

TORQUE



April 2025

**Official bulletin of the
Christchurch Model
Aero Club Inc.**



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Frontispiece: *Graham Moffat does a low pass for the editor's camera with his Seagull models—Piper L4 Grasshopper. This 2.286m wing-span ARF scale model is powered by a petrol Stinger Series 20cc Rear Exhaust from RCGF.*

NOTE: *The opinions expressed in this bulletin are not necessarily those of the CMAC committee.*

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President's AGM Report

I am pleased to present my report to the 2025 CMAC AGM covering our achievements in the 2024/2025 year.

Some of our key achievements include:

- * CMAC Registration under the Incorporated Society's Act 2022
- * Preparation and registration for the new Wings program examiners
- * Ongoing Improvements to the RC power patch with the building of new model set up tables, 2 more to be built
- * Ongoing improvements to the field track with the laying of shingle, more shingle to follow
- * Maintaining member numbers with new member flying training
- * Excellent results in NDC competition
- * Strong camaraderie at Club events and BBQ,



One of the most notable events was the fire which swept through several of the CMAC fields, but we were very lucky that the container and power patch were not harmed. However in some ways the fire was a blessing in disguise with the new regrowth and the harvesting of the damaged pine trees offering another site for the Glider fraternity. This has further enhanced our requirement to be so careful at the field during dry weather. Luckily, we were not responsible.

I would like to thank the executive committee, Trevor Henderson, Graham Moffatt, Alan Knox, Bill Long, Julius Long, Stewart Morse, Andrew Palmer and Ian Harvey.

Thanks to Graham Moffatt for his efforts and valuable contribution over the year in maintaining the CMAC grounds to a very high standard. It makes the role of President a lot more pleasant when working with such a committed team.

I would like to thank Ian Harvey and Andrew Palmer for their contributions to the Torque and website respectively. Ian is consistently producing an excellent Torque magazine.

I would like to acknowledge the dedication and contribution of our outgoing Treasurer Trevor Henderson. Trevor has contributed to CMAC as Club Treasurer for 38 years. Dedication cannot be any higher and it has been an honour to have worked alongside him for only a small number of those years.

I look forward to seeing CMAC continue the upward trend of development and success in the upcoming year

It has been my pleasure to represent you all as President for this last financial year and I wish all of our members all the best for the 25/26 year and happy flying.

Grahame Hart; President CMAC

Committee Reports:

Secretary Report: The membership is reasonably steady with 57 financial members.

One of the major projects completed this year was getting CMAC re-registered under the Incorporated Societies act 2022. We were originally registered under the Incorporated Societies act 1908 on the 30th Aug 1951. To get reregistered we had to update the CMAC Constitution as the new act required some new procedures to comply with the new regulations. The updated constitution was approved at the CMAC AGM 19th Mar 2024. The introduction of the new MFNZ membership card will make the membership administration easier and quicker.

Vintage Report: Vintage was pretty well supported from our little group of fliers throughout the year. Most RC and Free Flight classes had entries. We were the Vintage NDC Champions again. Flying was combined with the regular Sunday morning Free Flight sessions but also flown on nice days mid-week. These were advertised to all on our club internet CHCHMAC list and a number of the free fliers joined in.

It has been gratifying to see a few more taking an interest and starting to refurbish old models. Some new ones have been built too. Vintage construction is very much the stick and tissue style of old and is enjoyed by many. The RC models are easy to fly too making good trainers and are easier for our traditional Free Flight modellers to transition too.

Regular monthly club RC Tomboy events were flown when weather was suitable. Tomboys can also be used for NDC Sport Cabin Texaco events.

Soaring Report: Our soaring scene is well supported and we engaged with the Marlborough Associated Modellers in particular again in 2024 to determine the NDC championship. Both clubs fly just about all the Soaring NDC events each year. Some years they win and others we win. 2024 was our turn to be the Champion NDC soaring club but Marlborough's Rex Ashwell was the top scoring pilot so it was close.

