

PROHAWK INSTRUCTION GUIDE



Congratulations on purchasing the ProHawk unmanned aerial system. This guide is meant to help you unbox your new drone and get started using it safely and effectively. Before beginning to use the drone, please read the following warning and familiarise yourself with the relevant laws and regulations in your area of intended flight.



There is pending legislation through which the Federal Aviation Administration would require all unmanned aircraft be registered. Check <https://www.faa.gov> for the latest advice, status of this legislation and registration details.

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*** It is highly recommended that ALL pages in this manual be thoroughly reviewed before flying the ProHawk.**

Even the most experienced pilots allow themselves time to become familiar with a new aircraft and control system.

WHAT'S INCLUDED
 for users of the ProHawk drone

1. Unboxing the ProHawk

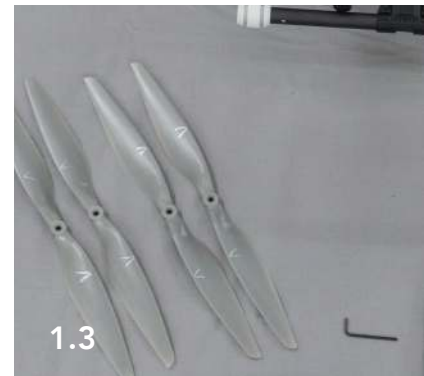


1. Fully assembled ProHawk Drone Unit Unmanned Aerial System
2. Bird X Vermin/Pest Disperser Polyphonic Speaker Unit
3. Taranis *plus* Remote Control Transmitter
4. Taranis Charger 15v AC Power Adaptor
5. Hyperion EOS720i Intelligent Battery Charging Unit 150W; Charge/Discharge/Balance LiPoly; Lilon; LiFe; NiMh; NiCo; Pb
6. Tattu 10,000mAh Rechargeable Battery
7. Dual Antennae (signal diversity optimization)
8. 14" Propellers x 4
9. Prop Wrench
10. Travel/Storage Case with Custom Cut Foam (TSA approved for simpler baggage check during travel)
11. Neck strap to hold your Taranis Controller

SETTING UP: FLY-READY GUIDE

for users of the ProHawk drone

2.1 Attaching the Props



Step 1. Identify the attachment parts (1.1, 1.2), propellers, and prop wrench (1.3)
* Propellers have sharp edges! Please handle with care.



Step 2. Use the prop wrench to attach the propellers (2.1)



Make sure that the propellers are being attached correctly (2.2)



Correct configuration is achieved when the "V" on the prop and the "V" on the drone are both facing the same direction (2.3)



MAKE SURE THE PROPS ARE PLACED PROPERLY AND FULLY TIGHTENED BEFORE ATTEMPTING TO FLY.

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SETTING UP: FLY-READY GUIDE

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2.2 Positioning the GPS



Raise the GPS Mast (from storage position into fly-ready position). **DO NOT** touch the circular GPS unit atop the mast, since any alteration in its mounting orientation (relative to the mast) can result in GPS issues. Such issues will lead to malfunction of any/all GPS-based flight modes (Auto, Loiter, RTL). Instead, grasp the metal shaft of the GPS Mast at its base to raise into an upright position. Tighten the nut to secure in place.

2.3 Securing the Battery



Locate the battery casing. Slide the battery in its casing and secure it with the velcro strip. See Taranis controller steps before connecting power to the ProHawk. For battery charging and care, see Section 6 of this guide.

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TARANIS CONTROLLER STEPS

for users of the ProHawk drone

3.1 Taranis Basic Flight Control

Become familiar with all (default shipped) active switches, the varying positions of each, and the corresponding function of each position per switch. Become familiar with the two main control sticks and the corresponding flight maneuver. Once you are familiar with Taranis flight controls/switches, follow the steps in 3.2.

Please visit the glossary at the end of this manual for additional detail/definition on each term.



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TARANIS CONTROLLER STEPS

for users of the ProHawk drone

3.2 Sound Control with the Taranis Controller

Follow the steps below to fly the ProHawk with sound activated. Note the placement of the Fail-Safe Land switch and the ProHawk noise maker.

1 Ensure all switches are in their most downward position (toward the operator)

2 Learn and memorize the default switches and their positions

3 When prepared for flight (after 1 & 2), turn Taranis ON

Bird Noise Maker is left side switch

ARM ProHawk by pulling throttle fully down and right

4 Double-check that your ProHawk is ready to fly and the area is clear. **If ready, press the PRE-ARM button, located near the ProHawk's battery**

5 Initiate the ARM position on the throttle of the Taranis

6 Lift off and fly! Use the left-hand switch to control sound emissions during flight



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FLIGHT

for users of the ProHawk drone

4.1 Get Ready to Fly

A successful flight is a safe flight. We encourage you to follow the below as a guide for safe flight, but also suggest that you regularly check for new guidance and regulations via the Federal Aviation Administration website. As a rule, we recommend the following:



Only Fly in Open Areas: Always fly in locations that are clear of buildings, trees, power lines, and other obstacles. Never fly above or near people.

Maintain Control at All Times by keeping your hands on the Remote Controller even when using autopilot functions.

Maintain Line of Sight at all times.

Monitor Your Altitude: Fly at altitudes less than 400 feet (120 meters) above ground level, or in line with your local laws and regulations.

