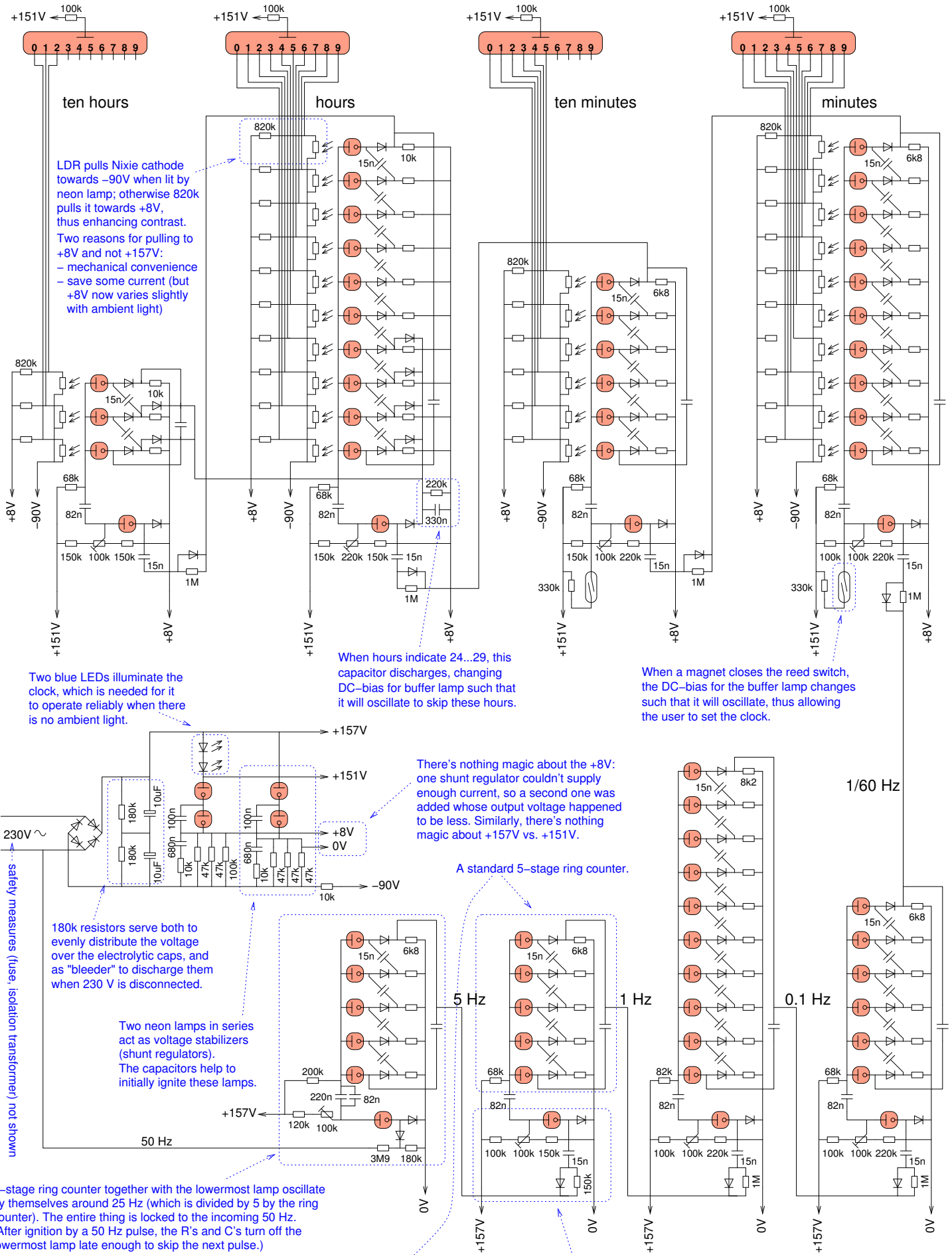


Nixie clock using neon lamps as logic elements

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<http://wwwhome.cs.utwente.nl/~ptdeboer/ham/neonclock/>



Principle: Assume one lamp is lit. Current through it develops voltage across its cathode resistor, which charges coupling capacitor to next lamp. Next, assume negative pulse on anodes extinguishes lamp. Capacitor is still charged, but resistor pulls side that was previously positive to 0V, so other side must go negative (diode prevents discharge); this side is cathode of next lamp, which thus ignites first when anode voltage rises again.

This is a buffer stage. Ignition of this lamp gives a pulse to the ring counter. The trimpot sets the voltage across lamp to just below its striking voltage. The negative edge of an incoming pulse from the previous stage ignites the lamp. The incoming pulse is "filtered" by the combination of diode, resistor and capacitor to prevent short spikes from igniting the lamp.