



Tale Feathers

August 2013

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Hi Club Members

Welcome to another issue of Tale Feathers. I hope you will all find something of interest. Thanks for all the positive feedback. The negative stuff got ignored as usual.

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

Please remember that this newsletter is a non-political 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 rant.

Helps to have a bit of a rant sometimes, (as She-who-thinks-she's-being-obeyed likes to say.) Photos (in JPEG format) are always welcome.

(Animal/bird photos courtesy of the Editor. A range of Hi-res reproductions available on request.)

If the ad section seems bigger than usual, it's because nobody's buying anything! C'mon! Dig deep!

STILL FOR SALE



1x Futaba 14 MZ Transmitter with Futaba 2.4Ghz module – 7 Years old fully functional and in working condition

1x Futaba R6014 2.4Ghz 14ch Receiver

1x Futaba 36 Mhz TX Module

2x Futaba R5114 36Mhz 14 channel DPS G3 receivers

3x Futaba R149 9 channel Dual conversion receivers
Futaba Double Aluminum Carry case

All electronics in perfect working condition, looking to update after going overseas.

Please contact via email bjtucker23@gmail.com

Ed comment: this is a great radio. Help promote the swing away from the Dark Side.

ALSO FOR SALE

90N/9kg thrust Turbine, Kero start. Would suit a .75-1.20 size jet-type model 75" WS or up to 12kg/26.5lb weight.



Technical specification: EvoJet B-90

Thrust: Nominal-9kg/19.8lb @165,000
 Weight bare: 950 g = 2.1 lb.
 Diameter: 91 mm = 3.6 inches
 RPM: Idle-48,000 Max-165,000 rpm
 Exhaust gas temperature: 650°C - 750° C
 Fuel: 285g or 10oz/minute Jet A1, Kero
 Lubrication: 5% turbine oil in fuel
 Maintenance interval: 160.000.000 revolutions / 25 h run time

Engine features:

Electric on-board starter with fully-automated start sequence via the mini-ECU

Completely internal EGT probe and Kero start igniter.

Single fuel line for start and run.

This is a brilliant little turbine of superior German design and construction, so the rated power is quite conservative. It features easy plug-n-play wiring with single fuel-line hook-up and starts very easily and reliably.

It is a genuine German EvoJet engine.

These engines run with zero vibration!

Box contains: Engine with starter, JETRONIC ECU, Data Display Terminal and programming unit, precision fuel pump, electric fuel valve, manual fuel

valve, ample SMC 4 x 2.5mm clear polyurethane fuel tubing, alloy-body fuel filter, **safe** Li-Mn battery 3s 1100mAh, (charge as for Li-Po) fuel-tank clunk, cable set incl. switch, engine mounting clamp, mesh FOD filter, very detailed, plain-English Operating Manual.

This turbine engine, with ALL necessary equipment, is new-in-box & has not been run or installed in an aircraft. If the buyer is new to jets, all assistance and advice will be given with set-up, test-run and check-flying the aircraft. A limited quantity of safe turbine oil will be available if required.

Price. AU\$1,750. Will ship free within Australia in original shipping carton.

Contact: Ian on 0427 602 388

CNC Machined Electric Fuel Pump

Tired of cranking that hand-pump? Add some bling to that battered old fuel can. **\$30—one only**



Polished case, anodized pump cap, barbed brass fuel line nipples.

Voltage range: 4.8-6V DC

Flow rate: 1 litre/minute @6v with a 0.8m head-lift.

Full metal pump core for long life; fully enclosed & shielded motor to suppress interference. Wt. 159gm.

On-Off-Reverse switch on end of case.

Standard servo, 3-pin female battery plug fitted.

P-U sealing pump element makes it **compatible with both petrol & methanol fuels**.

Mounting bracket & pad included-no steak knives.

(After test-running one of these pumps for 25 mins continuously on a 2A/6v, 5-cell Ni-Mh battery, the case became only slightly warm. Very nicely made.)

\$30—New-in-box. Contact: Ian on 0427 602 388

A selection of discounted, brand-new gyros.