1. Ensure all previous steps have been properly executed (props tightened, GPS upright, etc) and the ProHawk is ready to fly.
2. Connect the battery to provide power to the ProHawk
3. **Wait and Listen** for the Flight Computer to beep. **Wait for 3 total beeps.** During this time, avoid moving or touching the ProHawk entirely as well as any controls on the Taranis.
4. Once all 3 beeps are heard, the operator can now PRE-ARM the drone using the button located near the battery.
5. Clear the area (>5 ft from the ProHawk).
6. Initiate the ARM positioning on the Taranis throttle until the motors/propellers start spinning, then release.

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MISSION PLANNER

for users of the ProHawk drone

5.1 Planning Your Flight

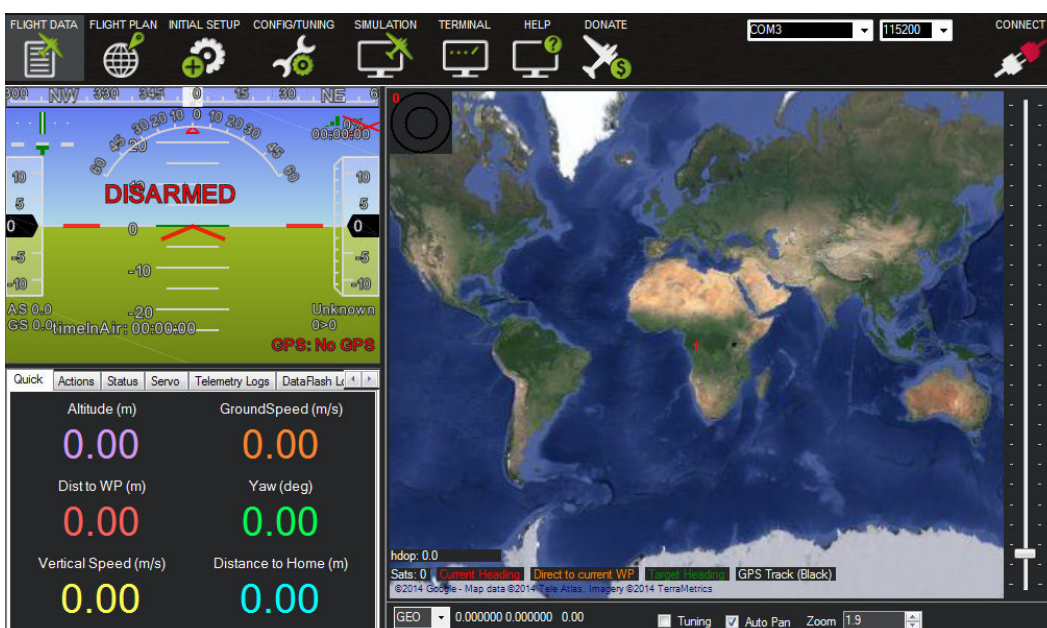
The ProHawk unit is designed to be piloted by way of manual control, as well as via an auto-piloting waypoint system.

The ProHawk is set up to work with **Mission Planner**, a ground station application for the ArduPilot open source autopilot project. By default and this is the recommended waypoint software; use of waypoint planner software outside of Mission Planner is not recommended and doing so is at the risk and liability of the owner of the ProHawk unit.

Before flying, begin your auto-pilot waypoint training with Mission Planner at the link below. Here you'll find a comprehensive overview of use and best practice for getting the most out of Mission Planner.

<http://planner.ardupilot.com/wiki/mission-planner-overview>

When you are ready to use Mission Planner, connect the telemetry receiver to the computer running Mission Planner.



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6.1 Battery Care

The ProHawk uses a **Lithium Polymer (LiPo) battery** as its main flight battery. The battery is a TATTU brand four cell (14.8V) pack with a 10,000mAh capacity and a discharge rate of 25C. Generally, LiPo batteries have a great deal of electrical energy for their size and should be handled with care.



Always keep the battery away from flammable objects. 1C is the recommended charge rate. Never charge above 2C.

Never disassemble or modify pack wiring in any way or puncture cells.

Never exceed the maximum of discharge rate or load.

May explode if damaged or disposed of in fire.

Store long-term at 3.8V per cell. Avoid unnecessary charging and cycling.

Disclaimer: You declare that you have read and understood the safety instructions before use and you agree to take the full responsibility of results caused by improper use.

For further study on the proper care, handling and use of LiPo batteries, we recommend an article published by the Academy of Model Aviation: LiPo Batter Basics - Understanding the technology and its safe use.

This four part article and accompanying videos presents all the current information on LiPo batteries and can be found here: <http://www.modelaviation.com/lipo1>

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6.2 Charging the Battery

The Hyperion EOS 0720! Net3 AD charger has been set up at the factory to charge the 10,000mAh ProHawk batteries. Connect the main power lead and balance connector of the battery to the charger and press the "Enter" button while following the prompts to start the charge. Detail on the EOS 0720! Net3 AD can be found in the included PDF manual (EOS0720NET-MAN-EN12.pdf).



WARNING – NEVER FLY THE PROHAWK CRAFT BEYOND THE RECOMMENDED BATTERY CAPACITY.

Catastrophic failure will result, including severe damage to or loss of craft. Allow a safe margin and never fly more than 20 minutes total before re-charging the battery fully. Be sure to account for the reduction of flight time due to wind-speed and other conditions that may affect total flight time.

If in doubt, bring craft safely to ground as soon as possible.

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