



### Model engine Porn!

Motor used in USA 40% unlimited class pylon racers. They convert DA 150s and DA 170s to run on nitro and alcohol rather than gasoline. 15kW suddenly turns into 32 kW — custom made 21x27 props to over 10,500rpm. They push these birds to around 415km/hr. No electric or gasoline plane could come close to the power and performance of these. These planes pull 25G in the turns.

If it ain't glowin' it ain't goin'!!!!

### Thermal Thaw Competition (from Bill de Renzy and Rob Morgan)

The TMAC team of Rob Morgan, Bill de Renzy, Tony Christiansen and Bruce Clarke headed off to Auckland leaving Tauranga in the lightening dawn sky and stopping at Paeroa to refresh and take breakfast onboard. We arrived in Auckland at the rock garden a little late after the driver failed to follow directions accurately.

The flying site is Ambury Park Farm which is right beside Mangere Mountain which incidentally the Auckland Soar guys use for slope soaring. There was much hand shaking, joy and frivolity with the meeting of old friends as the 2019 contest was wiped out by weather and we last flew there in the winter of 2018.

This year the event attracted 12 contestants.

We assembled our aircraft and had the obligatory nervous pre-contest first flight to settle the nerves and test the air. Conditions were pretty good first thing in the morning, overcast, no sun but a light breeze. There was little thermal activity and with the wind it was a bit of 'point into wind and look for a ridge. Obviously, there was some ridge soaring going on as several pilots got 7.00 min scores and good landing points.

The pilots briefing was a short affair outlining the day ahead and we got into the first round, the first guys up enjoyed light airs and reasonable lift as they flew their seven-minute round. By the time the next group started their first round the wind was increasing and the conditions made it a little more difficult to achieve a maximum time let alone a landing score. Rob and Bruce getting near to 7 mins with good landing with Bill and Tony close behind .

It must be pointed out at this time that Radians do not penetrate into wind and generally when you lower the nose to move upwind they result is an increased descent rather than a shift of position upwind.



We all agree, and history has shown, that we are all drawn to one particular aspect of the Mid-Winter – Thermal Thaw. This is because the organiser is a chef and every year there is a slight variation on lunch but it is always hot and very tasty. This year Aneil did not let us down and we dined like kings. Thanks, Aneil, the lunch was top notch.

We began round two in particularly trying conditions and some carnage as the wind increased and the third and final round was pretty much the same.

Round 3 (of 3) and Rob and Bruce were in the mix for podium places (there were no prizes!) Tony then found that his Tx wasn't speaking to his model, (so he says) and withdrew. Bill launched his brightly coloured checker model to the sky unfortunately forgetting that he is blind without glasses on. Ooops!

At the end of the day 1st place was Dave Larsen (and experienced soaring pilot), 2nd Bruce ,3rd Rob, Bill was 6<sup>th</sup>.

Running alongside the Radian comp was a 2meter class and open (10 minute) class with 4 entrants (Rob was 3rd with a Radian)

It was a good day and we are all looking forward to going back next year.

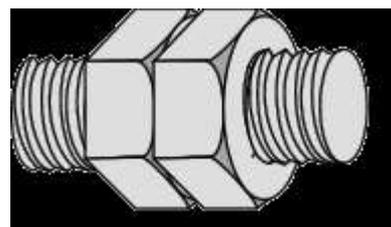
## Prof Flapbracket



**A sticky problem** – Pilot R. had a YS 4 stroke motor which had no compression at all. The motor had not been used for a few weeks but when last used it ran strongly. The motor could be spun over with the starter and apart from a few clicks and pops from the valve gear, there was no sign of life. The solution was to remove the valve covers and operate the valves manually both opening and closing.

Instant cure and full compression restored. It seems that while in storage the oil had dried out leaving one valve stuck in the semi open position. Not sure if the sticking was in the valve guide or the camshaft follower but it was just enough to prevent the valve from closing and the motor from running. A simple fix able to be done in the field.

**Two nuts are better than one** - Four stroke motors have a propensity to backfire on starting which can cause the prop nut to unwind. This can result in the entire spinner assembly, drive washer, nut, and propeller disappearing into the long grass requiring a hands and knees search to find them. Its also a safety hazard as you don't want to be standing in front of the prop when it lets go. The solution is to always use a double locknut arrangement. This is known as a "prevailing torque" nut assembly. The idea is that if you jam the two nuts together, the assembly is stiff to turn on the shaft. When the nut assembly unscrews a small amount, the propeller will come loose from the drive collet and will spin free without further unscrewing the nut. Some manufacturers have a proprietary nut assembly with a conical face between two nuts. An alternative is to use a second nut screwed up tight against the main nut. Nylock nuts may be ok but their "prevailing torque" is comparatively low.



