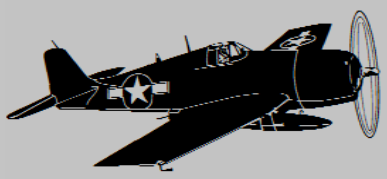
October
2025

HAMILTON MODEL AERO CLUB

Flight Lines



FLIGHT LINES

HAMILTON MODEL AERO CLUB INC.
October 2025
www.hamiltonmac.org.nz

PATRON Graeme Bradley –Retired and living a well-deserved life of luxury

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Cover: Club members hard at work (well most of them) during the Clubs working bee

COMMITTEE:
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Brendan Robinson
Rudi Weideman
Lyndon Perry

WEB SITE: Grant Finlay

NEXT CLUB NIGHT: Wednesday, December 10, 7:30pm

VENUE: Beerescourt Bowling Club - 68a Maeroa Road - Hamilton

Club Night Theme: World F3A Pattern Aerobatic champs talk by Frazer

Club Themed Flying Day: Float Planes, Sunday 5 October. Fingers crossed for this one

Presidents Report

Grant

Wind, Rain and repeat, that's been the order of the flying weather for this month, well at least for those of us restricted to flying on weekends. We did get a slight reprieve for a fantastic day at the Big Models Rally on the Saturday and of course our Working Bee Day was comfortable for laboring type work. But all up, its been pretty much typical spring weather and we shouldn't complain!
So, of the two events that went ahead this month, the Big Models rally at Waharoa had to be the highlight. There is a report elsewhere in the newsletter written by Wayne, so I won't comment further other than to say it was a great event with an excellent turnout on the Saturday.

Sunday was a bit quieter, but that was to be expected, yet there were still a couple of additional faces there that couldn't make it Saturday.
From our Club activity file this month, the working bee saw a great turnout with some real effort put into getting things sorted and completed. There is an article and photo's further on in the newsletter, so I needn't cover off much more other than to thank everyone that turned out on the day to lend a hand & equipment. There're still some finishing touches to be sorted, but in the main the priority work got completed, which was great to see. Thanks also to Lyndon for sorting out the Lunchtime BBQ which went down a treat after the morning's efforts.
Club night for September was reasonably well attended with a good number of models brought along for show and tell. In fact, that took up most of the evening with some interesting sideline discussions eventuating whilst crossing a multitude of topics. Frazer was lined up to talk about the NZ team competing in the World F3A Pattern Aerobatic champs, but we simply ran out of time. But never fear, all things going to plan, Frazer will present his show and tell at our last Club night meeting for the year in mid-December (i.e. our Xmas club night meeting)
Coming up this weekend we have our Float plane day at Lake Kainui, at the present moment the weather is looking pretty doubtful, but the forecasters have been wrong numerous times before, so fingers crossed that goes ahead. As for the Scale Competition this weekend, well that's already been cancelled & likely rescheduled in November. Pylon has also postponed their event a week as well due to the poor forecast.
Now, this month all going to plan, our glorious editor in chief will likely be trying a new format for the newsletter. You will clearly notice it has moved from its historical A5 format to the larger and more common A4 style. Things may appear a little different as Dave comes to grips with the changes and gets used to different formatting and presentation techniques. I'm sure the end result will be a great improvement on the readability and clarity of the newsletter.
Well on that note, it's time to close off for the month (No AI writing this time) and head to the workshop!

Cheers
Grant

Grant, Gordon and Dennis admiring their handywork

Vice Presidents Report

Bryce

Spring. Rain, wind and brave souls.
Start of the month was strong winds and vertical flying. Bit strong for the old foamies. The plane went up. Hovered and then came back down. Bit crazy when you're flying turns out to be limited to the air directly above the runway.
Middle of the month saw a lovely flying day for the large model event in Waharoa. I didn't go, instead I snuck out to the airfield for a half day of flying in the light winds and blue sky with a few other keen souls. My reward. A speed camera fine triggered at 8am on Collins Road. Too keen.
Couple of notable events for me this month.

Flight testing of a repowered SE5A. I wasn't happy with the repowered flight time. The performance seemed lack lustre. Might have put the wrong engine in. Couple of flights later and I am seriously thinking that I somehow messed up the power system maths. Nope. Spot what's wrong in this picture. Grant's gonna give me the *propeller* award for that one.

Did anyone spot the prop is on backwards?

Also, on the upgrade note. I have been enjoying flying the speedy bee and she looks cool in the sky and lands well. Though, I have never really been happy with the banked turning. She tends to fall when turning. So, typically I would try and limit the banking to retain as much lift from the wings as I can and definitely go nowhere near knife edge. Option 1) make her lighter. Option 2) make here faster. Yes, option two sounded more fun. So after the working bee she was tested out on a 4S lipo (15.4V) and contrasted with a 3S lipo (11.7V). For electric the maximum prop spin revolutions determined by Volts x kv, so more volts = more speed. Conclusion from testing, flight characteristics definitely improved on the 4S lipo. Thanks to everyone who turned out for the working bee, I thought it went really well, and we were done by lunch time. Thank you Lyndon for preparing and hosting the BBQ.

Editors Ramble

Dave

Hi all. I was over Winter and now I'm officially over Spring. Rain, wind and then the cycle repeats itself. I did manage to tear myself away from home a couple of weeks ago to the Hawkes Bay and got some Vintage flying in at Awatoto. Nice.
If this month's newsletter appears to be a bit bigger, well it is. The format is now A4 which is going to mean either less pages or I increase the size of the pictures for those with poor eyesight. Maybe both, we'll see. Either way, it's amazing what your computer allows you to do by enlarging or reducing the size so to be honest, most of you won't even notice the difference.
This month we have for those that couldn't make it to the field, a report on the working bee from Gordon together with highlights from the Big Model Rally in Waharoa by Wayne. Our regular contributors Malcolm Foster and Bruce Pickering are going to talk you through the now modified Double Delta and the Taylor Aerocar respectivly.
A couple of Tech articles are there for you to ponder also along with a number of items that are available for sale. So check them out.
And lets not forget about the Nats, this year being held in the Hawkes Bay. Thank you to MFHB editor Barrie Russell for allowing me to reprint his Nats article giving the dates, highlights and location.
Hopefully this will inspire a few HMAC members to enter. Enjoy the read.

"Stuff You Weren't Expecting"

Malcolm Foster. Eccentric modelling economically.

Greetings to all Waikato Aviators from down in the Bay of Plenty. Well, Trump tells us there's no such thing as Global warming, it's all a "Green Scam", so maybe we're just getting more of that so-called "Crowded House" phenomenon - "Four Seasons in One Day". I know that sometimes out at the field the birds have been flying backwards, and I've seen the cloud of pine pollen coming from the nearby hills like a veritable yellow sandstorm. Still, when you want to fly, you want to fly, eh? Maybe next we'll see our local volcano (Putauaki) burst into life.

Here's a photo of two of my current fleet with the volcano in the background. The Delta is a great flyer, with its little OS 25LA never missing a beat. I've got the flare on landing sorted now, which makes taxiing back to the pits easy. And with this plane you never get tipped up by the wind when taxiing, it's as stable on the ground as in the air. I put a little flight video of it up on Youtube, just enter "Whakatane Model Aero Club" in the search bar. My pal Joe did a great job of the drone-chasing photography, while crooning "Delta Dawn, whut's thet flawer yew got on?" What a talented man, eh?

