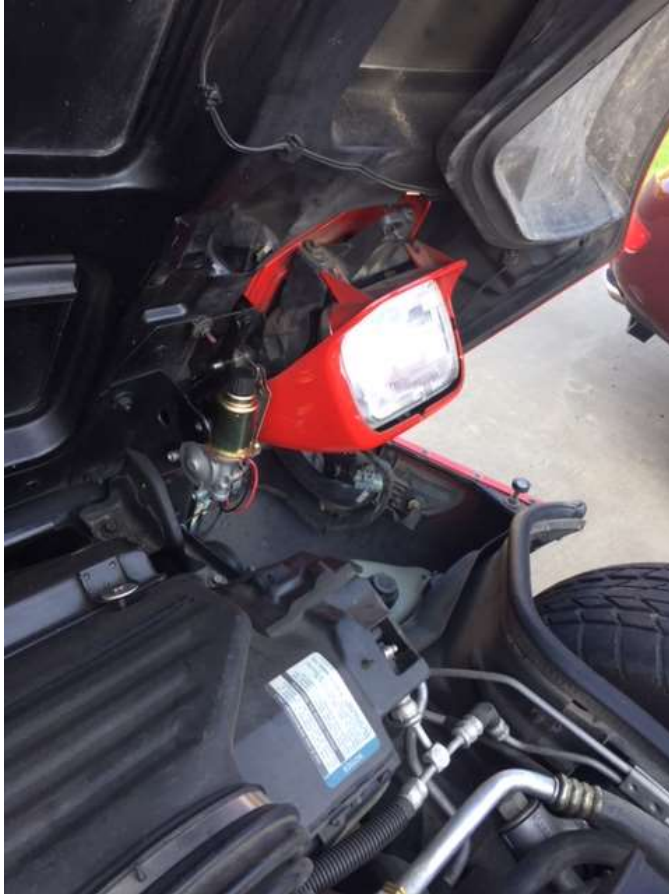


This is my process to test and actually repair the headlight control module on a C4 Corvette system.

I had an issue with my Corvette where the left light would turn on and flip up. But the right side would not flip up, but would turn on. I checked everything, thinking it was a bad motor or wiring issue. Here is the story to read on how I fixed it instead of buying a \$300 module.



This Light would illuminate, but just would not rotate up. I checked the wiring at the light end, and found the motor was indeed working properly.



I ohmed out the wiring from the plug back to the central point where both headlights conjoined to be sure I have no issues with broken wires, or plugs, or even a motor issue.



This is the light control module. This module basically drives the motors on the lights to open them when the light is turned on by sensing the current flow and turning on a relay which feeds power to the motors to turn them up. When the lights are turned off, the module senses no current flow and reverses (relaxes) the relay so they can drive back down.



The control Module has one side connectors which is the power to the motors, and on the other side is power fed to the light bulbs. The module looks at the power going to the bulbs and uses this to drive the motors up or down. This is all done in the module by a circuit board which I will look over here.



With the module out, you can see the two connectors. The left one is the actual light wires which drive the light bulbs. This current flow is fed into the module which drives the power out to the light motors as you can see the four wires which are the pairs ending at the left and right motors (Blue pair is right, and green pair is left). I ohmed these back to the light motors, and the lamp wires back to the bulb connectors.



Here I am holding the two connectors so you can see the colors on each connector and that the motor connector has four wires and the lamp connector has five. Here I am holding the connector to the twomotors...



...and here is the connector to the lamps... both lamps are working correctly so I am not working with this connector.