A quick check shows we had 12 gliding fliers who recorded 180 scores across 35 events. That is a great effort and represents about 720 contest flights for the group. Soaring has evolved a little in recent years as additional electric classes have been added. These are now flown in preference to winch launched events by most around the country and CMAC is no exception. Two cheaper classes have become popular of late; eRES for electric 2M wooden gliders and F5K for electric 1.5m composite gliders which are very like our discus launched ones (F3K) but with motors fitted.

At the other end of the cost spectrum a number of the new 4M electric sailplanes have been purchased to update our fleet of late. These have super performance and have elevated the scores of all who have them. Finally we have John Shaw and Dave Griffin embracing the new Triangle racing classes. These are relatively new and use very up market electronics and data links in large specialist composite models. Scores are processed and stored on the web so they can compare their performance to a world wide data base. This is as close as we get to full size gliding as models race around virtual triangular courses in the sky.

Aerotow scale gliding is still flown by some but the initial flush of enthusiasm for this activity seems to have waned a little. Dave Griffin organised a bunch of two day events around the south island for those who are keen. In summary, soaring is going very well with club members achieving notable performance

Free Flight and Tomboy The first half of the year provided conditions that enabled some flying to be done for the NDC competition but the number of individual entrants was limited. Thanks to those who did brave the elements and managed to record enough times to get CMAC third place overall in free flight NDC. A very creditable effort from the small group of enthusiasts. The weather also prevented the Avon Trophy and Vic Smeed precision club event's being contested.

The Tomboy competition was also severely affected by the ever-present windy weather whenever it was scheduled. This resulted in only three rounds of flights being recorded over the whole year. A frustrating year with mother nature responsible.

Torque bulletin Another year and 11 more editions. The bulletin would not be a success if it were not for a handful of regular contributors. Although I have been able to get enough copy for each of the 49 edition so far published, it surprises me that more members do not contribute and share their knowledge, experience and / or images etc. It is a hobby that engenders endless discussion on a large number of topics, so I encourage the members to consider getting on the keyboard and producing some interesting copy to share with other members. Nevertheless, I have enjoyed the challenge of getting an edition out every month, but for how long I can maintain this record is open to conjecture. Many clubs do not or struggle to produce a regular magazine, but because CMAC has a strong competitive membership, there are always results that can be published.

Recording Officer's Report 2024: It's been another great competition year for the club. Congratulations to everyone who participated.

We are the Champion NDC club of New Zealand thanks to regular competition in Soaring, Free Flight and Vintage. Not only did many of us fly but some did very well too. The January Torque provided details. Our own club championships are assessed on just our group of flier's results rather than their NDC Placings which take in their Country wide results. The NDC scoring allocation method is used though.

We have annual stand-alone contests throughout the year. The Cirrus trophy was flown at CMAC as the John Ensoll Memorial event. The contest was for two-man teams flying 2 meter electric gliders for the first time. This is an interclub event with teams randomly drawn from all clubs. This year's event was won by two of our own, Keith Elliott and Allan Knox. The Avon trophy (FF) and Vic Smeed competitions were not flown in 2024.

Control Line Report : Control line activity within the club has continued at a modest scale over the last 12 months. However, a significant milestone was utilising the control line circle to host Round 8 of the New Zealand CL Aerobatic Series over Kings Birthday Weekend 2024, which was well attended by punters from as far north as Auckland and as far south as Invercargill. By all accounts, this meeting was a success, although the weather was challenging, predominated by unseasonal gusty north westerlies. Many hours of maintenance and improvement work has been invested into the circle over the last 12 months, with the aim of improving the surface quality to the best it can be. This has involved manual work with a shovel, rake and wheelbarrow. The surface is a work in progress, but it is getting better all the time as a result of consistent and focussed effort. The access track (all 900 metres or it!) is periodically mowed to mitigate any fire risk posed by accessing vehicles. The recent fires were quite concerning, as they swept right through the control line area. It was with great relief that I discovered the short grass had acted as a firebreak, preventing the fire from taking hold on the flying surface itself, instead, burning its way around the circle perimeter. Fire loss on the control line patch amounted to one gate (the supporting fence post burned down) and a destroyed flying height marker post, both of which were reinstated within a week of club access to the site being reinstated. The circle sees regular use, mostly for aerobatics flying, by a small number of dedicated club members. I see it as a valuable asset to the club and I look forward to its continued use into the future.

