



Tale Feathers

July 2014

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Hi Club Members

Welcome to another issue of Tale Feathers.

The usual Disclaimer:

Articles and comments by the Editor and contributors may not necessarily reflect the views of the Club Committee, probably won't be Politically Correct, but will be published anyway.

HOUSEKEEPING

This newsletter is an information exchange and an open forum for anybody to have their say.

Please email stuff to me, (a Word, Excel or PDF document) be it technical, human interest, Club stuff, building/flying tips or if you just feel like a bit of a (polite) rant.

Photos (in JPEG format) are always welcome.

CLUB CORNER

The AGM has been and gone, elections held (non-event) and Committee positions filled for another year.

Congratulations to those brave souls who stood for re-election and welcome to the newcomers.

I'm very surprised and hugely disappointed that nobody wanted to wrest the Secretarial position away from my faltering grasp.

Just no figuring out some people!

Yet again, the tireless Dave has repaired the electric fence. The new white power cord stands out and he's

painted the uprights in line with the strip a distinctive orange.

Hopefully, with the new power system and re-wiring due to be installed shortly, the electric fence and the charge bench will be reliable and have plenty of capacity backing them up.

MEMBERS PLEASE NOTE:

Those who need to drop the end fences please re-erect them before leaving the field and turn the fence power back on. Otherwise, pass the responsibility to a competent, willing person.

We are all responsible for looking after the Club facilities and we all suffer the cost and inconvenience if those facilities are damaged by carelessness.

The same old rule applies:

Last one out each day checks; GAS OFF, FENCE UP & ON, CAT OUT, MICE IN, CLUBHOUSE LOCKED, PIT GATES CLOSED & MAIN GATE LOCKED.

Membership due. \$200 for Seniors, \$45 for Juniors, \$100 for Associates.

Direct Deposit available to:

Beyond Australia Bank, Wagga Wagga
Wagga Model Aero Club, Inc.

BSB: 805022

Account: 38700257

Please respect the fact that if you haven't paid your fees to a Committee member and obtained a receipt, you are not able to fly at the Club field.

Club Etiquette

#...Club rules say that casual visitors cannot be on the flight line with flying in progress. This rule is often relaxed in the interests of encouraging potential new members, but only if there are no other members flying at the time. Be safe, considerate and please take only the potential trainee; not the entire family-kids and dogs!

SAFETY COMMENTS

#...*Standing on the strip behind your model for take-off.*

Although this is not a particular criticism of the practice, please bear in mind that it can put you very much in harm's way when others are flying, particularly if a model has to land in a hurry and you're nowhere near the flight box to hear the call...

#...*Tuning your engine from the front or beside it in the prop arc.*

This rather common practice raises several safety concerns.

- You are reaching over the prop in a usually awkward position
- Your body is in front of/beside and very close to the spinning prop. (They do come loose sometimes or shed blades)
- Any loose clothing, Tx neck straps, dangling nooses, etc, can be drawn into the blades
- The model holdback device (of course you are using one) could let go without warning. (This has already happened once at the Club)

Try tuning from behind the prop arc where you can fiddle to your hearts content in relative safety.

#...*Electric Fence testing*

The Club has a device that hangs on the fence and flashes an LED if the power is off.

This is a much safer and less painful option to some testing methods used recently.

So far, we've have had the fence performance tested with fingers, hands, legs and foreheads. In the interests of keeping members in prime flying condition, these practices are not encouraged.



Not the abdominal snowman, but new member, Tim Hanby, dressed appropriately. Welcome to the Club Tim.



Recent Bronze Wings recipient and new Committee member, Jeremy Wilson.

FOR SALE



Park-Zone F-27Q Stryker

943mm span foam flying-wing with dual rudders & carbon spars. Hand launch. Ail, Elev, Rudd, Throttle.

In fair condition, this model flies very well, is stable, but can be fast and very agile. It will handle quite strong winds.

It is ready-to-fly and is supplied with;

- 2 x 2200 mAh 3S Li-Po's
- Several spare 6"x6" spare props

It will require a 4 CH Tx/Rx with flying wing setup.

\$80...call Ian, 0427 602 388

KAOS 60



(File photo only)

The tail dragger version is offered! Not the trike as shown.

Suits .60 to .75 nitro engines or electric conversion

This fully built-up version of the classic pattern model is very stable in flight and lands slowly.

Actual colour scheme is red wings & blue fuse. It has been flown a few times with a Fox Hawk .60, has never crashed and is in good condition.

The alloy motor mount is easily changed to suit the engine of choice, or instructions for an electric setup can be supplied.

Fuel tank & control runs are fitted & control surfaces are hinged. Servo mounts are for standard size servos with one central aileron servo in the wing.

\$80...call Ian, 0427 602 388

TECH TALK

Here are some random points that have come up recently.

Li-Fe batteries.