The sharper - eyed among you will notice a not-so-subtle change to my Double Delta. It's gone from having a short, radial "Beaver" style nose to a longer, sleeker "Cyrano De Bergerac" nose. This puts the motor further forward, and means I could remove six ounces of useless lead ballast. It also means I have to be more careful on take-off and landing, as the main undercarriage now seems quite far back. In fact I have to flip from high

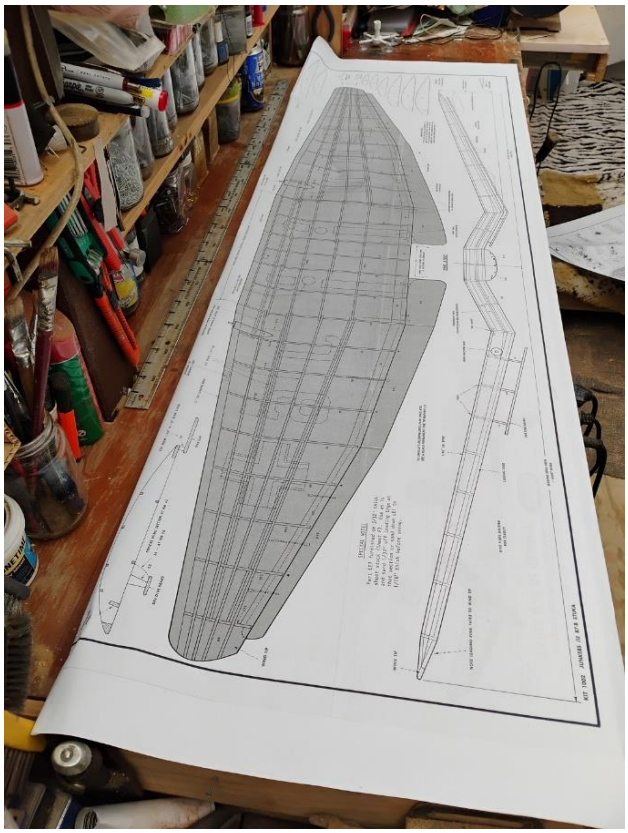
elevator rates on roll-out to low rates for take-off and flight, otherwise it tends to nose over. Still, nothing like such challenges to keep the ageing brain active, eh?

My little Action Man parachutist has been campaigning out at the field. Once I swapped the flimsy light plastic bag canopy for a stronger one made from an old nylon shower curtain he made much less fatal descents. Most times I can judge the "jump" so he lands back on the field, or close by. I take him up on my old "agricultural" mid-wing plane, (also OS 25LA powered) and he's on a couple of prongs, so when I loop and push some down in at the top, he slides off great, and comes on down.

Except for the time he kicked half the canopy off the bloody plane! (see photo) Now repaired. So with all this wet and windy weather, it must be time to start another project. My mate Dave from the club got us both a set of Guillows plans enlarged to give 50" span aircraft. We're going to build a brace of them. Amazing big chunks of paper they're printed on - each sheet is 1500mm by 900mm. Can you guess from the photo what it's going to be? All I can say is "Achtung! Vatch diss Schpace!" (Sound of Jericho horn coming closer in the distance....)

Until next time, may your craft knife remain rust-free. (Oil it, mate....)

cheers,
Malcolm



The Great 2025 HMAC Working Bee

Gordon

A Day of Progress and Camaraderie

Last Saturday, under clear skies and near-perfect spring weather, the Hamilton Model Aero Club held a highly productive working bee that brought together a strong turnout of enthusiastic members. Armed with shovels, wheelbarrows, every other tool imaginable, and a shared sense of purpose, the team tackled several key upgrades to the club's facilities.

Groundwork and Improvements

A major task for the day involved shifting a substantial amount of sand to prepare the site for new installations. Members laid concrete pavers to support two newly added picnic tables—creating a more comfortable and inviting space for spectators and pilots alike. One of the model aircraft starting pads was also re-sited to face away from the picnic area, improving safety and flow on flying days.

New Amenities Installed

A highlight of the day was the installation of the brand-new Portaloo toilet, now securely mounted on a permanent base. This long-awaited addition marks a big step forward in convenience for club members and visitors.

BBQ and Flying Fun

After the hard work, Lyndon fired up the BBQ and served a well-earned lunch that brought everyone together for a relaxed midday break. With appetites satisfied and spirits high, the afternoon wrapped up with some enjoyable model flying—reminding everyone why they love being part of the club.

Thanks to All

A big thank you to everyone who pitched in. Extra thanks to Phill Bell for supplying & "driving" the compactor, and Brian Collins for his levelling gear & expertise in laying down paving.
A huge thanks to Joss Reekers for the excavation work & supply of the base sand.
The improvements made will benefit the club for years to come, and the day was a great reminder of the strength of our club when we work together.

Just to prove the boys did the hard yards and not a contractor:




















Well done chaps

Big Model SIG Rally 20-21 September

Report by Wayne Cartwright, photos by Grant Finlay

This rally was hosted by Matamata-Piako MAC at their site on Jaggers Road, Waharoa. It was very attended, with 30 pilots and 49 aircraft, as well as many spectators. Flyers came from Palmerston North, Taupo, Rotorua, Hawkes Bay, Auckland, Tauranga, Hamilton, Cambridge and Matamata. The rally demonstrated that interest in Big Models is strong and that the simplified rally format is enjoyable in terms of both flying and socialising. Twelve models had been certified by the Large Model Programme and therefore flew under CAA Part 102. The other 37 models were Big Models according to the MANZ Classic size specs and flew under Part 101. There was no confusion regarding these two categories of models.
Most flying took place on Saturday which had excellent weather. Sunday was overcast and quite windy.

Some of the highlights were:

- The overall feeling of relaxed enjoyment and fellowship.

• Stan Hodson's recently-certified 4 meter Cessna 185 built from a TMMY Composites kit. It was ably flown by Grant Finlay, who commented that it 'needs to be flown like a full-size.' As expected, this big and heavy model coped well with the wind on Sunday.

• Phil Churchill's very realistic low-level flying of his 'Dusty' (modified Pawnee) powered by a King Tech turboprop.

• Gordon Mead's fleet of four models over the two days. Two had belt-reduced Zenoah G62s – a 40% Pober Pixie and 1/3 Stampe S4B. The others were a 1/3 Smith Miniplane and a 1/4 Stinson Sentinel. Gordon probably did more flying than anyone else.

- Dennis Clark's 1/8 scale DC3. It has a lot of detail, with thin aluminium covering showing countless rivets. This model was certified way back in 1993 but had not been flown again until recently, with Colin Austen demonstrating it very nicely at the rally. It was also great to see Colin's own venerable Beech C18 (twin Zenoah 62s) being flown again.

- Two very large but nimble aerobatic biplanes. One was David Kenright's Flex Innovations ARF Mamba 120 (DA 140 with pipes), and the other a 47% Pilot ARF Pitts Challenger (DA 240) flown by Adam Butler.

