a respectable noise and light show that can be powered nicely with a flyback or similar source of kilo-voltage DC.

If you are going for maximum spark length and pushing the corona and breakdown limits then Marx generators are not the best, they are pulse mode (sparks) not continuous arc/flame markers. A Tesla coil would be a better project.

Marx generators make excellent lightning simulators. They are also very hostile to surrounding equipment, as my power supply well knows. My first

simple proof of concept device fried my bench PSU after a few shots. Be careful they can bite you very hard too! I carefully discharge each stage before handling it, but now and then I've missed a cap and got bitten, it hurts.

Unlike Cockcroft-Walton multipliers, the Marx Generator needs no diodes, and only uses one cap per stage. This reduces their cost enormously, at the expense of the mechanical complexity of the spark gaps. Give one a go, you'll love 'em!

SOURCE: <http://www.vk2zay.net/article/13>