

Safety Buzz from Satow Field, March 2020

Lithium Polymer Batteries, GASP! Not that subject.

Much information is available out there. Please take a moment to look at the AMA site.

<https://www.amaflightschool.org/getstarted/lipo-battery-basics>

To get us thinking, here are some significant points that many sources consistently make for using LiPo batteries:

- 1) Use a safe containment system. A pasteboard box is tinder. Lipo bags will help contain a runaway battery. Any sealed box (e.g. ammo box) will need a vent hole somewhere to release gas, otherwise, you have a bomb.
- 2) Use an appropriate charger. Most modern chargers are watching your back. Try to make a habit of balance charging for safety sake and to extend battery life. Do not over-charge (or over-discharge as in flying a battery “forever”).
- 3) Establish a safe charging environment. NEVER charge unattended batteries. It’s best to charge over concrete and away from everything. I recently noted a suggestion to use two buckets, charging batteries in one and the other full of sand, ready to dispense over the batteries should a problem arise. A small LiPo fire can be subdued with a fire extinguisher (CO2, ABC) realize that the battery will most likely continue to burn once it starts. The extinguisher will put out the coffee table, not the battery. A class D extinguisher is excellent, but is fairly expensive and inappropriate for other fires.
- 4). Do NOT ABUSE your battery. Excessive discharge produces heat (an enemy) and speeds aging. You should not discharge your battery below the manufacturer’s recommended levels, generally about 35%. Allow a hot battery to cool off prior to re-charging.
- 5) Do not use a “puffed battery”. LiPo batteries are going to “puff” as they age and more so as they are abused. It’s the result of electrolyte decomposition. As you use your battery, lithium and oxygen are created and lithium oxide migrates between the anode and the cathode alternately between use and charging. Excess oxygen will not deposit and accumulates causing “puffing”. OXYGEN IS VERY FLAMMABLE. Puffed batteries are more susceptible to fire when they are being charged or when they are physically impacted and most especially pierced. Not all and maybe even most puffed batteries will not cause an issue. What are you willing to risk...a new battery is cheaper than a new house?
- 6) Store batteries in Storage Mode. And in an appropriate container. Storing fully charged batteries increases the likelihood of trouble and shortens battery life.
- 7) LiPo batteries do not last forever and they CAN NOT BE REPAIRED.
- 8) Discard batteries appropriately. Maybe we should consider a club disposal day each year. Pre-discharge and then soak in salt water and move to an appropriate recycle facility.

“Watch your prop”

Chuck