- Mike Brigg's grandsons helping (?) him to start his Ugly Stick (see photo). Great to see.

- Three scale sailplanes being aero-towed.

The 'Balbo' concept was trialled on Saturday. This idea was borrowed from the Duxford airshows (UK), where the last event of the day is a balbo – getting as many planes into the air as possible for a mass formation fly-by. At the rally, we tried a 'Biplane Balbo' over a 30 minute period. Six models were started and five flew. (See photo of the models intact after the balbo – Mamba, Pup, Miniplane, Fokker D7, Tiger Moth.) Pilots said that the sort-of coordinated flying was fun. The idea worked well enough to do it again. At the March 20-21 Rally in 2026, the balbo will be for Stick-type models, including modified versions of the great old Ugly Stick design.

It is great to see the Big Model movement in good heart again. In 2026 there will be two rallies at Waharoa, and rallies at two other NI sites are expected.

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A physicist froze himself at -273.15°C

Everyone said he was crazy but he was OK

Aircraft I Dream About — the Taylor Aerocar

Bruce Pickering

Practical motorised road transport appeared around the same time as powered aircraft. So it was probably only natural that some enterprising individuals would try and combine the two. The Waterman Aerobile and Gwinn Aircar, described earlier in this series, are just two examples. Even today, attempts persist at making a car that flies, or an aeroplane that drives on the road. In 1949 it was the turn of Moulton Taylor, who established Aerocar International with the intention of developing his own version of a flying car.

Building on the idea of Robert Fulton, who developed an amphibian, Taylor focused on making a vehicle that was functional and easily and quickly converted from road to air use. With side by side seating for two in a rather neat looking 'tiny car,' the *Aerocar I* was fitted with a Lycoming horizontally opposed four cylinder aircraft engine, developing 143 hp.

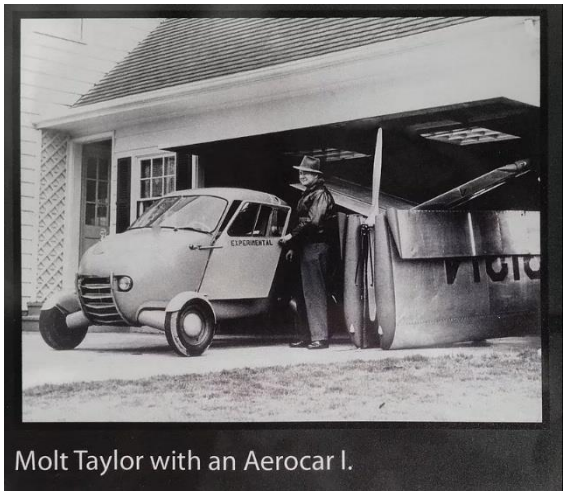
In road use the engine is connected via a three speed manual gearbox to the front wheels—in aircraft mode the rear mounted propeller is driven by a drive shaft from the motor. The high wing and rounded cabin area afforded the pilot-driver excellent visibility, both ahead and down. The wings were easily attached and detached using a hinge type of contrivance. Early advertising said that fitting the wings was "so effortless that a woman could do it without soiling her gloves."

The *Aerocar* had a top road speed of 110 kph. In the air, it had a top speed of 177 kph, cruising at 160 kph. A service ceiling of 4000 metres, and a range of 480 kilometres, made it an attractive combination.

Another appealing feature of the design was that the wings and tail did not have to be left at the airport when converting to road use. They were folded into a self-contained package that could be towed behind the car. One advantage of this was if the pilot flew into bad weather, he could land at the nearest airport, fold up the flying components and tow them behind the car until he got back into good weather. Converting from car to aeroplane took five to ten minutes. A safety device prevented the engine from starting if the wings and tailplane, along with other flight hardware, were not securely attached.

Taylor secured funding from investors and obtained CAA certification in 1956, and although he sold prototypes of the *Aerocar I* for only $15,000, he was not able to begin volume production. Only five were built, while a sixth one, built as a flying only version, called *Aerocar II*, was constructed.

In 1968 Taylor rebuilt one that had been damaged in a traffic accident into the *Aerocar III*. It had a more streamlined body—apparently inspired by the E-Type Jaguar—and wheels that could be fully retracted during flight. A larger engine provided an increase in speed to 217 kph. The aim was to sell it for less than $10,000—about $4,000 more than a new Cadillac Coupe de Ville, but $2,000 less than a Cessna 150. Although reported in August 1971 Popular Mechanics to be "comfortable to drive and exceptionally stable in flight," only one was produced—it now resides in the Museum of Flight in Seattle, Washington.


Molt Taylor with an Aerocar I.

In spite of the hype, although the *Aerocar* could perform both on the road and in the air, like most flying cars the necessary compromises did create problems. As a car they were cramped and noisy, as an aeroplane they were heavy. In both roles they were relatively slow, and fuel economy was high, using about thirty percent more fuel than a Cessna 150in the air; on the road it travelled 6.4 kilometres per litre. Taylor did not give up however concentrating on developing light aircraft. He continued his interest in flying cars, and in 1989 he envisioned, though never built, a conversion kit to fly a Honda CRX.

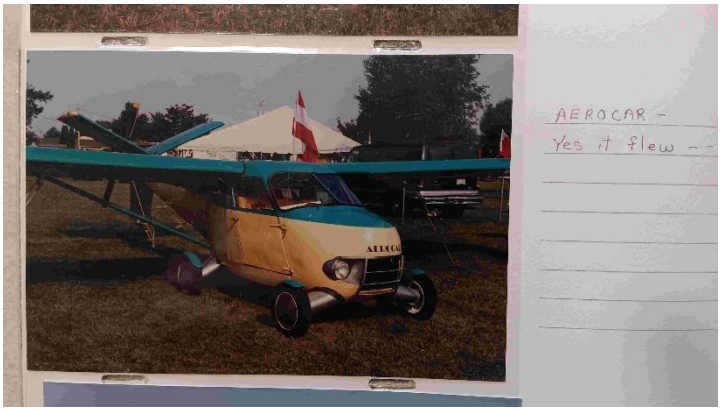
Aerocar I completed seven hundred flight hours and over 32,000 kilometres on the road before the CAA approved it for production. A radio station in Oregon used one for live traffic reporting. In 1961 Taylor nearly secured a manufacturing deal with a company in Texas. This entailed securing five hundred orders, with a projected price tag of $8,500 (the actual sale price was $15,000). The deal collapsed when the sales department spent the money set aside for tooling on a massive publicity campaign.

In 1970 the then president of Ford became interested in the Aerocar and commissioned a study that concluded there was potential for sales up to twenty five thousand per year. However, the Department of Transportation became alarmed about so many commuters taking to the sky, and the Ford company worried about possible repercussions. Ford engineers determined that necessary modifications to meet safety and emission standards would make the vehicle too heavy to fly, with a price tag of four hundred million dollars, and the project was officially cancelled.

Still, the idea lingered and in the early 2000s, Ed Sweeney, an owner of an *Aerocar I*, designed a flying car based on a Lotus Elise. His design was similar to the *Aerocar III*, which he called Aerocar 2000. However, he too seems to have abandoned the project before any flight testing could be done.