Are our rules and regulation too onerous?

Dave Griffin addresses this question

The Model Flying NZ Wings renewal program is now underway. Of those that have completed it, the feedback has largely been positive or constructive. As the representative of Northern South Island Clubs at the MFNZ council, and also as one of the team that put the Wings Renewal program together, I hear the occasional grumble about regulations spoiling the hobby and maybe it's time to quit.



Rules are all around us these days, keep left on the road, speed limits, seat belts, our model flying is no different - Our club has rules designed to keep our access to the Willows flying site – such close the gate and only flying in daylight and limits on when IC engines can be run. Most rules are there for our safety and those around us.

Full size pilots must renew their licence and demonstrate 'competency' every 6 months to two years. We have not had any such requirement as model fliers until quite recently. CAA have added the ability for drones/ RPAs/ Model Aircraft to do more and get to slowly closer to manned aircraft. Model Flying has had some wins from this, the ability to fly heavier than 15kg models, to fly at night, beyond visual line of sight. But with that has come the expectation that we know more about the other airspace users and our responsibilities to each other. CAA initially wanted us to demonstrate our competency every year. MFNZ negotiated this to every 5 years with a program we run ourselves.

Our Model flying Wings renewal process is pretty straight forward - read some information on airspace and CAA rules, sit an open book test. This should take less than an hour, for many just 30 minutes. The flight test is pretty straight forward particularly if the examiner already knows you and your flying, plus some questions to check you are up to date with club and local area rules and expectations.

Back to the original question... is it really time to quit because the rules are overloading us? If you still thinking it is and don't want to follow this process, your wings badge will expire sometime in the next 5 years. You can then keep flying at the CMAC site as long as you are supervised by someone holding a wings badge. With a wings badge you can fly alone, fly anywhere in NZ below 400', at approved sites less than 4km from a licensed airfield.

I get to visit many clubs as part of my travels around NZ. Our CMAC site is one of the best in NZ – we have no close neighbours, less concerns about noise, a wide open space with room for all model flying interests from control line flying a few metres above the ground to Sailplanes soaring to the top of our danger area height limit and FVP models exploring the lateral boundaries, all available 7 days a week!

We all love building and flying our models, the minor inconvenience of refreshing or learning new things should not be the reason to give up on the hobby.

Prize Giving 2024 -

Overall Club Champions

| | | |
|----|----------------|-----|
| 1 | Allan Knox | 291 |
| 2 | Dave Griffin | 107 |
| 3 | Keith Elliott | 105 |
| 4 | Ian Harvey | 98 |
| 5 | Lynn Rodway | 89 |
| 6 | Peter France | 88 |
| 7 | John Shaw | 84 |
| 8 | Anton Nikoloff | 82 |
| 9 | Ken McMillan | 74 |
| 10 | John Beresford | 40 |
| 11 | Stew Morse | 31 |
| 12 | Geoff Pullen | 12 |
| 13 | Craig King | 9 |
| 14 | Tony Reddish | 9 |
| 15 | Roger Owers | 8 |
| 16 | Bill Long | 4 |
| 17 | Mike Johnson | 3 |
| 18 | Geoff Lilly | 2 |

Vintage

| | | |
|---|----------------|----|
| 1 | Allan Knox | 97 |
| 2 | Lynn Rodway | 53 |
| 3 | Stew Morse | 10 |
| 4 | John Beresford | 8 |
| 5 | Geoff Pullen | 8 |

Free Flight

| | | |
|---|----------------|----|
| 1 | Lynn Rodway | 36 |
| 2 | Allan Knox | 34 |
| 3 | John Beresford | 32 |
| 4 | Stew Morse | 21 |
| 5 | Craig King | 9 |
| 6 | Geoff Pullen | 4 |
| 7 | Bill Long | 2 |