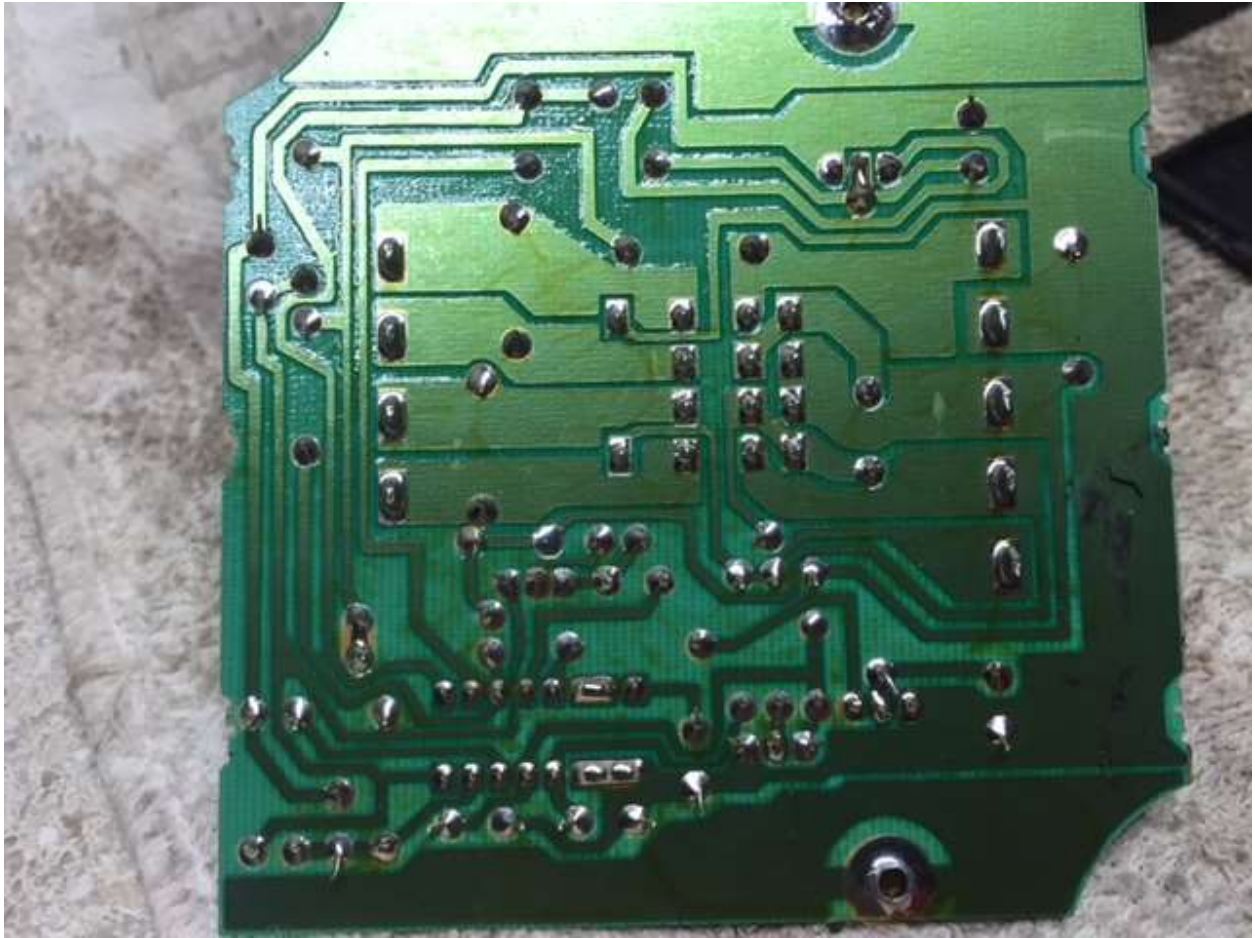
I removed the module and took it apart to investigate what is going on here. I have the box halves, the board and mounting bolts here.