Others too have come and gone. In 2020, Hyundai proposed their version of a flying car. In 2021, Terrafugia obtained an FAA Special Light-Sport Aircraft airworthiness certificate for their 'Transition' proof of concept aircraft. Aston Martin's Volante Vision, Boeing's PAV eVTOL, Airbus' Alpha One, and the Sampson Switchblade are just some modern day attempts at flying cars. So, if you want to make a model flying car there are plenty to choose from.

And this from Grant:



I was pretty sure I had seen the Aerocar at Oshkosh at some point…and yes, I did!!

It was my first trip to Oshkosh in 1996…a few years ago now!!

Luckily I took pictures and put them in an Album…so here it is in all its glory!!

I actually saw it fly as well which is probably why I remember it I guess…something special 😊

Overpowering, Overloading, and Overbuilding

This article recently appeared in the latest edition of AVANZ News.
It was forwarded by Bernard Scott, written by Robert Reynolds in the US and he has given permission for it to be used. Does this apply to you?

There are a few really popular planes that have been around for decades and are now considered classics, which were lightweight when they were first published or offered as kits, but now are typically built at 125% to 150% power and wing loading. Everybody seems to be having a good time, and it seems there isn't any issue that needs to be addressed.

That's what people usually think - we're all having fun, so don't make a big deal out of it! Most of us tend to watch others and do what they do, and thus a habit is formed. My purpose in writing this is to promote alternate points of view, particularly those that don't tend to get a lot of attention. I frequently read advice online to build light, and everybody knows it's a good idea, but a few seconds later the discussion returns to other topics, such as how large an engine or fuel tank can be crammed into a model, and how much extra reinforcement should be added to the landing gear, engine mount, and wing attachment points to compensate.

Back in the early days of RC everything weighed more. Airplane kits frequently contained hard balsa, planes were covered with fabric and dope, engines were heavier and less powerful than today's engines, and of course radio gear weighed a ton. Because radio gear was also unreliable, it was a good idea to add reinforcements here and there to strengthen an airplane against an all too likely crash. RC was a hobby pursued by individuals with an unshakable determination to get the plane in the air. A wallowing flight at low altitude around the field was considered a triumph. Those guys knew how to have fun.

As radios and engines became lighter and more reliable in the 1970s, designers embraced the idea of lightening the load. This was the era of the Telemaster, Lazy Ace, Funster, and other lightweight designs. In the 1970s the magazines also published a lot of classic 1930s designs updated for RC, because of the new opportunity to enjoy classic lightweight flight with modern reliable engines and one or two servos for control. Experienced builders in those days had the habit of reducing weight in any way possible, and were rewarded with fine flying models. Today even smaller radios give us the unprecedented opportunity to build lighter planes than ever, but for some reason it is now surprisingly common to add weight. Instead of enjoying the weight advantage of a light radio, most guys take the opportunity to add extra servos, putting one or two on each aileron and one on each elevator half. Then a bigger battery is needed to feed the servos. And of course now that we can all own dozens of engines, why not use the biggest one that will fit? Instead of enjoying the lightness that is allowed by technology, a lot of people add extra weight, just because they can.

Most of us have noticed the trend from glow engines toward gasoline engines. The usual reason given is that gasoline is more widely available and less expensive. A gasoline engine suffers a power penalty compared to a glow engine of similar displacement, so a 20cc gas engine will typically replace a .60 (10cc) glow. For a real-world example, consider the Telemaster.

My RCM Senior Telemaster has an OS.70 Surpass engine, and is a little bit overweight because I built it with hard longerons for durability and didn't take extraordinary measures to keep the structure light, because I don't want crash damage on the way into the car. It has one cheap servo per aileron, and a 4 cell AA nickel battery. I can fill the 10 ounce tank and fly for half an hour at moderate throttle settings, then land with half a tank of fuel, if I can get it to land at all. It soars like an eagle due to its light wing loading. I have seen Senior Telemasters with 25 and 30 cc gasoline engines. These planes typically have big slabs of wood behind the firewall to dampen the vibration. The landing gear mount needs reinforcement. The wing attachment area needs reinforcement. The entire tail section needs bracing to keep it from twisting. That's a lot of extra effort to make sure the plane doesn't fall apart. Generally these planes end up weighing 10 pounds or more, and people act like this is normal even though the original spec weight in the RCM article is 6 pounds.

It should be noted that such a plane is fun to fly, and there's nothing wrong with it. But there is no discernible advantage. Consider the alternative. I can take my Telemaster out for the afternoon, and for about $3 worth of glow fuel I can fly until I'm sick of it. If I had made more effort to keep it light I could have used a smaller engine and trimmed that to $2. So money isn't a big deal. I didn't even have to buy one of those gasoline engines. But the really interesting point is that it's a whole different flying experience. Any schmoe can build a heavy plane with a monster engine on it, and they all fly the same. But those who put forth the effort to build extra light are rewarded with an inspiring experience. A light plane really does fly better. The funny thing is that I'm not even talking about careful selection and gluing of balsa. What I'm really talking about is big engines, plus all the stuff that comes with them.

Sometimes I question myself when I start ranting about a topic such as this, because everybody has heard it all before. But then I think about it for a bit and I remember that we are surrounded by overweight, overbuilt, overpowered airplanes. Forget the gasoline engines for a bit and turn your attention to the classic 40 size glow model. Most guys want to use a 46 because well, why not? Now the plane goes faster, so you have to add braces to make sure the tail doesn't get ripped off, and use better servos to prevent control surface flutter. May as well use a servo on each aileron, right? The 46 may be lighter than its 40 size cousin because it's just a bored out version of the same engine, but a 46 is always going to have heavy castings with ball bearings and a big muffler. It all starts to add up to an overweight plane. What if you start with a modest sleeve bearing engine and match everything to it? Most guys wouldn't even consider this, because it just sounds ridiculous. "Hey, try a dinky engine. How about a 40 FP?" The answer will be "Are you crazy? I might as well just throw this plane in the garbage."

I'll give you a real world example of how a dinky engine can be an improvement. In my early RC days when I was broke I always wanted a mid-size 4 stroke engine, so I saved my nickels and dimes and bought a second hand OS 48 Surpass and put it on a newly built RCM Trainer Jr. It flew well and was a lot of fun. One day the crankpin broke off of the crankshaft, so I replaced the 48 with an OS 40 FP, which was the only suitable replacement I had on hand. The engine itself was considerably lighter, so I was also able to eliminate the tail ballast which had been necessary to balance the Surpass engine. The plane lost around half a pound, which is pretty impressive for a 5 pound plane. This was a step down in power, but the plane flew so much better I could hardly believe it. Manoeuvres were quicker, turning radius was smaller, take-off was shorter, glide was flatter, climb rate was better. The plane was better in every way, just by fitting a smaller engine that was renowned at the time for being "gutless".

You may be sceptical about the difference that a few ounces will make, so I have another example from personal experience. A friend built the Divider and tried it with various engines including the Enya .19

VI, OS.25 FP, OS.25 FSR, and OS.25 SF. The weight difference between these engines is only a few ounces from heaviest to lightest, but we noticed a definite improvement in agility with the lighter engines. The heaviest engine (.25SF) provided a significant increase in top speed and climb rate, but the plane just wasn't as nimble, which had a serious effect on the overall experience of flying the plane.