RC Soaring

| | | |
|----|----------------|-----|
| 1 | Allan Knox | 160 |
| 2 | Dave Griffin | 107 |
| 3 | Keith Elliott | 105 |
| 4 | Ian Harvey | 98 |
| 5 | Peter France | 88 |
| 6 | John Shaw | 84 |
| 7 | Anton Nikoloff | 82 |
| 8 | Ken McMillan | 74 |
| 9 | Tony Reddish | 9 |
| 10 | Roger Owers | 8 |
| 11 | Mike Johnson | 3 |
| 12 | Geoff Lilly | 2 |

Control Line

| | | |
|---|-----------|---|
| 1 | Bill Long | 2 |
|---|-----------|---|

Free Flight Power

| | | |
|---|----------------|----|
| 1 | Lynn Rodway | 23 |
| 2 | Stew Morse | 17 |
| 3 | Allan Knox | 11 |
| 4 | Geoff Pullen | 8 |
| 5 | John Beresford | 3 |
| 6 | Roy Gunner | 2 |

Vintage 1/2A Texaco Trophy

| | | |
|---|----------------|---|
| 1 | Allan Knox | 7 |
| 2 | Lynn Rodway | 5 |
| 3 | John Beresford | 2 |

Tomboy Trophy

(Peanut Boy Trophy)

| | | |
|---|----------------|----|
| 1 | Lynn Rodway | 12 |
| 2 | Allan Knox | 11 |
| 3 | Keith Elliott | 8 |
| 4 | John Beresford | 4 |
| 5 | Geoff Pullen | 3 |



Top: Allan Knox (L) was overall Champion, Vintage and Soaring champion and runner-up free flight champion

Above: Lynn Rodway was free flight champion and runner-up Vintage champion. NOTE: Dave Griffin was runner-up overall champion and runner-up Soaring Champion.

Left: President Grahame Hart congratulates Trevor Henderson as the 2024 recipient of the Gary Burrows award for services to the club.

On Landing - John Dew's approach

There seems to be a degree of black humour associated with landing a plane. i.e:

- ◆ A good landing is one where the pilot walks away.
- ◆ A great landing is where the plane gets to fly again.
- ◆ Landing - running out of airspeed, altitude and ideas simultaneously.

Interesting fact: the Royal Flying Corps, predecessor of the RAF, insisted on routine dead stick landings as practice for the real thing, resulting in more casualties than the early days of WW1.

However you slice it, landing is the trickiest part of the take-off / fly / land trifecta. However smooth the take-off, however great the aerobatics, it's the landing that everybody watches with bated breath, and often evokes a round of applause upon success, or comments about a great recovery, or commiseration otherwise.

Things are a bit different in the full-size world of general aviation. There the danger is not usually in the touchdown, but in the hazard of colliding with another aircraft, because of the sheer number of planes in the air. This makes visibility the number one criterion - "see and be seen" – so the scheme of a landing circuit has evolved over the years. This takes the form of a rectangular path consisting of:

- ◆ crosswind leg
- ◆ downwind leg
- ◆ base leg
- ◆ final approach;