All are solid-state, (no moving parts) and can be turned On/Off or rate adjusted from your Transmitter.

Futaba GY401 single-axis Heli or aeroplane gyro



This gyro is new in original box.....\$90

Futaba GYA 351.....2 available



This is a single-axis, dual-servo output gyro suitable for any size aeroplane. It will drive one or two servos for roll or pitch control. Tx switchable.

New in box.....\$110 ea.

Futaba GYA 352



This very capable & reliable aeroplane gyro is dual axis, driving two servos. E.g. roll and pitch dampening. Tx switchable. New in box.....\$170

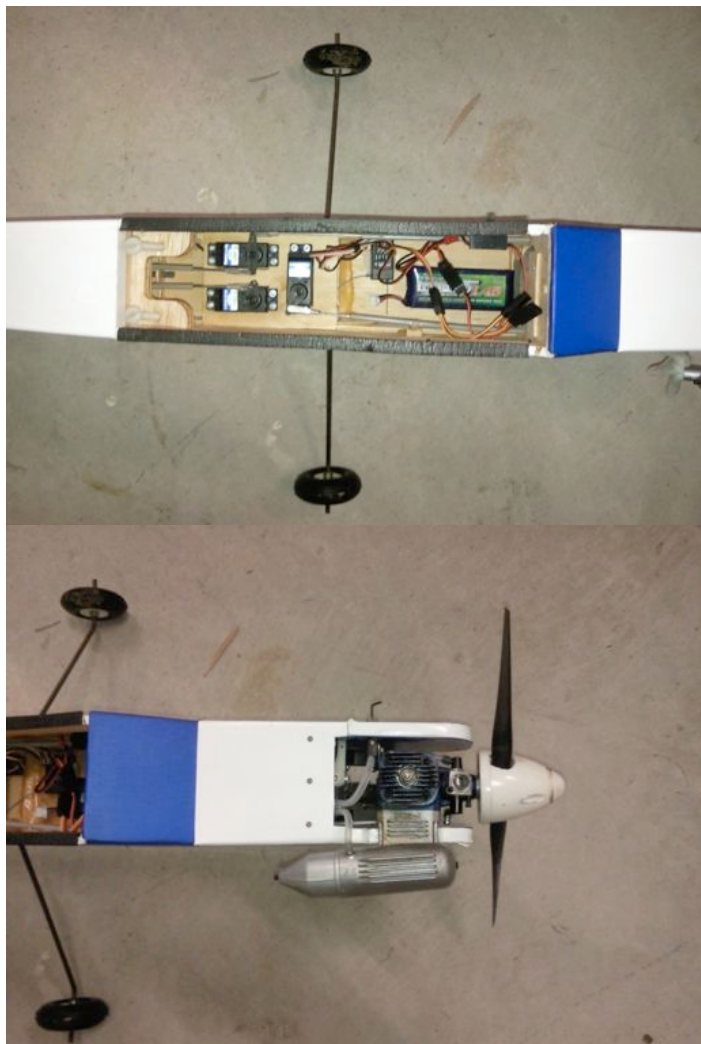
Offers considered-Contact: Ian on 0427 602 388

For Sale:
Great Planes PT40 Trainer—1520mm Span
OS46LA engine, 10x6 prop, E-sky
servo's, kit built.....\$120 ono

Excellent trainer with large dihedral wing for self correcting and flat bottom aerofoil for stable slow speed flying. Motor starts easily and runs well, all in very good condition.

Enquires: Tim De Haan 0409 809 473





HAPPY SNAPS-CLUB MEMBERS AND THEIR DOINGS



Chief Instructor at work.

“Hey Bill, who’s that strange dude taking our photo?”
 “Bugged if I know; but if we don’t look at him, maybe he’ll go away.”



Merv’s new model. Won’t have any trouble seeing it in the air.

(Yes, OK. That IS my finger in the foreground! We all have our moments. I’m just greedy and have more than most. Ed.)

Battery Tip:

If using Li-Po’s, always store, transport and charge them in a fireproof fiberglass pouch. Available cheaply from most Hobby shops including Hobby King. One might just save your house.

Do not charge them in your model!