A customer recently emailed me about modifying the Lazy Ace he is going to build from my kit. The Lazy Ace is a remarkable design. Looking at the plan, it's obvious that it was conceived as a biplane version of the Senior Telemaster. I fly mine with a Saito 91, which has more power than the .60 engine the plane was originally designed for, but weighs the same as an old .60. My Lazy Ace is true to its heritage as a super lightweight, moderately powered, lazy, floaty plane. Flying it is simultaneously entertaining and relaxing.

My correspondent is considering a Saito 180 for his plane. The engine weighs 12.6 oz more than mine and will require a heavier mount, a heavier propeller, a heavier firewall, and considerable firewall reinforcement to dampen vibration, and a bigger tank. This in itself isn't a problem, because the Lazy Ace is a big airplane and is capable of carrying a lot of weight. But what about the strength of the airplane itself and all of the hardware, bracing and fixtures? With twice the engine displacement it may be hard to keep the plane slow, so it would probably be a good idea to upgrade the wing struts, add bracing to the tail, add some torsional braces inside the fuselage, and of course upgrade the landing gear to carry all of the add-ons. Can it be said that such a plane would be overpowered? Not really, because now it's a heavier plane. If somebody were to read me the new specs and ask for an engine recommendation, I would probably consider a Saito 180. Starting with a set of parts for a Lazy Ace you could build it stock, fit a lightweight engine, and fly a light airplane, or you could add a bunch of extras, fit a monster engine, and have a properly powered, normal airplane. They both fly well.

But we've all flown "normal" planes before (by today's standards). Building another normal plane cancels the opportunity to fly a Lazy Ace, which in its original form was a surprisingly light airplane for its size.

This is a point of view that doesn't get a lot of support, so I thought it would be good to share it. More power usually requires more strength, which requires more weight, which requires more power, etc. Don't get sucked into that loop. I have a big collection of lightweight sleeve bearing engines that get a lot of air time because they allow me to build a plane lighter, burn less fuel, and use cheaper servos and smaller batteries, without worrying about structural failures. The result is a superior airplane, rather than one of those crazy rocket bricks I usually see other guys flying. It's usually not the weight of the balsa that pushes you over the edge. It's equipment choices. Choose wood with enough strength to withstand handling and transport, then pick a lightweight engine on the small end of the recommended range. The engine will be adequate because it doesn't have to haul a heavy engine around. Then keep the rest of your equipment light to match the engine. Try it and you'll like it!

The Building Board

Have just finished this Balsa USA kit.

The model is a Smoothie XL

Over the last 6months I have been building this kit. It has a wingspan of 88.75inches

and a wing area of 1396sq inches with a fuselage of 72inches.and 14 to 16lbs.

It has a DLE30cc for power and took 2 rolls of 5mtrs each to cover.

The build was very straightforward with excellent die cut parts and every piece fitted perfectly.

Gorden did the printing on his letter cutting machine. Thanks Gordon.

This model is meant to have nice big spats but I cut the wheel wire to short by mistake and was unable to fit the spats. I don't mind as they can be a nuisance when the grass is wet and clogs up the spats.

Now waiting on a test flight when we get some good weather.

Cheers

Alan

Also, Gordons mystery model breaks cover

It is shown here at the field for its test flight and once Gordon sorted out the motor it flew very well.

Elevons only as there is no stabiliser The name of the model is a TRACER 60.

And when Lyndon isn't cooking up a 5-star Master Chef BBQ dinner in his kitchen, he uses it for setting up an electric motor for both Thrust line and Thrust angle. Not many of us would get away with this, and then again some of us don't need to either 😉 But I guess you can do whatever you want till your wife gets home.

Additional highlights from the Big Model Rally

Firebrands new and improved website.

Everything is now at your fingertips which includes:
- Search items
- Add to Cart
- Card payments
- Shipping calculated at Checkout (please note shipping criteria for ARF's which are detailed in the Listing)
- Automated order fulfilment advice & tracking
- Mobile

Navigation is now easy and intuitive. *I can vouch for this as it was very easy to navigate in comparison to the old website, Ed.*

As part of the stocktake and product review exercise Steve undertook in creating the new site, a lot of product is flagged as "Clearance Items" so please make sure you check these out as you may find some gems at bargain prices here!

Steve is looking for user feedback so he can make improvements as required.

So check out the **new FirebrandAeroRC online store** , try it out, and tell others about it.

www.firebrandaerorc.co.nz

Email: sales@firebrandaerorc.co.nz

Phone: 021 2754098 (Steve Wilson - Director)

78th MFNZ Nationals are ON!

The Nationals Team are delighted to announce that the coming 78th Nationals are ON! We have a new venue and location for the 78th Nationals and have been working very hard on sorting logistics. Our goals were to find a better location that is easier to find fields nearby, with all the functionality we need, in fantastic condition and which provides for closer accommodation, allowing everyone to mix-n-mingle more easily.

First, the dates. To hopefully hit a more reliable weather pattern and easier travel and allow new year celebration and family time, the dates will be :

- 3rd January (Saturday) Registration Day
- 4th January (Sunday) 1st days of flying events
- 8th January (Thursday) Final day of competitions
- 8th January, Prizegiving at 7.30pm

The venue is in Waipukurau, Central Hawkes Bay. Not only have we found an awesome site, but there are many activities and attractions in the region for those not actually competing, wineries, beaches, and more. Napier is less than an hour away. Waipukurau is an easy location to get to from North and South.

Highlights of the location include:

- A great sports complex with the facilities that we need for indoor flying, meetings
- Administration including meeting room for SIGs and most important, socialising. Baldrick's Burgers and the Prizegiving will be here.
- Right across the road is the local camping ground with facilities far exceeding what we have had in recent times including a very good Kitchen and dining area complete with freezers and fridges plus a laundry
- The camping ground has power sites and tent sites and some cabins
- There are three motels in town
- Fields are expected to be easier to find as this region peaks at a different time compared with the central Wairarapa. It's also Hamish Galloway's local area and he knows it and its Farmers.
- All the venues are within a block of each other so we can attend all functions with ease!

Charges will be reduced this year, reflecting the savings we are making in the venue costs. Full registration will be reduced by approximately 50%, that is $30-$40. Also, we are instituting a "Day fee" of $20/day for those who expect to attend up to two days.

Waipukurau Holiday Park

This time, we will not be managing camping, the Holiday Park is an independent organisation, and we urge you to make your bookings as soon as possible, They are expecting us in large numbers; quote "MFNZ Nationals" so they know you are part of us. Look them up on this link. https://waipukurauholidaypark.co.nz/

Motels

There are three motels available: two are within 5 or 6 minutes walking from the venue, and another further away on the main road south. They are expecting us in large numbers; Look them up on these links; Close by are:

- Tukituki motel on SH2: https://www.tukitukimotel.co.nz/ Have 14 units, they have booked all of them for us, and if you quote "MFNZ Nationals" they will offer a $10 discount
- Fergusson motor Lodge on Peel St: https://www.fergussonsmotorlodge.co.nz/ and quote "MFNZ Nationals" so they know you are part of us.

