



Pre-Flight Test

- Turn on laptop computer
- Plug in telemetry module
- Open APM planner software
- Turn on both radio control transmitters
 - Plug-in LCD + Video Receiver
 - Plug-in airplane's batteries
- Ensure all cables are in position before positioning wing
- Position and screw the wing
- Aileron check
- Elevator check
- Rudder check
- Range check -> video and radio control
- Check stabilize mode compensation direction
 - Check airplane's balance
 - Review mission's waypoints
 - Final plane inspection before flight
 - Take-Off

Flight Test (maximum duration of 10 minutes due to SFU security)

- Circle around the field while trimming the airplane
- Activate stabilize mode
- Activate return to landing mode

- Activate auto mode
- Activate manual mode
- Land

Quick Glossary

Telemetry module – Wireless interface between PC and airplane, allows 2-way transmission of GPS coordinates as well as change of flight parameters on site.

APM planner software – Open source program designed specifically for the autopilot system used (ARDUPILOT).

Radio control transmitters – Wireless device that allows surface control.

Range check – Common practice used to check that the airplane is working normally

Aileron – Control Surface that allows the plane to roll

Elevator – Control Surface that allows the plane to go up and down

Rudder – Control Surface that allows the plane to turn

Airplane balancing – Setting up airplane's load so that it sits on the center of gravity of the plane

Trim airplane – small control surface adjustments to make the plane fly straight

Mission's waypoints – GPS coordinates programmed into the autopilot

Auto mode - Autopilot mode that when activated, flies the plane through the mission's waypoints

Stabilize mode - Autopilot mode that when activated, completely stabilizes the aircraft into a straight flight

Return to landing mode - Autopilot mode that when activated, autonomously flies the airplane back to the launching site

Manual mode - Autopilot mode that when activated bypasses the onboard autopilot and gives direct control