

Mark's Haunted Garage

<http://www.markshauntedgarage.com/halloween/techinfo/555timer.html>

555 Timer Circuit

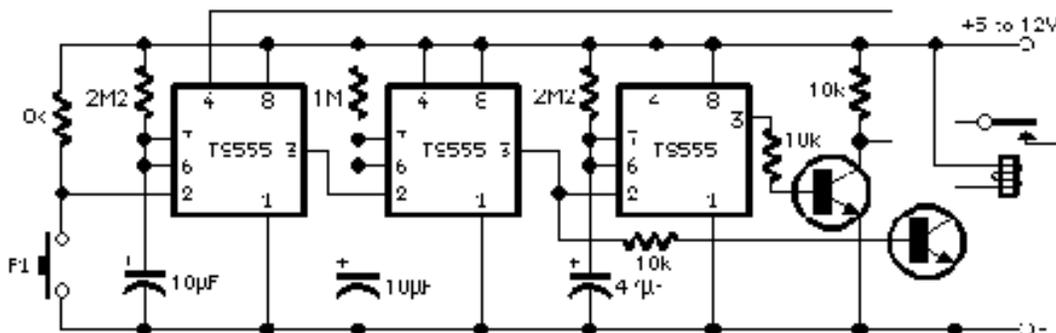
The following information was posted on behalf of Doug Probst.

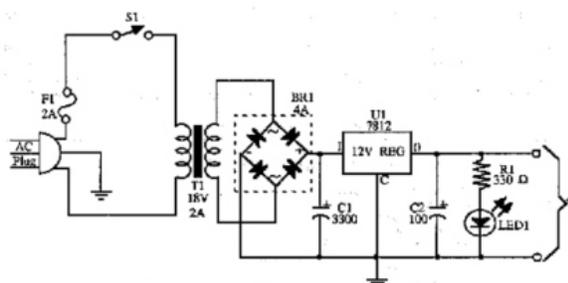
I had sent email to a fellow who has a very cool website <http://www.redcircuits.com> with lots of great free circuit schematics, asking him for a 555 timer design that would provide the delay, on time and lockout I was looking for. Below is his response and the base circuit. Much detail was left out for simplicity and I had a great time learning about the 555 and what needed to be added to make it work. (Built it on a bread board first.)

The embedded bmp is his original schematic that I modified with a bunch of methods that were not optimal (talk about your duct tape). I do not have the schematic of the 12v power supply I used to power this circuit. There are a million of them on the web and I just used one of them. You could most likely use a wall vampire but I needed 120v to fire the prop, so I put my power supply inside the controller.

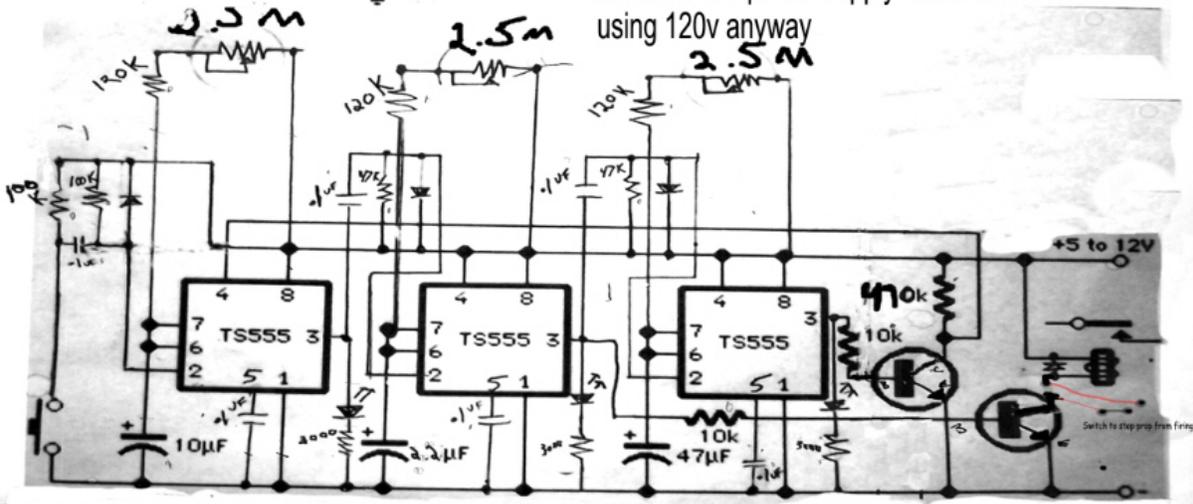
I added a switch to the "lockout" section of the timer to (hopefully) help get things set up faster (no 1 minute wait time). One thing to note, with this switch open (no lockout) the circuit can become confused. In other words, the thing can be triggered while the prop is in the on state causing the prop to stay activated. I added a switch to stop the output to the relay, this was installed to prevent firing of the prop when power is initial applied to the control unit. I am very sorry about the condition of this schematic. I didn't update it until after I finished the final build. I thought I had a digital image of it, but I didn't have a complete one. I had also lost the paper copy with all my changes.

I believe the middle image below is correct. During the final build, I added a second relay to use as a trigger for a digital recorder for sound. The main relay controls 120v to 2 receptacles, one for prop and one for light. One other thing I did on the final build was to strip down some old computer monitors and use the cables and connectors in the control unit. This allows me to disassemble the thing without having to unsolder anything. Looks like hell but actual worked out well.





These are the 2 schmatic that make up the prop control. You can use a DPDT realy to operate a 2 port piston. You can add extra relays to do other things like tigger audio and fog.Values of Pot and caps can be played with for other timing values. This can be used to control any voltage, I happen to use 120v for props and build the 12v power supply in the unit since it will be using 120v anyway



Delay time 2-35 sec
 On time 0-6 sec
 Lockout 6-2:10

09/18/2006



Here is the original email Doug received from redcircuits.com:

Hello Doug,

I remember well our correspondence about the LED Pulsar for the monster's eyes.

I attach below a circuit I have expressly designed for you. Unfortunately I have not tried it in practice, but I think it might work. It is not a definitive schematics and perhaps you should do some experimenting: therefore I will add some suggestions.

- P1 is drawn as a pushbutton but it can be any switch you will use for the purpose of starting the device.
- The timing formula of the 555 wired as a monostable is $1.1 (RC)$ in seconds (please use CMOS type 555s as specified).
- Therefore, the leftmost IC will stay on for about 24 sec., that driving the relay via a transistor about 11 sec. and the leftmost IC for about 113 sec.
- Obviously, you can arrange the timers for any time value by making the resistors variable or changing capacitors values etc.
- The voltage supply can be any value in the 5 - 12V range and the relay must be suited to the voltage chosen or vice-versa.
- The transistor must be suited to the current drawn by the relay. In any case, I think the 2N2222A or MPS2222A a very good choice.
- The other transistor can be of the same type as above or any other general purpose NPN like the 2N3904 (that can be used to drive also the relay if this is a low current type).
- That's all. I am confident the circuit will match your requests. In any case, it can be modified further.

Hoping to have been of some help,