Also in the town, a couple of km away

- Thornton Lodge Motel: https://www.thorntonlodge.co.nz/ is on the main road south toward Dann they have 16 units. Quote "MFNZ Nationals" so they know you are part of us.

We repeat, note all accommodation needs to be booked directly and we would suggest that you start planning fo this now.

The facility includes the Sports ground on the junction of SH2 and River Terrace adjacent to the Tukituki River and in this image includes those labelled as Russell Park and if we need, the CHB A&P Assn.

The town hall will be used for prizegiving supper and all functions after field functions with the availability for SIG meetings (in separate room). As things develop we will keep you all posted via the Nats website

Get booked in NOW! January 3rd to 8th 2026 . We have booked Hawkes Bay Weather….

Servo Arm Length vs Output Strength

If a servo arm can lift 10kg at 1cm arm length, what weight can the servo lift with a 2cm arm length
If a servo arm can lift **10 kg** at **1 cm** from the center hub, then at **2 cm**, the **effective lifting capacity is halved**. Here's why:

🧮 The Physics Behind It

Torque is constant for the servo:
Torque = Force × Distance
So if:

- Torque = 10 kg·cm (from 10 kg at 1 cm)
- At 2 cm, the same torque must be maintained

Then:
Force = Torque ÷ Distance = 10 kg·cm ÷ 2 cm = 5 kg

📉 Summary Table

Arm Length (cm)	Max Liftable Weight (kg)
1	10
2	5
3	3.33
4	2.5

So at **2 cm**, the servo can lift **5 kg**—half the weight it could lift at 1 cm.
This is why longer arms give you more reach but less lifting power. If you're designing a robotic arm or linkage, balancing reach and strength is key.

A diagram that visually shows how the **effective force at the tip of a servo arm decreases** as the arm length increases, while the **torque remains constant** at **10 kg·cm**.

🔧 What the Diagram Shows:

- **X-axis**: Arm length from the center hub (1 cm to 4 cm)
- **Y-axis**: Effective force at the tip (in kg)
- **Torque**: Constant at 10 kg·cm across all lengths
- **Force values**:
  - 1 cm → 10 kg
  - 2 cm → 5 kg
  - 3 cm → 3.33 kg
  - 4 cm → 2.5 kg

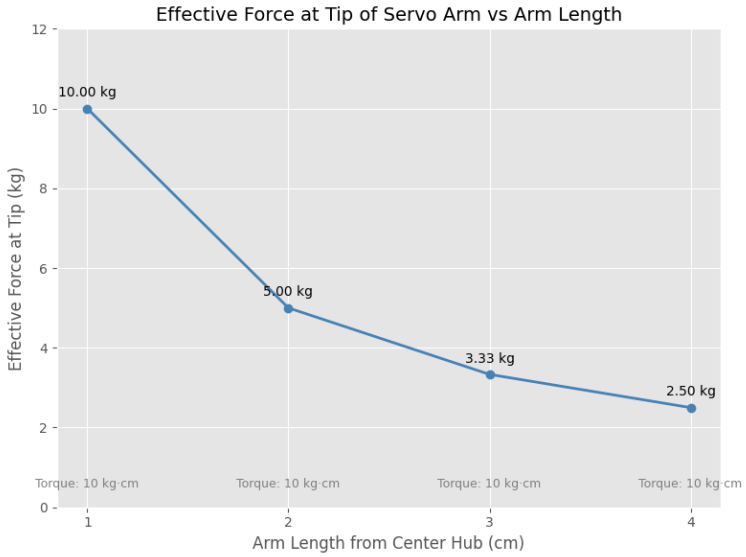
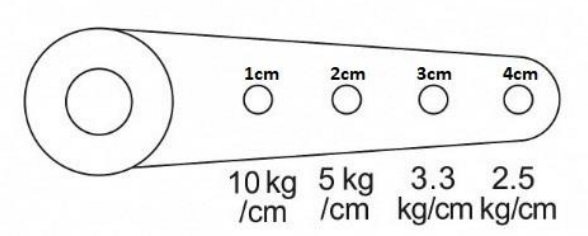


Diagram not true to Scale

This inverse relationship is key in servo design—longer arms give you reach but reduce lifting power. The diagram makes this trade-off crystal clear.



NZ SOARCHAMPS 2025 - October 16th <> 19th.

Event Timing: October 16th <> 19th
Event Address: Black Bridge, Hawkes Bay
Contact us at 0275 570470 Kevin Botherway

Soarchamps 2025 October 16th to 19th in the sunny Hawkes Bay! 7 Various events stacked up for some great Model Glider Soaring. F3B F3J F5J F3K F5K Radian and the new eRES. We plan to have evening meal on the Saturday with a seminar from Joe on model overall setups.

Enter Here: https://forms.gle/aySKX3rvkcbhq3h6A

Notice of the sale of Simon Cherrington's Planes

Long time model aircraft enthusiast Simon Cherrington has decided to sell most of his extensive collection of model aircraft. He has most generously decided that all proceeds from the sale are to be donated to the Whakatane Model Aircraft Club. He asked that the sale of aircraft should be coordinated by fellow club members Dave Bailey, Marc Khull and Jim McEwen. All aircraft were initially offered to current WMAC club members.

Of note is that the flying strip at Whakatane is restricted by drains and fences and many of the models are large enough to be marginal within such restrictions. It has been decided that the next step is to offer them to members of Clubs not too distant from Whakatane, the reasoning being that members are close enough to collect the aircraft from Whakatane or to meet half way, thereby saving the complications of packaging and freighting them around the country.

Models remaining unsold after a suitable period will be listed on TradeMe and other online trading sites. Approximate sale prices and reserves for each model were discussed and decided with Simon's input.

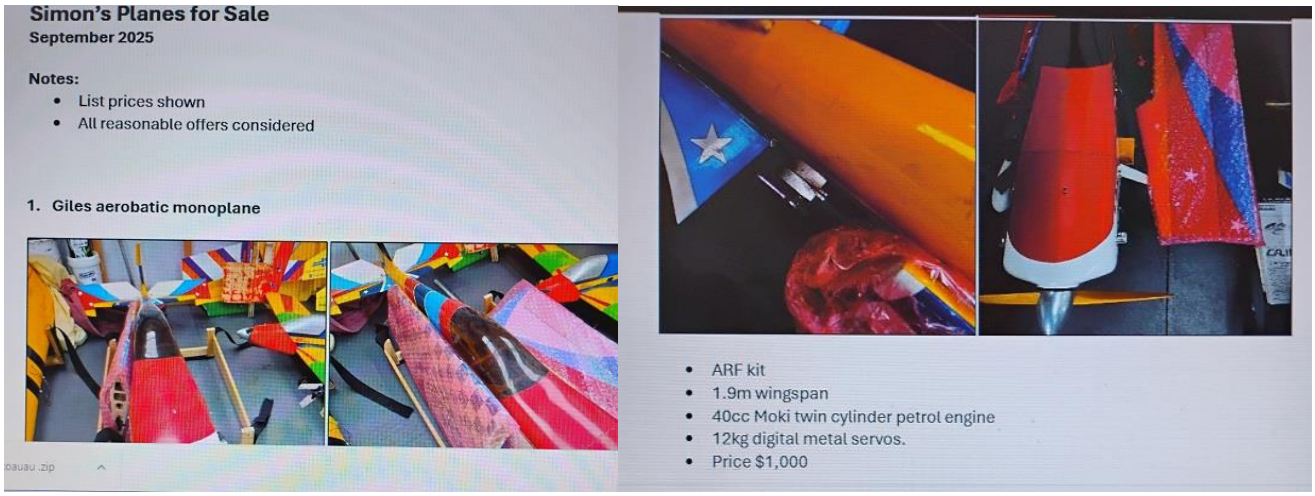
Attached is a list of all models with some relevant details and the asking prices.