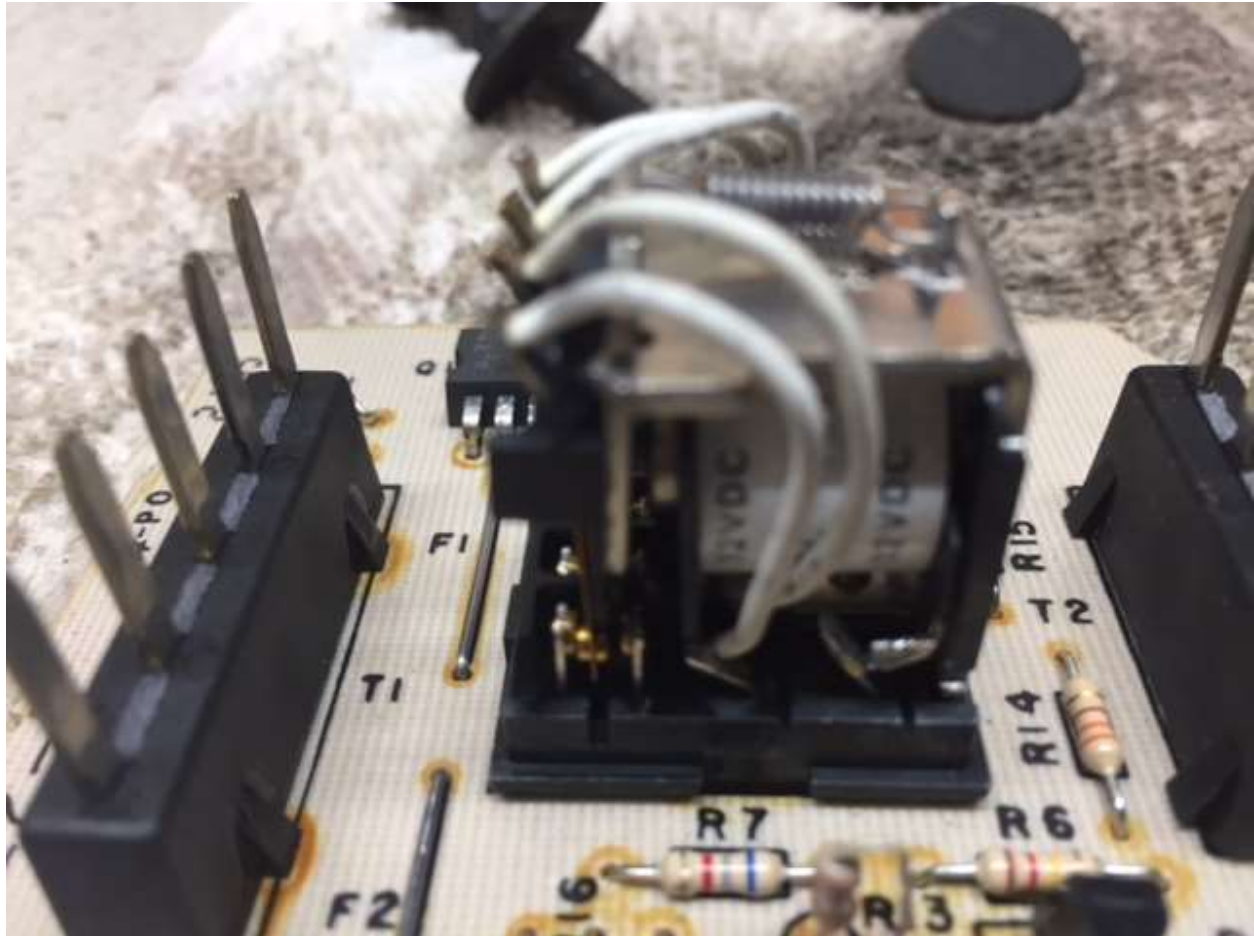
Here they are with my tools I am using to test stuff.



Let's look at this crazy board now. There is a tiny bit of logic on this board in that it senses current from the lamp lines which energizes the two FETs, which in turn fire the relay which has four parallel connections (+ & - for both light motors). I basically checked all the discrete components with the multi-meter so they are all validated, working my way in to the center which is the actual switching component... "The Relay". Three lines tested working, and one tested bad. Looking at the clear canopy, I saw a black cloud on the inside of the canopy where the connection tested bad... Hmm..



When you look at the bottom of the board, you can trace the paths out from the relay and see what is going on here as this is a somewhat simple circuit to examine and test. See the relay connectors in the middle? They are feeding the motor + & - wires for both lights (4 lines).



