

After about 6 months of working on this issue, I have finally solved the electrical problem. It stemmed from three sources, which made identifying the specific causes very difficult.

Problem Recap:

After rewiring some loose connections and replacing bulbs, every time I pressed the brake pedal with the ignition off, the chime would sound and both the parking lights and dash lights would turn on. The hazard flashers would cause the chime to sound with every flash.

Analysis:

There is a brown wire that goes from the headlight switch to the dimmer switch. In between, the brown wire splits and sends power to a number of different sources when the headlight switch is turned on, including the parking lights and hazard lights. The brown wire also went to the dimmer switch, which then sent power to the INST LPS fuse on the fuse box. From there, a gray wire sends power to the dash lights, chime, ashtray bulb, clock, etc. So when the brown wire got power when I pressed the brake pedal, so did the gray wire and all of the lamps on the INST LPS circuit turned on.

First, I unplugged the dimmer switch and determined that it was the brown wire getting the rogue power and not the gray wire. I checked for loose grounds, wires and connectors and blown fuses. Then I checked the lower brake switch, which I just replaced a few months ago. There are three wires on the connector: orange, white and blue/black stripe. Orange is constant voltage from the fuse box and when the brake pedal is pressed, the switch sends power to both the white and blue/black stripe wires. The blue/black stripe wire sends voltage to the third brake light. The white wire sends voltage to the hazard switch connector. I unplugged the connector and sent power to the blue/black stripe wire and only the brake light turned on. I sent power to the white wire and the parking lights came on so the problem is in this circuit.

Unplugging the hazard connector switch stops the problem. So I tested the output of each wire and discovered that the parking lights turned on when voltage was individually sent to the yellow, dark green, light blue and dark blue wires. The yellow and dark green wires go to the left and right brake lights respectively, which caused the parking lights to come on when the brake pedal was pressed. The light blue and dark blue wires go to left and right the front bumper turn signals respectively, which caused the hazard and turn signals to send power to the brown wire and therefore the chime and dash lights.

Discovery:

After much searching under the dash, inside the instrument panel and on the internet, I discovered that there were three (3) different sources for unwanted voltage being sent to the brown wire. I replaced all of the bulbs with LEDS. Also I had a shop install an aftermarket alarm system. I case you weren't aware, most LED brake light/turn signal bulbs operate by changing the brightness of the LEDs. Incandescent bulbs use two (2) filaments, one for parking lights and one for turn signal/brakes lights. Since the LEDs have all of the diodes on, when the brake light

wires (yellow and dark green) and the turn signal/hazard wires (light and dark blue) get voltage, a small amount of voltage (+5 volts) bleed back from the LED bulb into the parking light wire circuit (brown wire).

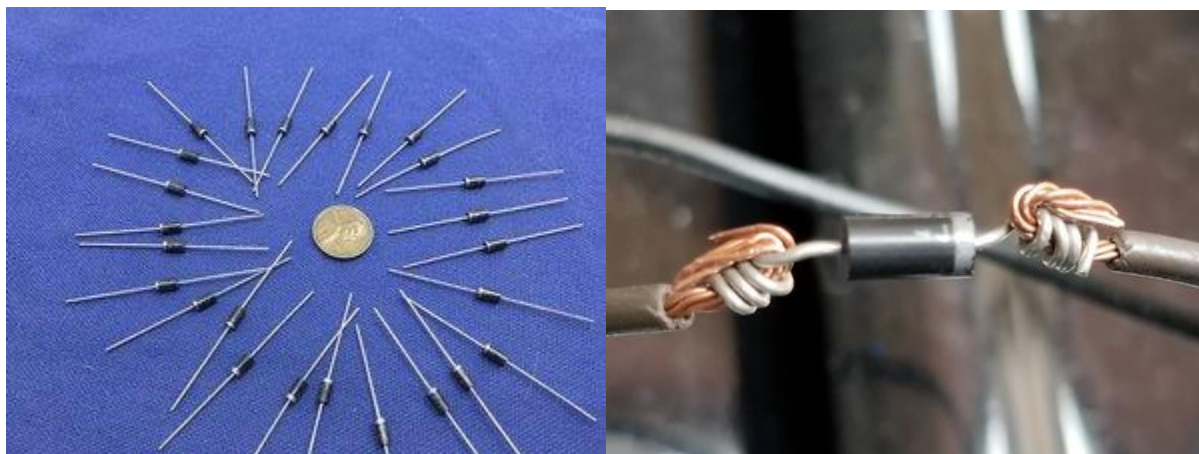
Also, I discovered that the alarm installer tied the alarm into the brown wire. Looking at the alarm installation wiring diagram, they should have tied it into the dome light circuit instead. What that installation supposed to do is to set off the alarm if someone opens the door. Instead, it was tied to the brown wire. Since the problem went away when the ignition switch was turned on, I never noticed the problem.

Since there were three different sources to unwanted voltage to the brown wire set off by different circuits, it took me a long time to isolate all of the wiring problems.

Solution:

I searched for similar issues on the internet and car boards and couldn't find a similar issue involving the brake light. I accidentally came across a You Tube video of someone solving bleed voltage from installing brake light LED bulbs. He also mentioned that the dash lights and chime went off. It struck me that I had a similar issue and that his solution could work for me. He solved the problem by installing small rectifier diodes on the wires that were receiving the unwanted voltage.

I bought a 25 pack of 1.5a 1000v rectifier diodes for about 65 cents each. Radio Shack also sells these. Note that one side of the diode has a silver strip which serves as an arrow head and should be installed with the wanted current flowing towards the silver striped end of the diode. Here are some pics of what the diodes look like and installed (before solder & heat shrink):



I installed a diode on the brown wire at **each** LED bulb: Two (2) on each rear brake light housing, and one at each turn signal bulb on the front bumper. Just to be sure, I installed one on the wire from the alarm system.

Conclusion:

Anytime you find unwanted systems turning on, check for bleed voltage from other sources by reviewing wiring diagrams, researching car boards and the internet, and the process of elimination. Then install a rectifier diode into wires to block unwanted current. Note that these diodes come in different amp ratings for different loads.

Good Luck!