Some of the pictures show the model unassembled as there were too many to clean and put together in order to just take a photograph ! Better pics of specific models could be provided to interested parties on request. Should any one wish to know more or purchase they should contact Dave on 0211882517, Marc on 0273292144 or Jim on 0210762323 .

Simon did not want to participate in the sale process but would be willing to provide information about any of the models if necessary. It should be noted that Simon has been particular about the state of his model aircraft. Most are fitted with the best servos and accessories available at the time. Where damage has occurred to (say) servos, they have generally been replaced with top-of-the-line parts. Details of any damage that has been noticed while re-locating the models are noted on the list, but some instances may have been missed. Please note that all models will be sold to the first person offering an amount that is acceptable to those managing the sale, and on an as-is, where-is basis.

No guarantees are offered or implied. Dave Bailey, Marc Khull, Jim McEwen

26 September 2025.



2. Avios Hawker Sea Fury

- 1.2m wingspan
- Electric retracts
- Flaps
- Bomb drop kit
- Price $300

3. ESM Hawker Sea Fury

- 2m wingspan
- NGH 38cc petrol 4-stroke
- ESM aluminium electric retracts
- ESM oleo struts
- Flaps

- 2m wingspan
- NGH 38cc petrol 4-stroke
- ESM aluminium electric retracts
- ESM oleo struts
- Flaps

- Handbook
- Price $1,200

4. Kyosho Spitfire

- ARF kit
- 1.83m wingspan
- OS 120 4-stroke
- Aluminium electric retracts
- On-board glow system
- Price $800

5. Stearman

- 1.83m wingspan
- EVO 35cc 7-cylinder 4-stroke radial engine
- On-board glow system
- Not flown
- Motor bench run-in
- Price $2,000

6. RadJet 800

- Electric
- Suits 1.6 4S battery (not supplied)
- Price $80

7. Great Planes Cub

- 2m wingspan
- OS70-80 4-stroke
- On-board glow system
- Floats supplied
- Price $500

8. Tuccano

- 1.15m wingspan
- Scratch built
- Suits 2,200 3S battery (not supplied)
- Needs minor tail feather repairs
- Price $80

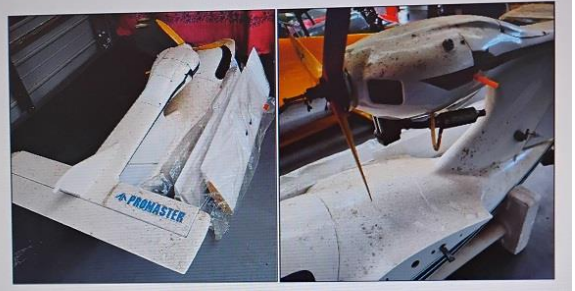
9. Eachine Corsair

- 400mm wingspan
- Complete
- Includes transmitter
- Price $100

10. Nemisis Racer

- 1.42m wingspan
- Versatile fast or slow flyer
- OS 55(?) 2-stroke
- Price $300

11. ProMaster Seawind



- Fibreglass fuselage
- ASP 80 4-stroke
- Wheels supplied
- Price $500

12. Radian

- Foamie electric-powered glider
- 2m wingspan
- Ailerons and flaps
- Price $300

13. FMS PassionX

- Aerobatic pattern flyer
- Batteries supplied
- Price $300

14. Caliber 30 Helicopter

- OS 30 2-stroke
- Transmitter
- Manuals
- Price $100

15. Great Planes Ultra Sports

- 1.4m Wingspan
- OS Max 60 2-stroke
- Retracts
- Receiver
- Price $100

16. Edge 540

- Complete in box
- Includes transmitter
- Price $100

17. Parkzone J3 Cub

- Complete in box
- Includes transmitter
- Price $100

18. Hornet

- Complete
- Ducted fan
- Suits 1,600 4S battery (not supplied)
- Price $60

Models for Sale on behalf of an Estate

Enigma red/silver
Price: $80

- Hobbyking ARF several years ago - still comes up on Google
- 960mm span
- Motor: ECO 2820 960 Kv
- ESC: no-name 40A
- Servos: 4 Turnigy 5g
- Overall good condition


Profile fun-fly (GeeBee like)
Price: $75

- 1220mm span
- Motor: Turnigy Air 3040
- ESC: no-name 60A, looks very old
- Servos; 4 JR ES539
- Overall good condition but seems heavy

Hyperion Sniper Foamie
Price: $30

- 960mm span
- Motor: Turnigy D5336/8
- ESC: Turnigy Plush 40A
- Servos: 3 Bluebird 5g
- Overall condition is rough

Trex 800E Trekker Helicopter
Details are minimal for this:
Price: $500

- Length 1460mm, rotor diameter 1400mm
- Motor: Align Super Power BL750 MX 450Kv
- ESC: Castle 120A

Spektrum DX10t Transmitter
Tray Radio
Price: $200

Sale Items are "collect only" from Te Awamutu
Contact:
Gail Mob 0272106969.

2025 / 2026 NZ Pylon Calendar

2025

Saturday 4 + Sunday 5 October ~ Season Opening, Airsail MAC
Saturday 8 November ~ * Waharoa
Saturday 13 + Sunday 14 December ~ Christmas BBQ - Airsail MAC

2026

3 - 8 January 2026 ~ Nationals, Hawkes Bay
Saturday 14 + Sunday 15 February ~ Waikato Champs - Airsail MAC
Saturday 14 February ~ **AGM** (at the completion of flying)
Saturday 21 + Sunday 22 March ~ * Norsewood - Galloway field
Saturday 18 + Sunday 19 April ~ End of season BBQ - Airsail MAC

