Micro-UAV Safety Guidelines & Checklists

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Disclaimer: The guidelines and the checklist are for *educational purposes only* in the course ROB498. All the flights should be conducted in room MY580 under the supervision of the professor / TA(s). Individual and/or outdoor flights are NOT ALLOWED; outside flight would very likely lead to violation of the law as defined by Transport Canada.

Please read this document carefully! It is recommended to keep a hard copy of this file on hand while working on/flying your drone. Failure to follow the safety rules/guidelines could cause serious injury to personnel or damage to the Myhal building and equipment.

Safety Guidelines (while working on your drones):

1. Charging the battery:
   Battery type: **LiPo (4S),** Charging Current: **no greater than 2.3 A**.
   Different charging settings may reduce battery life or even cause a fire.
2. Assembling the drone:
   - Exposed PCBs and solder joints should *not* be in contact with the carbon fibre frame (may be conductive).
   - Always ground/discharge yourself before touching any exposed PCBs.
   - Make sure all the screws are properly tightened as vibration during flight will loosen them.
   - Be very careful with the fragile white JST connectors.
   - Make sure the flight controller (Pixhawk) is tightly attached to the frame, fairly close to CG. If you have to install the Pixhawk in a direction other than the forward-pointing direction, please configure this setting in QGroundControl.
3. Testing the motors:
   - **Never install propellers before the aircraft is flight-ready!**
   - Be careful with long hair that can become intertwined with motor shaft.
4. While other teams/drones are flying:
   - **Never** turn on your transmitter (The Taranis remote control) as this could cause signal interference.

Pre-Flight Checklist

Please follow in sequential order. **DO NOT plug in the battery first**.

Aircraft Check

- ☐ Propeller direction check.
- ☐ Propellers are installed tightly on the motor shafts.
- ☐ The battery is fully charged and tightly strapped down.
- ☐ All components are tightly attached to the frame.
- ☐ All wires are clear from all propellers and the propellers spin freely.

Aircraft Start-up

Action: Transmitter Start-up

- ☐ The *Throttle Stick* & *Arm Switch* are in the down position.
- ☐ *Flight Mode Switch* is in the take-off position.

Action: Battery Plug-In

- ☐ Transmitter signal strength confirm.
- ☐ Arm/disarm check.
- ☐ Manual fail-safe switch check.

Team & Surrounding Area Check

- ☐ Flight area cleared.
- ☐ All team members are wearing safety glassed.
- ☐ Protection net has been secured.

Post-Flight Check

- ☐ Keep the transmitter turned on with disarm / fail-safe switch active before unplugging the battery.