*Zippy 2-cell Li-Fe 6.6v 2100mAh
(Photo courtesy Hobby-King)*

Of the three main Lithium batteries currently available, these are by far the safest and make a good replacement for Ni-Cad and Ni-MH receiver packs. They are:

Very tolerant of rough handling and dumb charging practice. (Or could be dumb handling and rough charging)

3.3v per cell, so a 2-cell pack at 6.6v nominal voltage, can be used with most modern receivers and servos without a regulator.

They have an extremely flat discharge curve, maintaining a very steady voltage right to the end, when there is a very abrupt voltage drop.

This last property however, hides a couple of problems.

1...You can't easily check remaining capacity using the usual battery checker.

2...It's difficult to judge how many flights you can safely make before the voltage drops.

Due to the very small voltage drop with a Li-Fe under load, the usual battery checker cannot really cope with this and will show some odd readings that probably won't reflect the true state of charge of your battery.

Fix.

The only safe way to check capacity is to power up the model on the ground and exercise the servos for around 15 minutes. Then recharge your battery and note how much the charger puts back into it to bring it up to full capacity again.

The charger milliamp hour reading will give you an accurate consumption figure for the time the model was on.

Then some simple arithmetic will tell you how long or how many flights you can make while keeping a safe reserve to look after the battery and model.

All modern regulated chargers will detect the battery voltage and will charge very accurately, displaying the total of milliamp/hours replaced.

Important: For the best life from ANY of your batteries, you should never discharge them below 15% capacity.

Also note that Sanyo Ni-MH Eneloop batteries are an excellent choice for receiver packs, with very long shelf life and will safely supply the current required by Rx & servos in a large model. They are not very happy with high charge rates.

SERVOS-The eternal search for the ideal servo at the best price

We are really spoiled for choice these days. We can select from the range offered by the big three; JR, Futaba & Hi-Tec, but the first two are expensive (very?) and Hi-Tec just a little less so.

Still, they offer excellent, consistent quality and reliability, but if you aren't setting up a jet, a large-scale warbird or IMAC machine, then you might consider something cheaper.

Cheaper Alternatives

Hobby King is the usual place to go looking, but after you gaze in despair at page after page after page of the servos available, the mind gets a bit numb.

The three most common sizes available are:

Micro...12mm x 24mm x 24mm, or smaller

Mini...13mm x 29mm x 30mm, and

Standard...20mm x 40mm x 37mm

While these sizes are taken from the Hi-Tec charts, other makers are usually within a few mm's in their dimensions. Usually just enough to make a swap difficult!

Other options offered are;

Metal Gears...very strong, but they do wear more quickly than nylon. Only needed when high control surface loads are expected.

(Karbonite and fibre-reinforced gears are a very good option when metal is not really needed.)

Ball Bearings...These are fitted to the output shaft, just under the control arm. There can be just one BB to support the top of the shaft, but a second one at the lower end does a much better job of stopping any play or slop developing to affect the position of the control surface. Plain bushings (usually nylon) are cheap, but wear quickly.

Digital...Pro's: Digital servos will hold position 2 or 3 times more precisely than analogue types; will hold that position with a force greater than their power rating and will centre very accurately every time.

High torque is more important for most models, rather than super-fast speed.

Cons: Digital servos are more expensive and chew more battery power.

So narrow the choice a bit:

What are they going in and what job will they be

expected to do?



#...A smallish, floaty glider or small electric foamie won't need anything over about 1.5kg torque in a micro or mini-size servo and usually a lot less.

It can be analogue, have plain bearings and nylon gears, which will make it cheap, but still must be reliable, so be careful what brand you select. Do some homework.



#...The average 45-size nitro plane with fixed gear, has the room to fit standard-size servos, but a good mini-size jobbie will still work well.

For the forces involved with a model of this size, you might like to update the spec a bit to a standard size servo that has space for thicker (stronger) gears.

Be wary that while some of the mini servos boast impressive torque figures, the small size means that their small, very thin gears won't tolerate sharp, hard knocks before they strip teeth.

Knocking the control surfaces against hard objects is the main cause of stripped gears in models. If a servo can't handle excessive in-flight loads, it usually just yields position (blow-back) rather than stripping gears.

If your model behaves oddly in fast, tight manoeuvres, you could be getting blow-back and

should consider upgrading your servos to digital, metal gears and 2 ball bearings.

The cost (and battery consumption) will increase a bit over plain bearing, nylon-gearred, analogue servos, but the accuracy and strength will provide a lot of security.



#...60-size nitro and larger nitro or petrol models should have standard-size servos, preferably digital, with metal gears and dual ball bearings.

Digital electronics will give the accuracy, metal gears will give the strength and dual BB's the long-term freedom from slop.



#...Upscale EDF's, although usually no larger than a 45-size nitro model, should have digital mini servos with metal gears, dual BB's and >5kg TQ because of the speeds they can reach.

(A 90mm, 1.4m Viper Jet on 10S has reached 285 Km/h)

Once high speed is a factor, servo strength, centering and holding accuracy is vital.

Ask the experienced helicopter or IMAC guys how

many \$5, analogue, nylon gear, mini servos they have installed?