News item!

On Wednesday, July 10, the Wagga Daily Advertiser had a short story about a house in Melbourne where a Li-Po battery, on charge in a bedroom, caught fire and damaged three other rooms. Repairs costed at \$100k-150k.

Li-Po Battery instructions, (you know, that bit of paper you toss away with the box) always recommend charging Li-Po’s in a safe place where you can watch them throughout the process.



Austin's Sky Raider. Flies very nicely.
(Digit deliberately removed!)

...And on another subject entirely...



"Bloody tourist! Go away! Can't you see I'm busy!"

(Red Panda doing what they do best)

Chinese Aviation Philosopher, Confuse Us says;
With an engine failure on a twin-engine aircraft, the purpose of the second engine is to supply enough power to reach the scene of the crash.

Airspeed, altitude or brains: Take your pick. Two are always needed to successfully complete the flight.

Bargain Buy of the month (from the canny shopper chappie, Mike)

Mike writes;

I just purchased a Phoenix Scanner from Model Flight, This a low wing 46 size model which normally sells for \$129 alone, is combined with an OS 46AX series II, for \$219 post free. All hardware incl. Just add radio gear.

Couldn't let it go!



Link below

www.modelflight.com.au/phoenix-scanner-arf-w-os-46ax-ii-engine-installed.html

(Hmmm! And I thought it was only the ladies who can't pass up a bargain? Perhaps this could be a Boomerang replacement? We do need some different models out there or at least some different colour schemes.)

More deals

Albury R/C Models are offering several package deals of engine, radio and aircraft. Not quite Hobby King, but Ken is as local as we can get these days and is a keen modeller, Check the website or call and mention WMAC for the best deals.

<http://www.alburyrcmodels.com.au>

TECH TALK

Over the next few issues, we'll look at some of the more common problems seen along the flight line, starting with engine hassles; pardon the pun.

It's a basic fact that if an engine has compression, the correct amount and type of fuel combined with the proper ratio of air, and has a healthy glow or spark from the plug at the right time, it will run.

If it doesn't, one of these elements will be incorrect or missing entirely.

Fuel System

Fuel brew

Fuel needs the correct amount of the Factory-recommended oil and nitro for glow-ignition engines. A small amount of nitro, 5-10% will generally make starting and idling easier on most glow engines. It should be filtered both into the can and into the model.

Tank & Fittings

When did you last inspect your tank for proper clunk action and the integrity of the clunk and the fuel line inside? An engine needs air, but not via the fuel line. Air sneaking through to the engine with the fuel, because of a leak in a fuel line or fitting, will cause hard starting and erratic running.

Things to check.

The clunk should not touch the back of the tank.

If it can, it will suck onto that surface at the worst possible time and flow will stop. Consider that some fuel lines will expand/lengthen when immersed in fuel.

You really shouldn't need to use that last 1ml of fuel, but you do need the fuel to flow from the tank with minimal resistance.

If you hold the tank with the outlet fittings pointing down and shake it up and down, will a soft fuel line let the clunk fold forward to reach the front of the tank?

If so, it will kink the fuel line and flow will stop in a dive attitude.

Are fuel line clamps or lock-wire installed on all connections, inside and outside the tank?

No? Then you must be hoping that fuel lines do not soften or move over time, perhaps allowing the clunk line to pull free during the next violent manoeuvre, deliberate or otherwise.

will stay tight forever.

If you suspect dirt is blocking your needle jet, don't blow into the inlet line to clear it.

That will just jam it more tightly in place. Don't be a wuss. Suck instead. You may cop some fuel in your mouth, but at least the dirt should be with it.

If you're not fussed on cleaning your teeth with raw fuel, remove the needle valve and clear it properly. Just make sure it is replaced exactly as it was. (that would be without the dirt, for that pedantic twit in the back row!)

Glow-plugs

When on their way out, they can cause hard starting and/or erratic low & mid-range running. The platinum element is very fine and quite fragile. With the engine running, it continues to glow after the battery is removed, partly by the heat of combustion & partly because of a catalytic reaction with the methanol in the fuel.