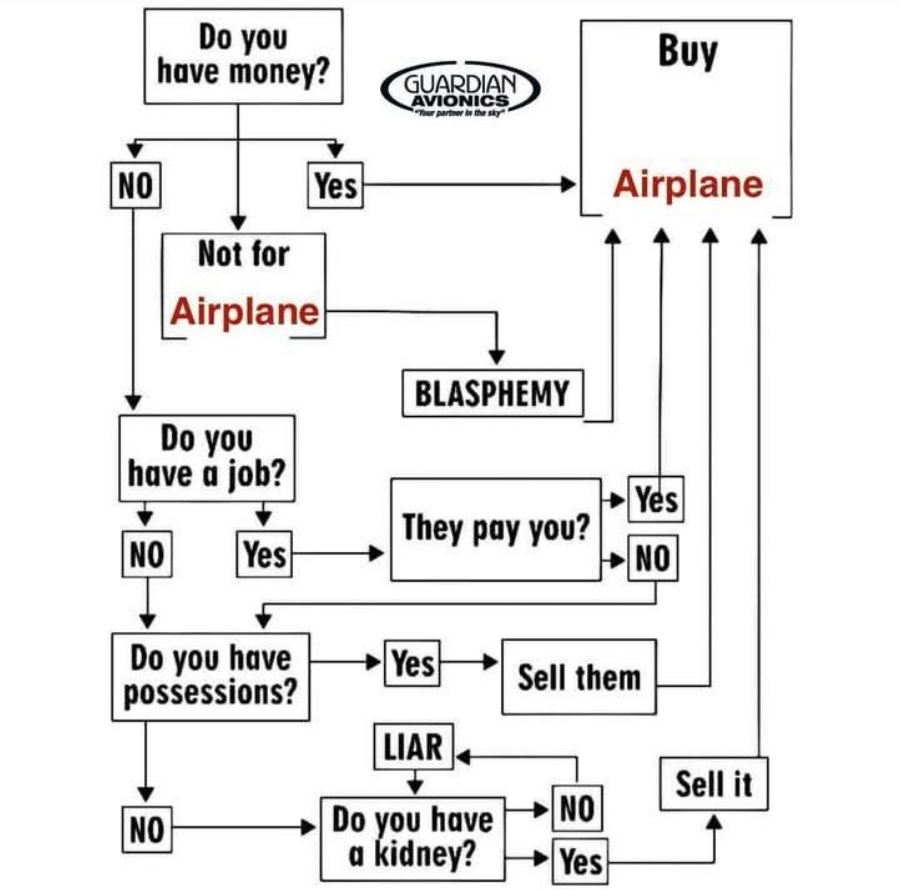
* *Venue TBC*

Saturday/Sunday : Saturday ~ Start **12.30**pm
Sunday ~ **9**am – **3.30**pm
One day events : Start **9**am | Finish **4**pm
No Lunch break on one day events

Daylight Savings :
Starts ~ Sunday 28 September 2025 | Ends ~ Sunday 5 April 2025 **(Easter weekend)**

NZ Public Holidays : (*Observed*)
2025 : 27 October ~ Labour day
2026 : 6 February ~ Waitangi
3-6 April ~ EASTER
25 April ~ ANZAC day
10 May ~ Mothers Day

Parting Shot

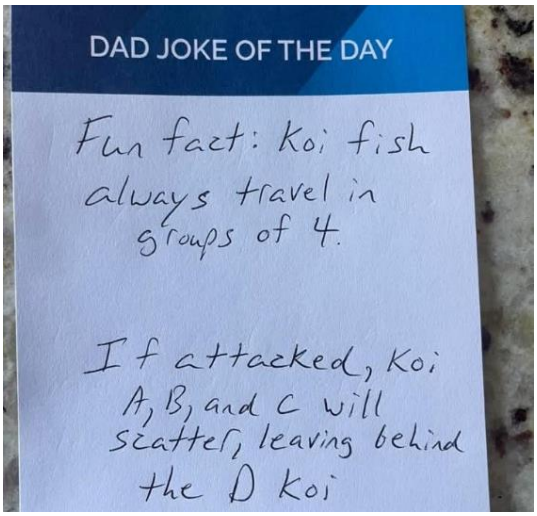


Coming Events 2025

What's On, When and Where

October

Saturday, Oct 4 (Postponed til 11th Oct)	RC Pylon Comp - Airsail MAC
(Cancelled)	RC Scale Competition - Waharoa
Sunday, October 5	
(Postponed til 12th Oct)	RC Pylon Comp - Airsail MAC
9:00am - 4:00pm	HMAC Float Plane Day - Lake Kainui



November

Sunday, November 2	
all-day	Old Models Day
Saturday, November 8	
all-day	RC Pylon Comp - (Waharoa)
Sunday, November 16	
9:00am - 4:00pm	HMAC Float Plane Day - Lake Kainui

Late addition to the Calendar

Imac/Pattern Aerobatics Competiton

Saturday/Sunday 18 & 19th October

Smack Bang in the middle of the North island, this is going to be a combined event to get as many people there as we can for a great "Season Opener". As we expect really good numbers, this is going to be a "pick your favourite" event to fly, and bring one model. We will figure out the classes that will be run based on the numbers. Venure: Wally's place. 145 Tramline Road, Patetonga (Thames direction)

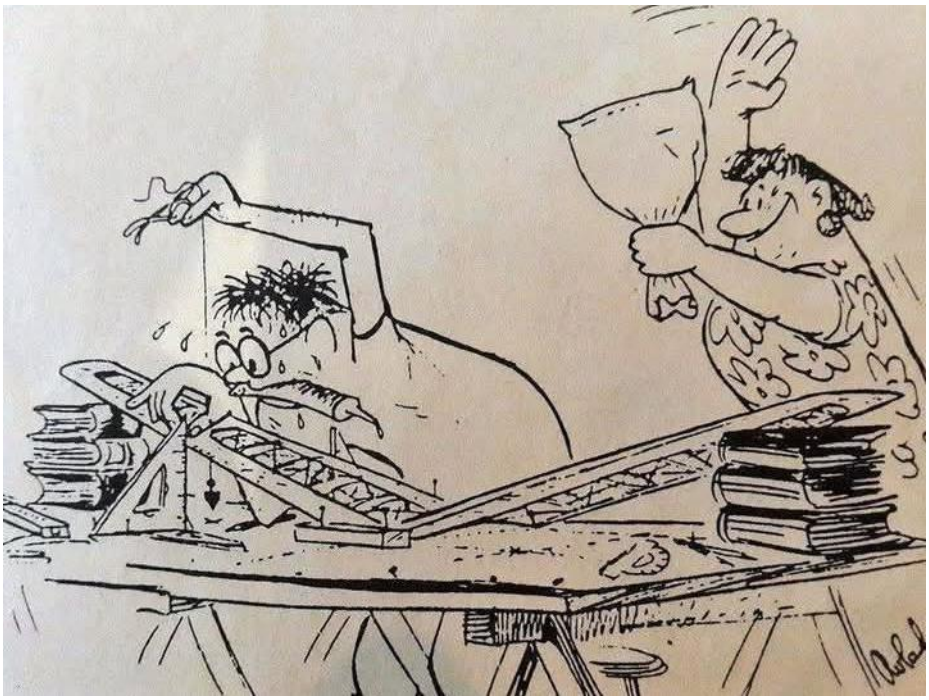
Register for the event at this link:

https://www.nzrcaa.co.nz/

Cheers

Frazer (**niaerobatics@nzrcaa.co.nz)**

Till next month, stay safe



Remember to put that DO NOT DISTURB notice on the door

Please refer to the clubs website for any cancellations or additions to programmed events

Next Flight Lines November 2025
Newsletter deadline – Wednesday 5 November

For further up to date event info please visit:

http://www.hamiltonmac.org.nz/

Working Bee Effort…The start of great things 😊

A job well done & done well…thanks team.