**DVZ report: 12-7-14 – Burnt Motor**

Motor fried when battery was plugged in. All components were connected except for the Odroid. When the battery was plugged in, the motor on top side of the back left arm started smoking instantly. The battery was immediately unplugged.

**Other Observations**

* Only cables not connected were
  + Odroid Power
  + Odroid to USB dongle
* The motor seems to have burnt only one phase. There are 4 windings burnt that are symmetrical.
* Motor was very warm afterwards, and the BEC was slightly warm.
* Pixhawk was undamaged – we connected to MissionPlanner afterwards through usb cable
* PX4Flow was undamaged – succesfully tested on Cerebro afterward
* Hokuyo was undamaged – tested with hectorSLAM mapping

**Possible Faults:**

* ESC failure – How do we test that this is still functional?
* BEC failure – Test that the BEC is providing proper power: 5V at 5A
* Pixhawk Voltage Regulator failure – Test that VR is providing proper power and no shorts
* Short in motor windings
* PDB short which sent power to one line of one motor, causing only the one phase to burn out.
* Somehow the Odroid power cable shorted against something on the frame, though this shouldn’t cause current to go to only one motor. ???

**Notes:**

It seems like a lot of current was sent through just one cable to one motor, since only 1/3 of the windings were burnt. I don’t understand how power was sent to motors at all since the Pixhawk was not armed. How would power be sent to just one motor?

How can we test first to make sure this won’t happen the next time we plug a battery in?