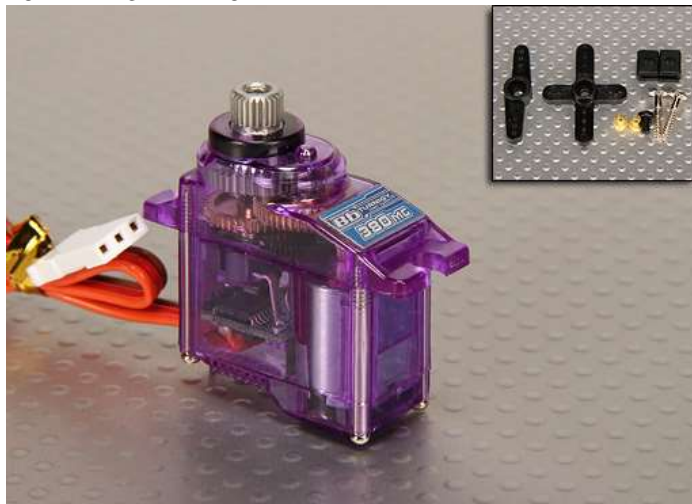
Servo information from my own experience:

With the bits for a 90mm Electric Ducted Fan project coming together, and the need to keep weight down, I have been hitting the Hobby King website looking for suitable servos that either have a lot of positive reviews from users, or those I have used in the past with success. Here are some of my findings out of the Turnigy barrel.

(These servos have either been flown extensively, or been exercised on the bench for a continuous 15-minute period with a servo driver set to auto.)

Note: It's always a good idea to exercise or run-in new servos before putting them into the new project. A servo driver is an excellent tool for this and setting up and centering each servo in the model without needing the Tx.

1...Turnigy 380MG Analogue Micro servo with metal gears (all except one-you can see them) and 3.6kg torque @6v. It weighs 15.6g and measures 26mm x 13mm x 26 mm.



(Photo courtesy Hobby-King)

Even though the first gear is carbon-reinforced nylon and there is only a single ball bearing for the output shaft, this is a strong, somewhat noisy little servo that fits tiny spaces.

It's large for a micro, but as a real bonus, the full-size metal output shaft takes Futaba arms.

I've been running them in my Shoe String electric racer for quite a while and have had no problems at any speed.

2...Turnigy TGY-390DMH Mini-size, Digital, Metal gears, 2 ball bearings, 5.4kg torque @6v. It weighs 22.5g and measures 29 x 13 x 30 mm.



(Photo courtesy Hobby-King)

Slightly bigger than the 380 and a true mini in size, this is a serious servo with all the good stuff including an alloy centre case that was still cool after a 15-minute exercise test on the bench.

It is fairly quiet, has very strong holding for its size, centres accurately and has a full-size metal output shaft with Futaba splines. At around \$30 it is not exactly a cheapie, but it is excellent value for the quality.

3...Turnigy TGY-778MG Digital, Slim wing, alloy case servo with 2 ball bearings, full metal gears and 5.5kg torque @6v. It weighs 23g and measures 30mm x 10mm x 30mm.



(Photo courtesy Hobby-King)

This also is a properly equipped servo. Despite a tiny 10mm thickness there are metal gears and 2 ball bearings on the output shaft stuffed in there. It runs very quietly and the full alloy case doesn't get warm after 15 minutes continuous cycling. Strong holding

and it centered consistently well.

The super-slim case means the metal output shaft is of the smaller size and will only take small Turnigy arms, although it comes with 3 nylon arms and 1 nicely made alloy arm.

It has a brother, the TGY-777MG that has the same specs, except that the case has three flat mounts for easy flat mounting. Good option.

4...Turnigy TGY-S712G Digital, Slim wing, alloy case servo with 2 ball bearings, full metal gears and 7.0kg torque @6v. It weighs 28g and measures 30mm x 10mm x 34.5mm.

Just as thin as the 778MG, this one has a slightly deeper case, presumably because of the higher torque rating.

It was slightly noisier than the 778MG in the bench test, but stayed cool and centered well.



(Photo courtesy Hobby-King)

Both the slim wing servos were priced around \$28-\$29 from H-K Australia, making them all a good quality choice, particularly the three digital ones.

By comparison, the excellent Hi-Tec 5125MG 10mm slim wing servo is \$55.80 from HHQ and the HS-5245MG mini (4.4kg TQ) is \$44.10.

(Unfortunately, I don't qualify for Cash-for-Comment graft and corruption yet, although I remain hopeful.)

...And on another subject entirely...



"I meant to do it. Really!"

Chinese Aviation philosopher, Confuse-us says:

We never really grow up; we only learn how to act in public. (Well...most of the time.)

Keep looking around before take off. There's always something you've missed.

People who say it cannot be done should not interrupt those who are doing it.



The name says it all!

"Temporary Insanity II"

TALE PIECE FROM THE CAT.



<http://go.funpic.hu>

"OK. I caught him. NOW what do I do, smart arse?"

Straight Take-offs, Soft Landings and stay away from the tyres.