Daily Log

LM #6 - Drones

Nathan Bach, Donovan McHenry

Day 1: 1/2/23, 10:51am - 11:31am

Nathan & Donovan

They looked at the drone that had been previously built by students but hadn't been flown in years. Everything looked connected correctly, so they wanted to connect the flight controller to fly the drone to find what problems it might have. They found a video that used the same flight controller, but connecting it didn't work.

Day 1: 1/3/23, 10:51am - 11:31am

Nathan & Donovan

They then wanted to work on a broken drone brought in by a student. It was a DJI Phantom 2. First they needed to get the drone flying to see what potential problems the drone might have, like a messed up gyroscope or a motor not receiving as much power as the rest. They started looking for videos on how to calibrate and start the drone.

Day 2: 1/4/23, 10:51am - 11:31am

Nathan & Donovan

They found out they had to calibrate the drone first. After calibrating the drone they still couldn't figure out how to get the motors to turn on. They redid the calibration to see if it would work again.

Day 3: 1/5/23, 10:51am - 11:31am

Nathan & Donovan

They found an instruction manual online for starting the drone and getting it flying, which is what they should've looked for in the beginning. They found they had to take the left and right stick of the controller and push them to bottom corners towards each other. This was how to turn the motors on and off. They flew the drone off the ground for a second in the hallway.

Day 4: 1/9/23, 10:51am - 11:31am

Nathan & Donovan

They went to the courtyard outside to fly the drone. They flew the drone around but ultimately flew it into a picnic table and broke one of the propellers, luckily they had replacements.

Day 5: 1/10/23, 10:51am - 11:31am

Nathan & Donovan

They went back to the courtyard to fly the drone again and look for things that might be wrong with it. They noticed that the drone tended to go to one side, like it had more power on that one side.

Day 6: 1/11/23, 10:51am - 11:31am

Nathan & Donovan
They then downloaded DJI vision 2 assistant software to download firmware and software onto the drone to see if it was a software issue. But when they plugged in the drone it said an update for the controller was required, but there was no update available.

Day 7: 1/12/23, 10:51am - 11:31am
Nathan & Donovan
They then thought to try and do a hard reset of the drone. They looked for information on how to do this. Do to this they needed to take the drone apart to get to the inside. They got the drone open by the end of class.

Day 8: 1/17/23, 10:51am - 11:31am
Nathan & Donovan
They used the video below to hard reset the drone. This was done by connecting a wire between two pins inside the drone and causing a short.
https://www.youtube.com/watch?v=NyfuOB1Oa-g

Day 9: 1/18/23, 10:51am - 11:31am
Nathan & Donovan
They flew the drone after the hard reset, but the issue still occurred. They figured with the few remaining days they would instead research smaller programmable drones that Detrick could use in class and other students could use and learn with.

Day 10 - 12: 1/19/23, 10:51am - 11:31am
Nathan & Donovan
Donovan and Nathan researched various drones for Detrick to use in the future. They began by searching for the Morris County drone programs but couldn't find anything but a drone club with no description. They further researched arduino drones and found a few projects, however they seemed mildly sketchy. After looking through the arduino drones, they found DJI educational drones that could be used with Python and Arduino.
https://projecthub.arduino.cc/robocircuits/8cba8d5f-a49f-4096-a1c7-3aab83f93a7d
https://projecthub.arduino.cc/robocircuits/8cba8d5f-a49f-4096-a1c7-3aab83f93a7d#section1
https://www.instructables.com/Arduino-micro-Quadcopter/

At Home:

Nathan Bach
1/10/23
6:30 - 7:30

Nathan was researching ways they could update the software on the drone because that might've been an issue. He found out about the DJI assistant software, and what you were able to do with it. You could update certain things in the drone like the gps or controller, and also configure settings to your liking.

Donovan McHenry
1/3/23
5:00 - 6:00
Donovan took the drone home to find out how the DJI Phantom Vision app worked. At home, Donovan looked at videos to try to find out how to connect to the drone. While Donovan did learn how to connect to the drone properly the camera didn't work. After trying online fixes he couldn't find anything that would work. This was likely due to the app being heavily outdated.