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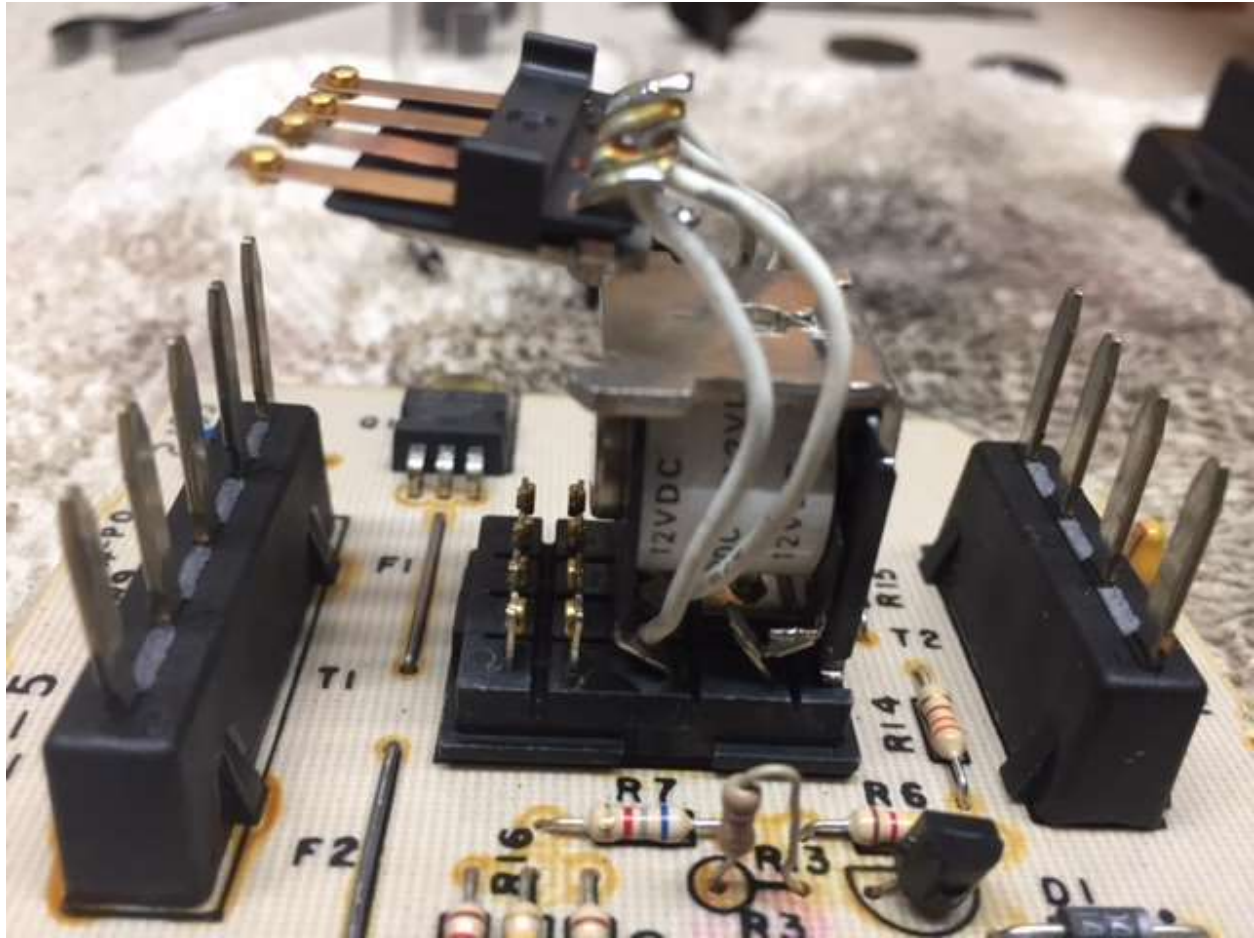
I opened the canopy of the relay to get a better and closer idea of what is happening in there..