It also helps to put a thin piece of friction material (eg thin leather) between the engine prop driver and the propellor. This will reduce the tendency to slip on backfire.

**Soldering wires onto XT60 connectors.** If you heat them up too much or for too long to get those heavy wires attached, it can soften the plastic and cause the pins to move out of alignment. A simple solution is to fit the plug to its mating half first. This will hold the pin in alignment until the plastic rehardens. Best is to use a grunty soldering iron able to dump lots of heat quickly, so you don't get too much transference into the plastic housing.

**Voltage indicators.** Many of our members use the Tower Hobbies/Hobbyking voltage meter to check the battery status in your model, This unit is cheap and simple. It has a row of LEDs and the voltage is read by how many, or which one is lit. The following table gives an idea of the actual voltages for each LED to light up.

range	R	R	G	G	G	G	G
4.8V 4 cell	3.96	4.69	4.79	4.89	4.99	5.1	5.26
6V 5 cell	4.55	5.58	5.72	5.82	5.9	5.96	6.08

Most 2.4GHz receivers will drop out if the voltage drops below 3.5V. This means that you can fly (just!) with one dead cell in a 4 cell pack assuming that the other 3 are fully charged.

In practice you are ok to fly whenever you are showing green **with servos under load**. Any time you see a red, its not safe to fly. For safety, a 5-cell pack is preferred as this gives you protection in the event of one dead cell and a depleted battery

## Coming events

- **Australian International Airshow and Aerospace & Defence Exposition (AIRSHOW 2021).** 26-28 November 2021. This is the 100<sup>th</sup> anniversary of the Aussie airforce and is bound to attract some heavy machinery. Put a note in your diary and trust that the world comes back into balance before then. If you are interested contact Dave Marriott and we'll see if we can arrange a group.
- **TMAC Auction** – now scheduled for 4<sup>th</sup> October. Stuff is starting to arrive. Sort out your workshop now.
- **Lecture by Graeme Frew**, owner of Reno racer "Full noise". – 15 October. Details in last newsletter.
- **TECT Park 10<sup>th</sup> anniversary birthday party** – November 28<sup>th</sup>. Please send your photos to me.
- **Hamilton MAC floatplane days.** These will be held at Lake Kainui on 2<sup>nd</sup> August, 27<sup>th</sup> September and 22<sup>nd</sup> November. 9am to 4pm. (subject to gaining consent)
- **TMAC Winter Indoor programme** – unfortunately due to the disruption of the COVID-19 pandemic, this has been cancelled.
- **Control Line combat day**, TECT Park 15 November. Fast, noisy and scary! See Rob Morgan for details.
- **Waharoa Warbirds** event October 17th



## Interesting links (sometimes slightly related to aviation)

- Low level warbirds - <https://youtu.be/GI-aUbN3b5c>
- So you've tried hot wire cutting of foam wings? Here's the next step – 3D cutting of complex curves <https://youtu.be/ILKI0HWV3dc>
- Finally it surfaces. I wonder how many of these veteran aircraft are still hidden away in reclusive owners' barns? <https://www.stuff.co.nz/national/121990112/treasure-trove-of-hidden-historic-planes-including-rare-wwii-mosquito-to-see-the-light>
- Testing the Mars Ingenuity Helicopter. Thin atmosphere, extreme temperatures, foldable, autonomous and millions of miles from home. A major model helicopter design challenge. Launched today. Landing 18 Feb 2021. [https://www.youtube.com/watch?v=d5ehz7pHprk&feature=youtu.be&list=PLTiv\\_XWHnOZoPT2VCxZJOF7Vg1VTNuGj4](https://www.youtube.com/watch?v=d5ehz7pHprk&feature=youtu.be&list=PLTiv_XWHnOZoPT2VCxZJOF7Vg1VTNuGj4)

## Committee Changes



Some changes in your Committee makeup in the last month. Mikey Wilson is stepping down, but Bruce Clarke will be coming on to the Committee. Bruce has also offered to take on a role overseeing our field maintenance programme.

Our Committee is now made up of:-

President – Richard Thompson

Treasurer – Kim Clarke

Secretary – Dave Marriott

General – Roger Peddle, Rob Morgan, Caleb Day, Bruce Clarke, Bruce Liddle.