*(Should the mixture, for some strange reason be perfect, this catalytic reaction can be hot enough to allow a glow engine to start **without** the plug battery connected! Be warned! Naturally, it does need to be spun over first!)*

Unless the element is broken, a bad plug may glow a healthy-looking orange with a battery connected, but may not support combustion with the battery removed. You can often pick a dud plug if the wire is blackened on the first two turns. If you have one of these, bin it! Do not return it to the toolbox! Never! Bad dog!

Come on now!

Do you really think the engine pixies are going to make it better overnight? That it will grow a fresh, new platinum element after a few days of rest?

A good plug will have bright, shiny, even windings right to the tip.

A quality plug of the correct type for your engine is worth the extra dollars and will last much longer.

But! It will not last forever!

Idle bar plugs

HOW DOES AN IDLE BAR HELP WITH THE IDLE?

The idle bar is there to keep the glow plug from getting extinguished when the engine is throttled up. When the engine is idling, it may pool some fuel in the crankcase so when the engine is throttled up, that puddle is forced through the cylinder transfer ports. These ports usually direct the incoming charge right at the glow plug. With an unshielded plug, that fuel can hit the wire element and instantly smother it. The idle bar in front of that wire element helps prevent the flow of fuel from hitting the wire and



These Du-Bro fuel-line clips work well and are cheap.

(Fuel-line barbs of some description should be installed on all metal tubes before you attach the fuel line. A

proper barb, a blob of solder or even a series of shallow notches filed across the tube surface will help retain the fuel tube when it is clamped.

Just because a fuel tube is a tight fit on a metal fitting when you first assemble it does not guarantee that it

thereby keeps the glow plug...glowing. If you have a consistent problem with the engine dying or stumbling badly when you throttle-up, you may want to try a glow plug with an idle bar.

WHY ARE THERE DIFFERENT GLOW PLUG TEMPERATURE RATINGS?

We have plugs of different temperature ratings so they can be used to change the performance of the engine depending on the flying conditions. Because glow engines don't have a timed ignition point, the perfect ignition point will change with different running conditions. Some of these variables can include compression ratio, nitro or oil content in the fuel, weather conditions and propeller load. E.g. more nitro will advance the ignition point; too much oil will retard it; more compression will advance it; rich mixture will retard it.

By using plugs with different temperature ratings, we can adjust the ignition point slightly so it's not too early or late. Once you find that sweet spot, your engine will produce the best engine performance.

Heat Range

Plugs are numbered by their heat range, where generally, hot plugs provide better idle and acceleration, (low RPM, low temps) but may not last as long as cold plugs, especially in a high-performance engine.

Cold plugs will run well at full throttle, will produce a little more power but may idle more roughly and be harder to start and tune than hot plugs.

Normally, the higher the number, the colder the plug. A hot plug runs hot and vice-versa.

Rule-of-thumb 1: The smaller the engine, the hotter the plug required. (Not as much heat retained in the combustion chamber)

Rule-of-thumb 2: The higher the nitro content, the colder the plug required. (Nitro generates more heat)

Rule-of-thumb 3: The hotter the day, the colder the plug required. (Intake air hotter; combustion hotter)

As well as giving a little more power at the top end, a cold plug will need a leaner mix to deliver the best power at the expense of a reliable, low idle and smooth transition.

A hot plug will need a richer mix at the top end to keep from igniting too early and giving up some peak rpm in order to deliver a better idle and more reliable transition. Most of us care more about having a low reliable idle and a quick transition than we do about that extra 300-500 rpm that can be gained by going

to a colder plug, so the medium range plugs like the OS #8 are pretty much standard.



Cold plug on left has a greater air space around the element to keep it cool.

The hot plug on the right has a smaller air space.

Element wire diameter will also have a

bearing on the heat range.

Fact: Glow-plugs wear out!!! They do not last forever, nor do they self-regenerate when left in your toolbox tray for a few months.

When you find a plug that seems to agree with your engine and fuel brew, stick with it. When it plays up, chuck it!

Tuning

I'm neither brave nor experienced enough to tackle this one head on! I will, however, seek expert advice from those who do know and present their words of wisdom for your earnest consideration in a future article.

