

4-Way Traffic Light

by Del Tapparo

This project was the culmination of a fun little Arduino project I did, discovering some new printed circuit board design tools, and fellow club member (Andrew Holbrook) who just happened to be experimenting with 3D printing and lamp posts. So what started out as just another blinking LED software exercise, has now produced a working large scale model of a 4-way traffic light. Many small towns talk about having only one stop light. This could be it.

The first iteration was a hand wired PCB and a tower of LEDs to simulate a traffic light. It was based on an Arduino Pro-mini microcontroller, which just functions as a timer and sequencer.

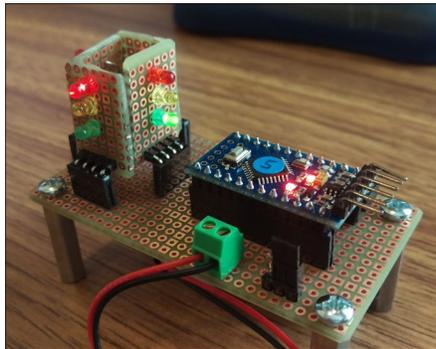
Then Andrew designed a scale traffic light for use with 10mm LEDs, which scale out to around 8" in diameter. Overall height of the light is 7", or about 13-14 feet. This spurred me on to make another circuit board to operate it. I had just discovered a new PCB design tool called "EasyEDA" (Electronic Design Assistant). So a PCB for this project was an opportunity to learn this new software.

Installing the LEDs and getting them wired up inside the light was a bit challenging, but it got done. Wiring exits through the bottom of the post, which can then be routed to a remotely located control box powered from 4 AA batteries. In my case, I was just making a desktop toy, so the light was mounted on top of the control box, which also serves as a stable base.

The new PCB was designed using a PIC microcontroller and a 2003 transistor array to drive the LEDs.

So we should be seeing one of these installed on Andrew's railway soon, along with his array of 3-D printed street lamps.

I have more circuit boards and Andrew would probably be willing to make more 3D prints if anyone is interested in a fun little project.



My Arduino project ...



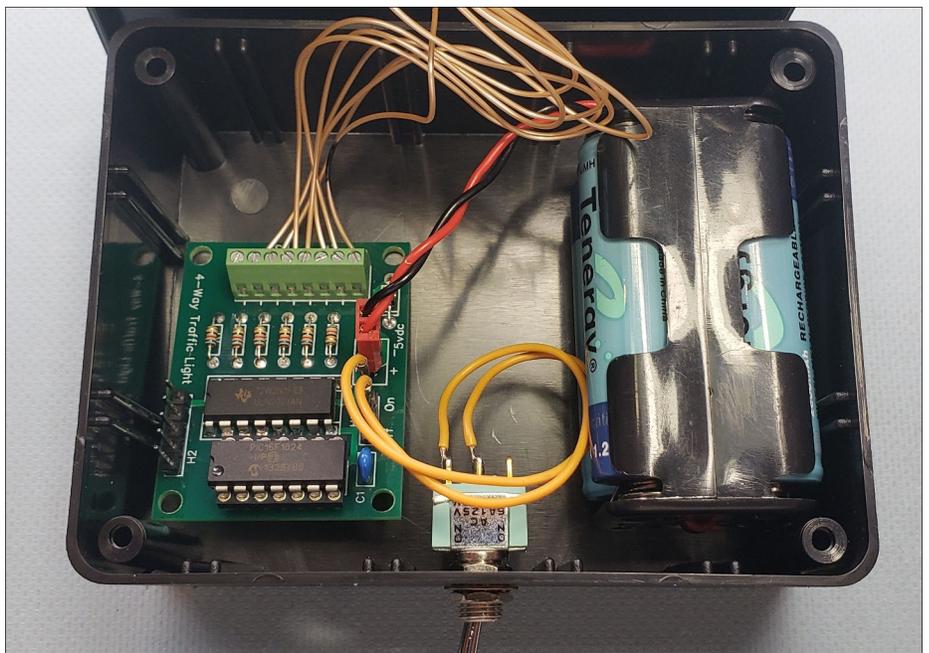
And Andrew Holbrook's 3D printing project ...



Combined to make a working traffic light !

In Memory of ...

The conductor, who came out of retirement specifically for this photo shoot, sadly fell to his death shortly after. Surgery after decapitation and loss of his right hand was unsuccessful. He will be sorely missed.



My Traffic Light will just be used as a desktop toy, so electronics box is also used as a mounting base.