Bill de Renzy attends Committee meetings in the role of past President, but has no voting rights.

Committee members also take on a number of other roles eg.

Roger Peddle – Membership and 'wings' training

Bruce Clarke – Field maintenance

Dave Marriott – Newsletter, website, fundraising

We are always seeking volunteers to take on specific tasks to spread the load. Please hold your hand up.

## Auction

This is now confirmed for 4th October. Stuff is starting to arrive and my garage is getting overrun. It's time to declutter your workshop and start thinking about what you want to sell - or donate. The old adage that "one man's trash is another man's treasure", is important to remember. Almost everything finds a home. Even if you think it is worthless, give it as a donation and we will put it on the "free" table or the \$2 table.

If it is an item of substance, let me know in advance and we will list it in promotion.

We will be issuing more details closer to the event.



## Wings Tests

At the July club night Dave talked about the road to getting your wings. We have a significant number of flyers who fly competently, but for one reason or another have not yet asked for a wings test. The wings test is not onerous. You do not need to be an aerobatics champion or study like you are applying for a job at NASA.

The wings test consists of 3 main elements:-

1. Carry out pre-flight checks appropriate to the model being flown
2. Demonstration of flying competence including take-off, basic horizontal manoeuvres, and landing
3. Answer 5 questions drawn from a standard list. These relate to safety, club rules, CAA requirements.

The most common reason for flyers not taking a test, is fear of failing the questions. For most of our members it is many years since they last sat an exam and the prospect of answering questions is intimidating. However -the questions are largely common sense. It is not necessary for you to learn the answers verbatim. Your examiner will be looking to see if you have understood the issue and can respond in your own words. If you are basically on track your examiner will generally prompt you in the right direction. A set of model answers can be downloaded from our web site.

The primary purpose of the test is to validate that you can operate without endangering yourself or other members. This is related to meeting the requirements of the insurance cover provided via your MFNZ affiliation.

The main advantages of getting your wings are:

- You can fly any time without supervision
- You are covered by insurance
- You can obtain a gate key which gives you freedom of access to the field
- You can compete in interclub or national competitions.
- You can brag to your mates that you have your “wings”

Since the club night 3 of our members have passed their wings. Congratulations to Ben Giles (BP), Tim Churchill (BP) and Ian Vercoe (glider). Thanks to Examiner Roger Peddle for taking these tests. Ian subsequently posted *“I haven’t been this nervous since my last dental exam!”*. I think that in retrospect Ian would say that the process was relatively painless – and without novocaine.

Also – during the month Dean Hill got his ‘advanced fixed wings power’ wings. Well done Dean!  
Are you ready for your wings test?

## Field Maintenance

**A big thanks to Richard Brown** who has checked our mower offsite, and tidied it up. Following Andy Avgas’ collision with a hidden tree stump, the cutting deck needed realignment. Richard has also fitted new radiused rollers at the front which will reduce the tendency for the rollers to cut into the turf on corners.

**Weather Station** - A new modem has been installed on the weather station. This enables it to talk directly to the new 4G cellphone tower, instead of struggling to find a 3G signal from somewhere over the horizon. Signal strength has improved from “4” to “31” on a scale of 0-31. Photos are now coming through regularly. To access the new system, you need to change the internet link. The new link is <https://live.harvest.com/?sid=7030>. We are now “negotiating” for a camera upgrade.

**Outfield mulching.** You will remember that the TECT management mulched half of our outfield during the lockdown. We have engaged a contractor to finish the job. The margins have been pushed back and some tracks have also been cut into the jungle to improve access. The tree stump which attacked our mower has been spoken to. Outfield mulching would appear to be a routine requirement every 2-3 years.

## Clubnight July

Some 20 members braved a cold but dry night.



**Richard** - Talked about changes on the Committee and called for more people to consider a role on the Committee.

**Dave** – gave a refresher course on the wings test, for both learners and the experienced but forgetful. Also an update on field maintenance activities.

**Rob** – talked about his Hobbyking Cub J3 which is close to completion.

**Richard** – gave a talk about pylon racing and the need for speed. He showed his latest pylon model. He is trying to decide on whether to power with a Cox Conquest 0.15, or a ported Nova Rossi 0.21. Both options seem a little frightening!.

Photo – Richard talking about his diminutive pylon racer. Rob’s J3 Cub on the table.



