# Ipswich Whoop Club Inc.

## SAFE LiPo BATTERY HANDLING GUIDE

Version: June 2026

Ipswich, Queensland, Australia

*All IWC members must comply with this guide at all club events. Failure to do so may result in exclusion from the event and disciplinary action.*

## 1. INTRODUCTION

Lithium Polymer (LiPo) batteries are the standard power source for FPV whoops and drones. They store large amounts of energy in a compact, lightweight package — which is exactly what makes them ideal for flight, and also what makes them require careful handling.

When treated correctly, LiPo batteries are safe and reliable. When mishandled — through overcharging, physical damage, short circuits or improper storage — they can swell, catch fire, or in severe cases explode. LiPo fires burn intensely and produce toxic fumes.

■ **This guide is mandatory for all IWC members. These are not guidelines — they are requirements that must be followed at all club events.**

## 2. UNDERSTANDING YOUR BATTERY

### Key specifications

- **S-rating:** Number of cells in series. 1S = 3.7V nominal; 2S = 7.4V nominal.
- **Capacity (mAh):** How much charge the battery holds. A 300 mAh battery holds 0.3 Ah.
- **C-rating:** Maximum safe continuous discharge rate (e.g. 30C at 300 mAh = 9A max).

### Voltage reference

Use this table to understand your battery's state of charge:

| State | 1S (1-cell) | 2S (2-cell) |
|---|---|---|
| Full charge | 4.20V | 8.40V |
| Storage voltage | 3.80 – 3.85V | 7.60 – 7.70V |
| Minimum safe | 3.50V | 7.00V |
| **DANGER — do not fly** | **Below 3.0V** | **Below 6.0V** |

## 3. STORAGE

**3.1** Store batteries at storage voltage (3.80 to 3.85V per cell) if they will not be used within 24 hours.

**3.2** Always store batteries in a LiPo-safe bag or an ammo can.

**3.3** Store in a cool, dry place away from flammable materials, ideally between 15 and 25 degrees Celsius.

**3.4** Never store batteries in direct sunlight or in a hot vehicle. Dashboard and boot temperatures can far exceed safe storage limits.

**3.5** Inspect batteries before and after every storage period. Dispose of any battery that shows swelling, damage or will not hold a charge.

**3.6** For long-term storage (several weeks or more), discharge to storage voltage using your charger's storage mode.

## 4. CHARGING

### 4.1 Equipment requirements

- Use only a quality balance charger specifically designed for LiPo batteries.
- Always balance charge — this ensures all cells are at equal voltage, extending battery life and preventing imbalance fires.
- Never use a charger not rated for the S-rating of your battery.

### 4.2 Safe charging procedure

- Always charge inside a LiPo-safe bag.
- Charge at 1C maximum (1 x capacity in amps). Example: 300 mAh battery = 0.3A charge rate.
- Never leave a charging battery unattended. Not even briefly.
- Allow batteries to cool for at least 10 to 15 minutes after use before charging.
- Do not charge physically damaged, swollen or deeply discharged batteries.
- Maximum charge voltage: 4.20V per cell. Never charge above this.

### 4.3 At IWC events

- The event organiser will designate a charging area. All charging must occur only in this area.
- Batteries must remain in LiPo bags while charging.
- Inform the event organiser immediately if you notice any battery abnormality during charging.

**■ Never leave a charging battery unattended. This is the single most common cause of LiPo fires.**

## 5. TRANSPORT

**5.1** Always transport LiPo batteries inside LiPo-safe bags.

**5.2** Never transport loose or unsecured batteries. Terminals must be protected to prevent short circuits.

**5.3** Keep batteries away from metal objects, loose tools, keys or other conductive items during transport.

**5.4** Do not transport batteries in parts of a vehicle exposed to extreme heat.

**5.5** For air travel: check current airline and CASA regulations. Most airlines restrict carry-on LiPo quantities and require batteries to be at storage voltage. Always check before flying.

## 6. AT IWC EVENTS — QUICK RULES

✓ **DO: Use your LiPo bag at all times.**

✓ **DO: Charge only in the designated charging area.**

✓ **DO: Report any battery concerns to the event organiser immediately.**

✓ **DO: Allow batteries to cool between flights before recharging.**

✓ **DO: Discharge to storage voltage at the end of the session.**

■ **DO NOT: Charge a battery unattended.**

■ **DO NOT: Use a battery that is damaged or swollen.**

■ **DO NOT: Fly a battery below minimum safe voltage.**

■ **DO NOT: Leave batteries in hot cars or in direct sunlight.**

■ **DO NOT: Handle batteries near food or drink.**

## 7. WARNING SIGNS — STOP AND ACT IMMEDIATELY

Remove a battery from use immediately and inform the event organiser if you notice ANY of the following:

- Swelling or puffing of the battery casing — even slight puffing is a serious warning sign.
- Any visible physical damage, puncture, dents or crushed cells.
- A chemical, sweet or burning smell from the battery.
- Unusual heat after a flight — more than warm to the touch.
- Sparking or arcing when connecting the battery.
- A battery that will not take a charge or immediately shows full voltage then drops.

■ **Place the suspect battery in a LiPo bag and move it to an open outdoor area away from all flammable materials. Do not put it in an enclosed space. Inform the event organiser.**

## 8. IN AN EMERGENCY — BATTERY FIRE

■ **LiPo fires burn at extremely high temperatures and produce toxic fumes. Do not inhale smoke. Evacuate and stay well clear.**

If a LiPo battery catches fire, follow these steps in order:

**Step 1:** Shout "FIRE" loudly to alert everyone in the area.

**Step 2:** Clear all people from the immediate area. Keep spectators at least 10 metres away.

**Step 3:** Do not attempt to pick up a burning battery with your hands. If safe to do so, use metal tongs or a shovel to move it to an outdoor area clear of all flammable materials.

**Step 4:** Use dry sand or a Type D fire extinguisher to suppress the fire. Do not use water — water can cause a violent reaction with burning lithium.

**Step 5:** Call 000 if the fire cannot be controlled or begins to spread.

**Step 6:** Report the incident to the committee after the event. A written incident report may be required.

■ **A LiPo fire may appear to be extinguished and then reignite. Monitor the battery for at least 30 minutes in a safe location after the fire appears out.**

## 9. BATTERY DISPOSAL

Do not dispose of LiPo batteries in household waste, recycling bins or general rubbish. Damaged or end-of-life LiPo batteries must be properly disposed of.

- Discharge the battery to 0V using your charger's discharge function before disposal.
- Once fully discharged, place in a LiPo-safe bag.
- Take to a battery recycling point. Many electronics retailers accept LiPo batteries for recycling, including Officeworks and Battery World.
- Never puncture or cut open a LiPo battery to attempt to discharge it.

## 10. QUICK REFERENCE

Cut out or screenshot this section as a ready reference for events:

| CHARGE | STORE | FIRE |
|---|---|---|
| In LiPo bag Balance charge only 1C max NEVER unattended | 3.80-3.85V/cell In LiPo bag Cool + dry location No hot vehicles | **Shout FIRE Clear area Sand or Type D ext. Call 000 if needed** |

*Ipswich Whoop Club Inc. | LiPo Battery Safety Guide | June 2026*

*Mandatory for all members at IWC events | Contact: ipswichwhoopclub@gmail.com*