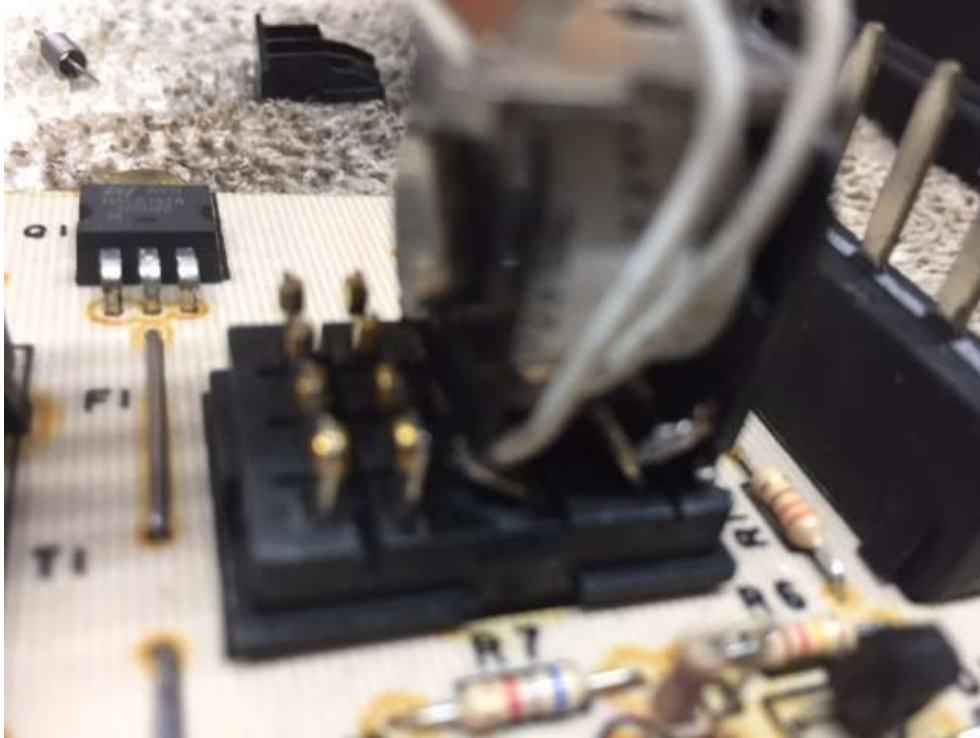
As you can see, I took the tension spring loose as well as the spacer which keeps the four paths from arcing across to each other and shorting out. This way I could see and test all the contact points (which is what usually fails first in a relay like this one).



