

The Flying Times

The Official Newsletter of the Valley RC Flying Club

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Editor, Randy Ryman, rryman@adelphia.net
Publisher, Mike Reno, jmreno@ntelos.net

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Pres's Korner

Another month has gone by. Fall is in the air. Corn has disappeared from the field. No more long hunts for planes grabbed by the corn.

This month I think I will talk a little about Electric flight. I'm quite new to it and wish to express some of the frustrations I have. First I guess is motor size. At first I thought that size 400 was a gauge of performance an electric motor could do. But I found out that that is only the Metal case size. I guess it could roughly indicate power but from all the ads I see about what how good they perform, I have very big doubts about their bragging. The next thing I noticed was a rating called KV. Being from the Electronic Industry I at first thought that meant Kilo Volts. But, somewhere that was mentioned to mean Turns Per Volt. At first that seemed to be a reasonable assumption of performance, but putting things together that would mean a 1100KV motor would rev up to 12,800 rpm, but prop size is not mentioned. I realize that a brushless motor will try to maintain an RPM consistent with the frequency that is being fed to the 3 phase motor. If that is the case the current will vary depending on the size of the prop. If that is the case there needs to be more information such as total current the motor will withstand without letting out all the smoke that is stored inside. The next rating I'm starting to see is Wattage which is a start in the right direction. That figure will give you the limit that the motor can reach before letting out smoke. It also lets you determine what current is allowable when using various sized packs. I.e.: 3 times the current is allowed for a 1 cell as compared to a 3 cell Li-Po, provided the wires can carry it.

Time is going to tell, but I think it will all get sorted out as I believe Electric flight will continue to grow and eventually become the mainstay of R/C flight.

I do hope they will put more safety features in motors, ESC's and Li-Po batteries. I had the experience of having an electric go down with the motor still active when it crashed. Well the motor was locked in stop by the propeller and the motor just got hotter and hotter until it melted the motor gearbox mount. Maybe a Locked Rotor current spec. value, which could be set in the ESC would shut the ESC down. This locked rotor also caused the plastic shrink wrap around the ESC to

shrink to the point that it split end to end which made it come off. That in turn allowed the heat sink on the switching transistors to fall off. I don't know if I still have a functioning ESC or not. I'm lucky that the battery didn't explode. The battery is OK. To have a heat sink fastened only by heat shrink tubing and thermal compound (between the transistors and heat sink, does not stick anything together, is just to transfer heat to the sink) is very very poor design. In all my electronic experience heat sinks are fastened with nuts and bolts to the transistors / triacs etc. . Have a flying good time this month..

Pres. Dave..

Meeting Notice

The October meeting of Valley RC Flying Club will take place Tuesday, Oct. 3rd, at the Bridgewater Church of the Brethren, 7:30 PM

Notice

Notice: The flying field restrictions take place as of Sept. 1. Please check the club website for the exact days and times we are permitted to fly.

Items For Sale

For Sale: Jack Stafford B-24 Liberator.

Specifications as follows:

90" wingspan, 13#. Built from kit, fiberglassed and painted.

4-O.S. .25FX glow engines, 3-blade

Graupner props and scale prop hubs.

Aircraft has flaps and Robart 605HD retracts.

Includes 12 servos, battery pack and switch.

Air pump for retracts not included. Requires minimum 6 channel radio.

Entire outfit including transmitter & receiver: \$1400.00

Less transmitter & receiver: \$1250.00

Call or email Randy Ryman: 540-434-2646

email: rryman46@adelphia.net

FOR SALE: Top Flite DC-3/AC-47 gun ship. Currently flyable. Ready to fly. 83" wingspan, IMAA legal. Has Robart scale retracts, operating flaps, 2 x OS .40LA engines, 9 servos. Everything except receiver. \$325.00 Great flying plane. contact Randy Ryman 540-434-2646

For Sale: OV-10 Bronco-buil and currently flying. Features Robart retracts, 2 x OS .25FX engines, scale cockpit and pilots. Includes everything except receiver. & transmitter. Great flying plane. Wing is covered with Worldtex and painted, fuselage and cockpit pod fibreglassed and painted. \$300.00 Contact Randy Ryman, same number as above..

Some thoughts on Retracts

I have noticed that some ARF planes are now coming with retract capability. Most are warbirds, which relegate this article to a select few club members, since warbirds in Valley RC are definitely in the minority. But, here is some info that some flyers should consider.

Pretty much all of the retracts I have seen that come with the ARF planes are "mechanical" retracts, meaning that they use a servo and linkage for their operation. "Pneumatic" retracts, on the other hand, are air operated and only require a servo for moving the retract valve to either the down or up position.

There also used to be electric retracts, but I don't know if they are even made anymore, so they aren't the focus of this article.

Opinions vary on the best type of retracts. Some prefer mechanical, some prefer pneumatic.

The mechanical retracts I have seen supplied with the ARF planes require a servo to operate the linkage. And they usually require a "retract" type servo, which will have enough torque to cycle the gear. A higher torque servo typically uses more current than standard servos operating say, a control surface. It

takes quite a bit of force to cycle the gear up and down.

Here is where you need to be really careful with mechanical retracts. With pneumatic retracts, if something happens that the gear doesn't completely retract into the wheel well, no harm no foul-All the servo does is move the spool the air valve about 1/4", and the servo is through, and off.

If a retract servo is connected to mechanical gear that does not completely retract, the servo may be left in a "stalled" condition, continuing to draw current from the battery pack. If it happens to be a retract servo, it may be draining significant amounts of current from your flight battery, especially if you are just using a standard battery pack. The only way you will know if this condition is going on while the plane is in the air is if you happen to notice that the gear is not fully retracted. Otherwise, the servo may continue to be stalled for the entire flight, and if it drains your battery during that flight, you will probably put the plane back into kit form, not having any idea why it happened, other than, "I just didn't have anything" or "Someone shot me down", or "It just went crazy on me". Pick one!

The point is, IF you venture into this area of modeling, I recommend increasing the size of the battery pack, for some added "Just in case" insurance, and also being ABSOLUTELY CERTAIN that the gear is functioning correctly on the ground, and keeping a close eye on it during the retraction to see that it is fully retracted. I have also seen some of this gear that did not have positive uplocks and consequently any positive "G" maneuvers would put a load on the retract servo, by gravity or "G" forces trying to pull the gear back out of the wheel well.

Retracts add another dimension to modeling. They also add a lot of realism to a model that is "supposed" to fly with the wheels up. We also proved some years back that the same plane with wheels retracted is quite a bit faster than with the wheels extended. Adding retracts is not difficult, especially if the airplane is already built for them, as some ARF types are. This is should be enough information to help should you ever get one of these models and want to go the retract way.

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