

Ready for Flight Tests

March 18, 2017

LGWII (Little Great White 2), eParrot and RToucan (modified for the third time) are ready to be flight tested.



Technical data of LGW II (above):

RTF weight with 3S 2200 mAh battery: 850 grams (30 oz.)

Wings area: ~400 in², wings loading 10.8 oz./ft², 18% airfoil and no flaps

Launch RPM: 9,700

Lines length (eyelet-to-eyelet): 55 feet

ESC: Cobra 40+

Motor: Cobra 2814/12

Propeller: APC 10x5.5 EP

Timer: KR governor set for 31 seconds start delay, 2 minutes of flight and gain=3. *Cont'd next page*

Comment: 2 minutes is set only for the initial flight. Once the battery usage in flight is known, the time of flight will be set accordingly. Gain=3 allows the motor to increase the power when the model is flying up. Gain can be set between 1 and 7 and will be selected after test flights.

LGWII is built using three types of structural materials: PFP (paper-foam-paper) board, balsa and grey, 3 mm. thick Depron. The wings are covered with yellow Coverite Microlite and the rest of the structure with SLC covering.



Technical data of eParrot (above):

RTF weight with 4S 2200 mAh battery:1275 grams (45 oz.)

Wings area: 565 in², wings loading 11.48 oz./ft², 22% airfoil. Small aileron has been added to the outside wing to trim the roll angle. The gap between wings and flaps is sealed with stabilized nylon.

Launch RPM: 9,300

Lines length (eyelet-to-eyelet): 60 feet

ESC: Cobra 40+

Motor: Cobra 2820/12

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Propeller: APC 11x5.5 MRP with small hub, weighting 17 grams.

Timer: KR governor set for 31 seconds start delay, 2 minutes of flight and gain=3.

These parameters will be modified after test flights.

EParrot has the PFP wing, balsa fuselage and is colored using permanent markers to simulate the coloring of the Macaw parrot. SLC was used to cover the entire model. Large and easily removable cabin allows to access the electric and electronic components and the flaps horn. The elevator horn is easily accessible also. EParrot can have two types of landing gear: wire "struts"(shown on the photo) and carbon composite flat spring. Both, LGWII and eParrot have the empennage structure built using the sandwich made of the PFP core foam skinned with 0.8 mm. medium balsa.



Technical data of Rtoucan (above):

RTF weight no fuel: 1942 grams (68.5 oz.)

Wings area: 650 in², wings loading 15.2 oz./ft², 21% airfoil. Small ailerons have been added to both wings to trim the roll angle.

Launch RPM: 8,300

Lines length (eylet-to-eylet): ~62 feet

Engine: Evo60NX modified for C/L with custom made muffler

Propeller: MAS 13x4

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RToucan has been extensively modified by rebuilding of the entire front section of the fuselage.

The engine mount has been reinforced and the partial cowl installed.

Evo60 NX has tremendous power and required large, custom made muffler to decrease the noise below the allowable level. I expect more work regarding taming of this engine for the C/L stunt and fine tuning its RPM v/s power and torque characteristics.

Because of relatively high wings loading, the plane has good wind penetration properties. The historical data based on 25 years of Stunt News published results, indicate that the wings loading of high end stunt planes falls between 11 and 13 oz./sq. ft. RToucan has the wings loading around 15 oz./sq. ft and this means it must fly 7-10% faster, with expected lap times within 4.9-5.0 seconds range.

These three models, each representing a different design philosophy, should allow me to understand better the Art of Stunt before building my future flagships with RoJett76 and Black Tiger electric motor.

I will write a separate article in which I will describe in details what I did to learn to fly a decent C/L pattern at the age of 69 starting from scratch at the age of 66.