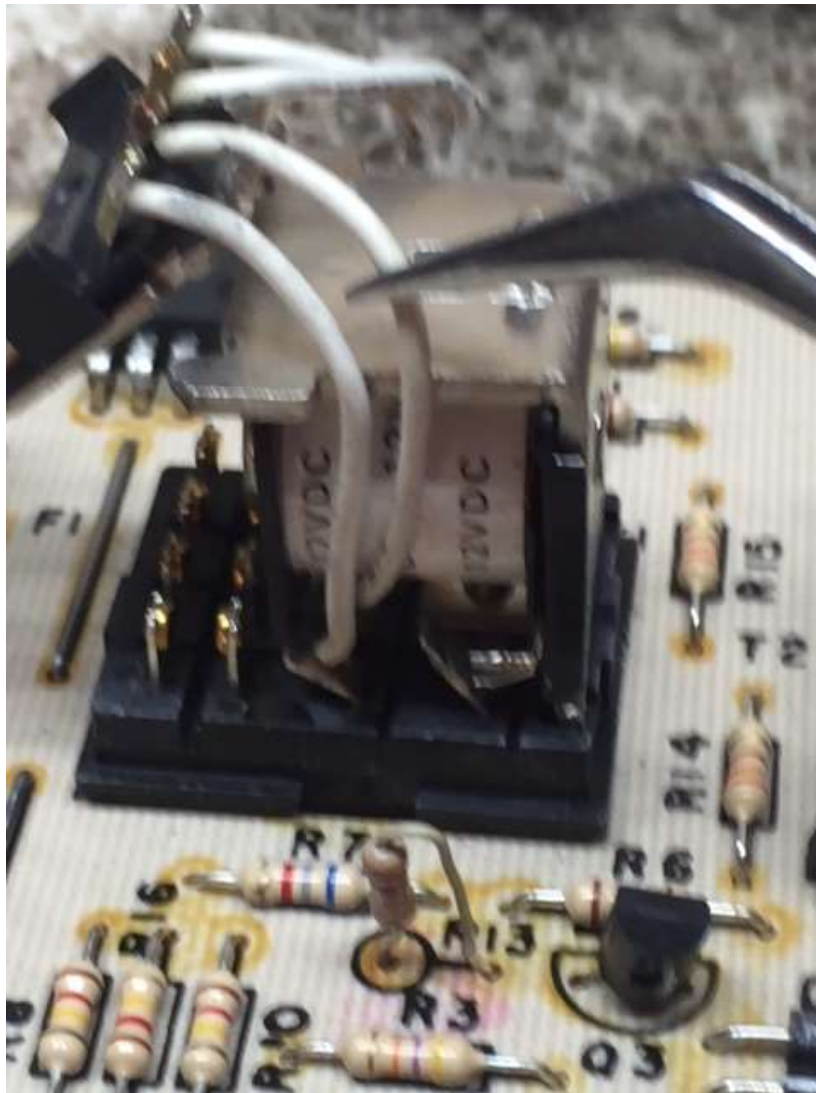
Here is a top view of the board and relay so you can see the four discrete lines going to the arms which physically move back and forth to make and break connections.



When I ohmed these white wires which go from the board up through the switches and back out to the motor wires, three were good, but one was open. I am not sure if it is the + or – motor wire, but the circuit is open and so the motor will not run.



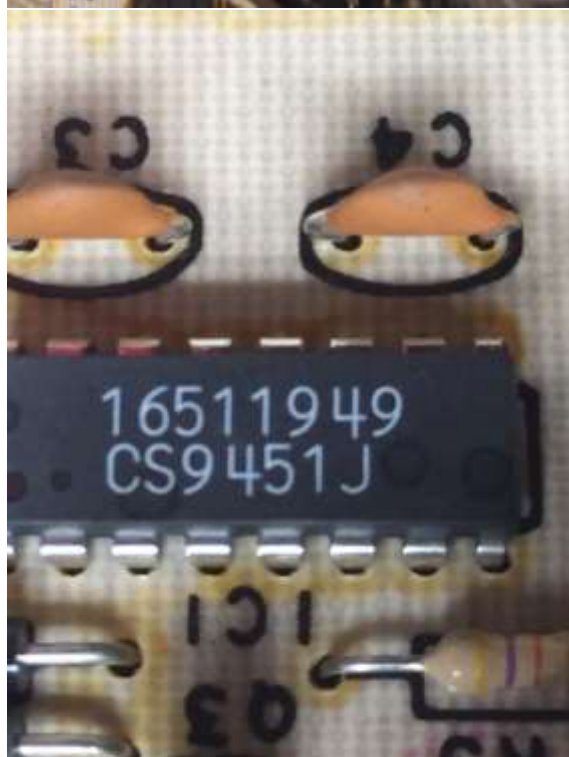
I know this one is blurry.. but you can see that here you can access both sides of the contact points from the board as test points.



Here is the bad wire in the relay. It's the second one in on the bank of four lines. I could simply replace this little wire to fix it, but I am opting to replace the entire relay... Its cheap and then I will not have to worry about it possibly breaking again. I priced this relay at \$15 as of 6/22/18.



Here are an array of pictures I took of the various components on the board in case you have one where the values have burned off.. Maybe it will help someone out.





I hope this has helped you guys out. This module was repaired for roughly \$20 tops..

This module sells for I see \$160 - \$300 on various parts pages... Good grief.

Fix it yourself!