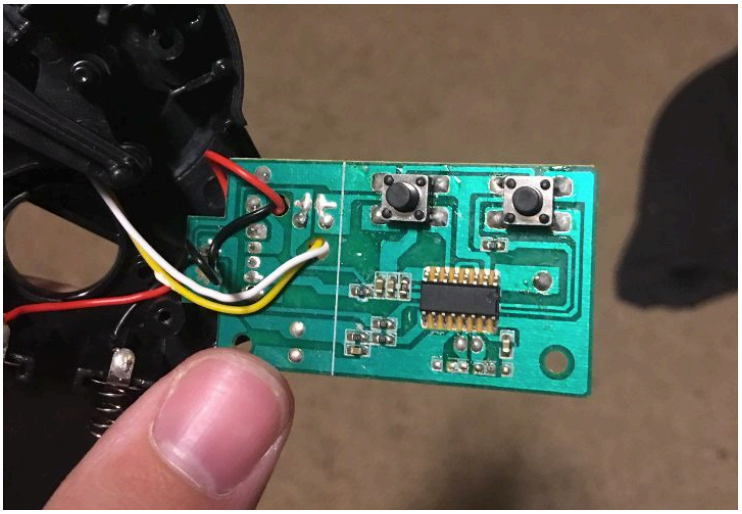
Zach Perry

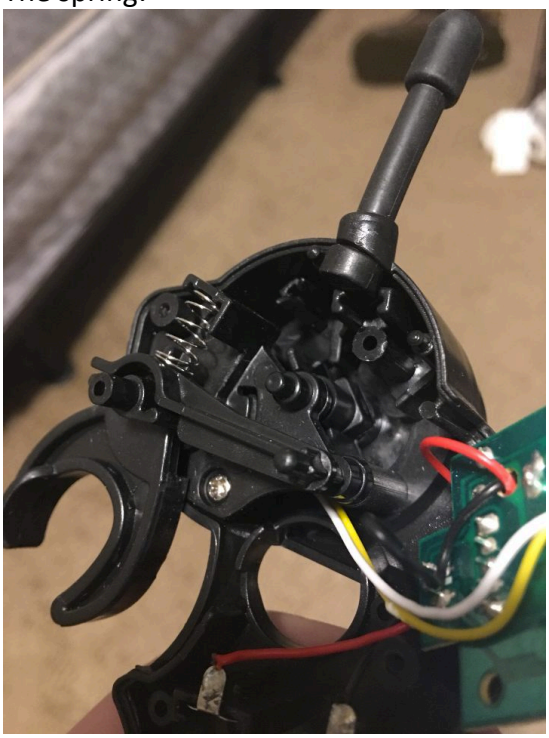
Remote Notes

- Remote is overall simple, powered by 2 AA batteries, and broadcasts a signal to the cars
- Two switches are touched when the wheel is turned to control the steering, shown in the photo below

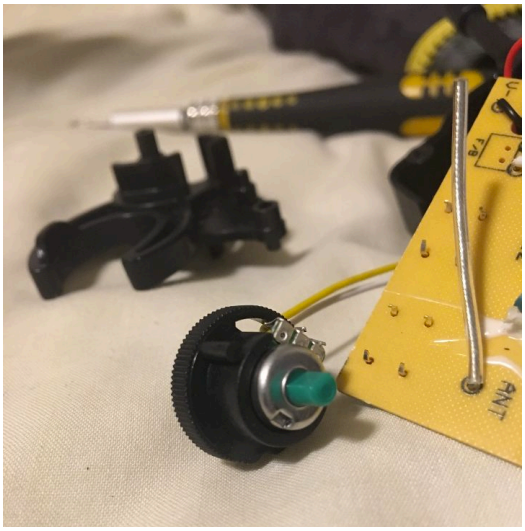


- The throttle is controlled by a potentiometer, and in this remote, is actuated with a small spring mechanism

The spring:



The potentiometer:



- All of it is run by a small logic board that simply broadcasts the commands generated by the potentiometer and steering switches to the car, via the antenna also attached to the board, shown here:

Communication Notes

Obviously for this project we will not be using these controllers, and instead need to figure out a way for the controls to be managed by a software via the pi, knowing the possible commands. We already know that the steering works simply by pressing either the left or the right switch. These in turn, cause the car to steer left or right. We will control the steering using the pis GPIO pins.

However, it may be challenging to replicate or control the signals the potentiometer would be sending. Our current goal is to implement PWM control with the pi based on other past similar projects, and adapt it to our end goal of being able to modulate the throttle in the cars. For now, we will start off using them only at minimum speed, as they are a bit faster than we expected, though we will eventually be able to change the throttle response.

The board in the remote is powered by 3.3V. This works in our favor because we can control its switches with the 5V pi GPIO pins.