(Yo! Dodged out of that one.)

However, with my flak vest firmly strapped in place, I would like to suggest this.

If you or someone knowledgeable has tuned your engine and it is running consistently well, **don't fiddle with it!!!**

In 98% of cases it will still be in tune tomorrow and next week and probably the week after!!!

If, for some reason the engine obviously does go off tune, you might usefully try a small adjustment of the needle valve, (no more than two clicks either way) but if that doesn't improve things, **return it to the previous settings, then look for the real cause!!!**

(bad plug, bad fuel, air in fuel lines, fiddling fingers)

If you doubt the wisdom of this sage advice, please note the few members who fly the most. They simply turn up, rig, fuel-up, start and then fly. They spend as much time in the air as they want, don't fiddle with carby settings, and don't get sore fingers flicking dead engines....

Strangely enough, they also seem to be the ones who replace the glow-plug at the first sign of trouble

while leaving the needle-valve alone.

Final thought

Engines wear out too and some much faster than others. A new piston and liner may briefly breathe new life into a temperamental engine, but perhaps it is time to buy a quality new one.

Epoxy substitute tip-Water-based Polyurethane



Further to the Product review last month on Deluxe Materials Ezi-Cote resin, a water-based polyurethane finishing resin. Thanks to Steve Sutherland for prodding me to research further.

A possible substitute for Ezi-Cote would be Cabot's Cabothane/Crystal-Clear water-based polyurethane which is an indoor-rated wood treatment. Price-wise, Cabothane/Crystal-Clear is competitive at around \$26 for 500ml (\$25 for 500ml for Ezi-Cote) and is readily available from Bunnings or Masters. However, the per-litre price is heaps cheaper in larger volumes if needed.

A check of the various forums, however, raises a few concerns about the effectiveness of Cabothane as a long-term epoxy substitute. While some modellers reported good results, others found that after some time, the 'glass covering started to delaminate and the resin turned slightly yellow. I presume that the yellowing would not be a factor if the surface was painted, but of more worry is the delamination, which was reported to start around the edges, then in patches across the 'glass surface, even though it had previously appeared to be uniformly wetted-out and well stuck-down.

This could, of course, just be a bad application/wetting-out problem. Users of Ezi-Cote report good results with no problems.

A comparison of these two products may be made if I can get a round tuit. (I seem to have misplaced mine. If you find it, I'd better have it back.)



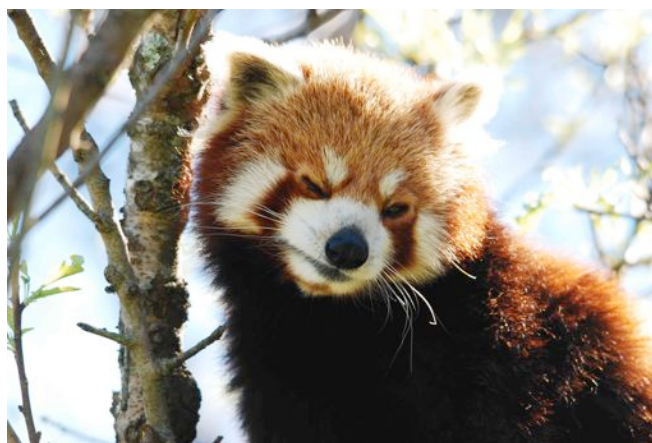
"Damn! Those giant-scale prop guys just can't stay away! Don't they know it's a Jets-only meet!"

Starting boxes, Wangaratta Jets, Wangaratta Airport



"Stress! What stress? Jet jockeys don't have stress!"

Mark Kyle, Eurofighter and other relaxees at Wangaratta Jets



"This better be worth it, now you've woken me up!"

Tale Piece.

Monthly Club meeting, Sunday, 11 August 2013, 1030

So that's it yet again. A lot of waffle; a few kernels of truth; bit of a mixed bag. Useful? Nobody said it was supposed to be useful! Maybe I'll get the sack. Nah! I couldn't be that lucky! 'Till next time, Straight Take-offs & Soft Landings.