2016 Bronze Propeller Competition - Battery Pack Performance Data
November 24, 2015

This document outlines the measured 2016 competition battery pack performance. The data was obtained using a computer controlled battery analyzer operating at room temperature (~75 deg-F). The battery was properly cycled and charged prior to all testing. Tests were performed two or three times, at the same current level, to check repeatability.

Battery Pack Information
- Type - Thunder Power Magna Series LiPo pack
- Pack Composition - 3-cells connected in series
- No-load Operating Voltage - 11.1V
- Size & Weight - approximately 0.6” x 1.25” x 2.3” and 1.5oz

Test Data
- Current/Load Examined - 5 Amps, 10 Amps, 15 Amps, & 20 Amps
- Data - the plots (below) show pack voltage as a function of Milliamp Hours - mAh (or time if you divide by the noted current)
- The cutoff voltage for these batteries is 9V.
- Two batteries were used on all graphs.
NOTES & WARNINGS!

- Do not plan on running your pack at currents above 15 Amps - clearly they perform poorly at above 15-Amps
- Temperature impacts battery performance (high ambient temperatures and/or poorly ventilated installations can notably diminish battery performance – consider this aspect during design)
- A specific competition Electronic Speed Control (ESC) may be required to protect batteries and to simplify purchasing (watch the web page for additional information)

References
If you are interested in learning more about batteries the following websites have great information and references:

http://batteryuniversity.com/learn/article/lithium_based_batteries

http://www.buchmann.ca/default.asp