## TECT Park 10<sup>th</sup> anniversary

TECT are planning a 10<sup>th</sup> anniversary birthday party on 2<sup>th</sup> November. They want to have a display of various club activities since establishment. They have asked all clubs to submit a set of photos depicting milestones. These could include any of the following

- Excavation, survey, sod turning, etc
- Meeting/AGM
- Events, competitions
- Committee member list, if a newly formed club/user group
- Signing of the lease/MOU/Licence
- General photos of club activities.
- Anything that might be of interest to your group or to anyone visiting the Park, in the years to come.

Could you please search your files and send me any photos which you feel are worthy of inclusion. If possible, include a brief statement describing the picture. Deadline 24<sup>th</sup> August.

Details of the party are under development and yet to be advised. I'll let you know as soon as I hear.

## Andy's Column



**Dobinamate** – who was it that was flying a towline glider while the outfield was being mulched? Somehow the towline got caught up in the mower and it wound all the line up in a millisecond and oversped the towline motor causing the armature to self-destruct?

You can't hide – Andy's seen the photos.

Whose model literally exploded on a normal flyby? The fuselage went bang with little bits floating down accompanied by 2 wings. Not your normal structural failure. Air crash investigations are underway. Theories include witchcraft, intersection with a parallel universe, being hit by a meteorite, being struck by lightning, or could it be a petrol tank leak ??

New expression heard in the pits – *"gliding like a cast iron manhole cover"*. We've all had models like that.

Who recently attended a glider competition, launched and then realised he didn't have his glasses on? Totally blind and unable to see the model which performed elegant pirouettes to the delight of the entranced audience, landing out undamaged after 56 seconds !!!

## CAA Airspace defined

As part of our wings test we are expected to know the basics of CAA airspace classifications. A useful read is <https://www.aviation.govt.nz/assets/airspace-and-aerodromes/gap-new-zealand-airspace-web.pdf>. This gives a very useful pictorial of the "upside down wedding cake" used by CAA to define airspace zones.

TECT park is outside the Tauranga and Rotorua control zones (CTR) but is within a general Class G (uncontrolled) airspace. In particular, TECT Park is a Special Use Airspace. The TECT Park flying site is designated as Danger Area NZD 237. It is designated "for the purposes of model aircraft flying". It covers a circle of radius 2km and with a ceiling of 2500 feet above mean sea level. (1000' above ground level).

The only restriction any full size aircraft has in flying through our area is they must be above 500ft AGL. They must be aware of additional risk on flying through the Danger Area and may enter if they deem the risk is low enough.

### **WE MUST GIVE WAY TO FULL SIZE MANNED AIRCRAFT AT ALL TIMES.**

The following maps show the extent of local controlled airspace



Tauranga CTR

TECT Park



Rotorua CTR



## MFNZ Stuff



During the lockdown some of you may have received the Model Flyers World publication by email. Others didn't. More recently there have been calls for proxy votes for the AGM, and for contributions to Model Flyers World. It seems that delivery of these has been sporadic. Paul Clegg (MFNZ Secretary) advises that they are having problems with their email distribution system. For some unknown reason many members have become "unsubscribed" from this system, the TMAC

Secretary being one. If you are not getting emails from MFNZ, let Paul know at [members@modelflyingnz.org](mailto:members@modelflyingnz.org).

Paul is trying to develop a more robust emailing system so hopefully this will improve over time.

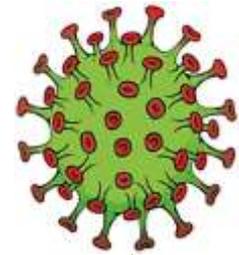
On a similar topic, MFNZ have advised that for the balance of this year the Model Flyers World will only be provided in electronic form. This is a significant cost for MFNZ so we look forward to a proportionate reduction in membership fees. If you have strong feelings either way on MFW being an electronic publication, contact Paul Clegg.

## New arrivals at the Field.

Geoff Gates' heavy foamies. The Hercules is very impressive in flight. The Boeing is awaiting its White Knuckle Airlines insignia, and is yet to be flown.



Morgan's electric pusher made from foamboard – and it flew (briefly)!



Dean Hill has left some upholstery foam scraps in the clubhouse. Useful for wrapping batteries and receivers. Help yourself.

### Covid comment

its not over yet. While we are back to almost normal conditions within NZ, the disease is still rampant overseas and, in some areas, (eg US) has still not reached its peak. Let's not get complacent. We are highly vulnerable to any little breach of our border controls. You should still be practicing basic rules in social distancing and hygiene.

- Are you keeping your personal contact register up to date?
- Make sure that you fill in the field attendance register.

That's all for this month – lets go flying!

Dave Marriott  
Editor