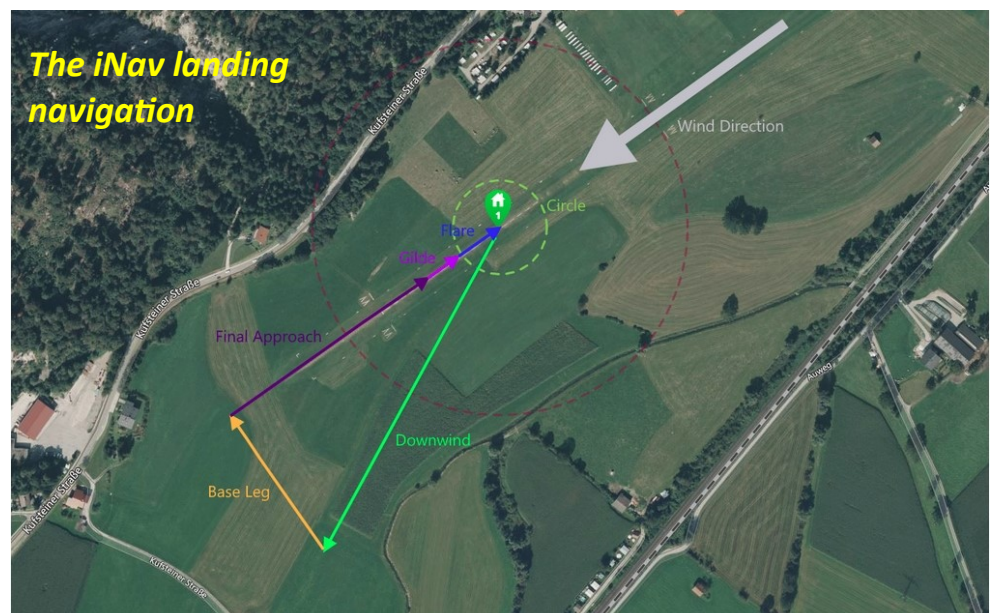
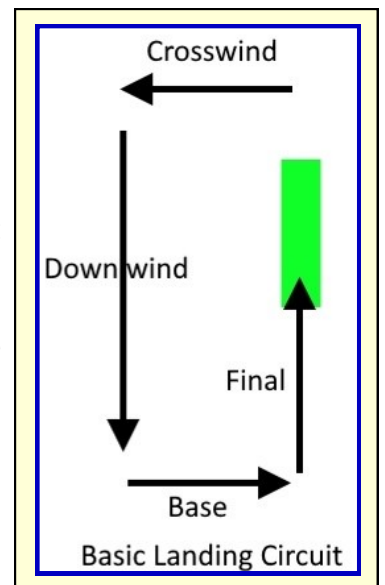
All linked by 90 degree turns. There are rules around "joining the circuit", most of which are aimed at ensuring safe spacing between craft.

In the model world the pilot's view is very different. In general we can see all the airspace, and all the planes in the air and on the ground, so collisions are avoided by the simple means of keeping out of each other's way. We don't need radio to communicate with other pilots, and there is no control tower involved. By and large, mid-air collisions are very rare.

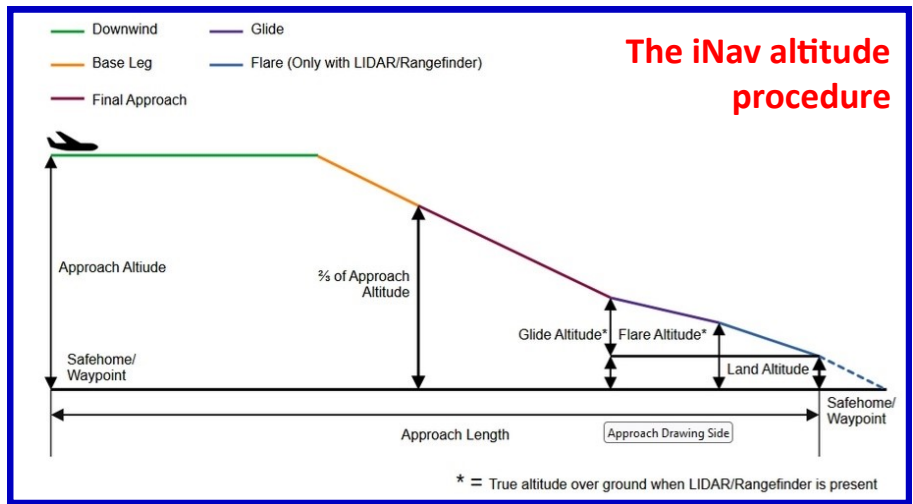
Flying FPV is somewhere in the middle. I am back in the cockpit, and have only a forward view, so I rely on my observer to tell me about other planes in the air or taking off and landing. Because the restricted vision is similar to a light aircraft, I tend to use the rectangular circuit, dropping the crosswind leg but retaining a downwind / base / final pattern.

Recently I have been investigating the auto-landing feature of iNav (the flight software I use). The procedure is different again. The craft first circles to estimate the wind speed and direction. Then, because there is no pilot visibility issue,

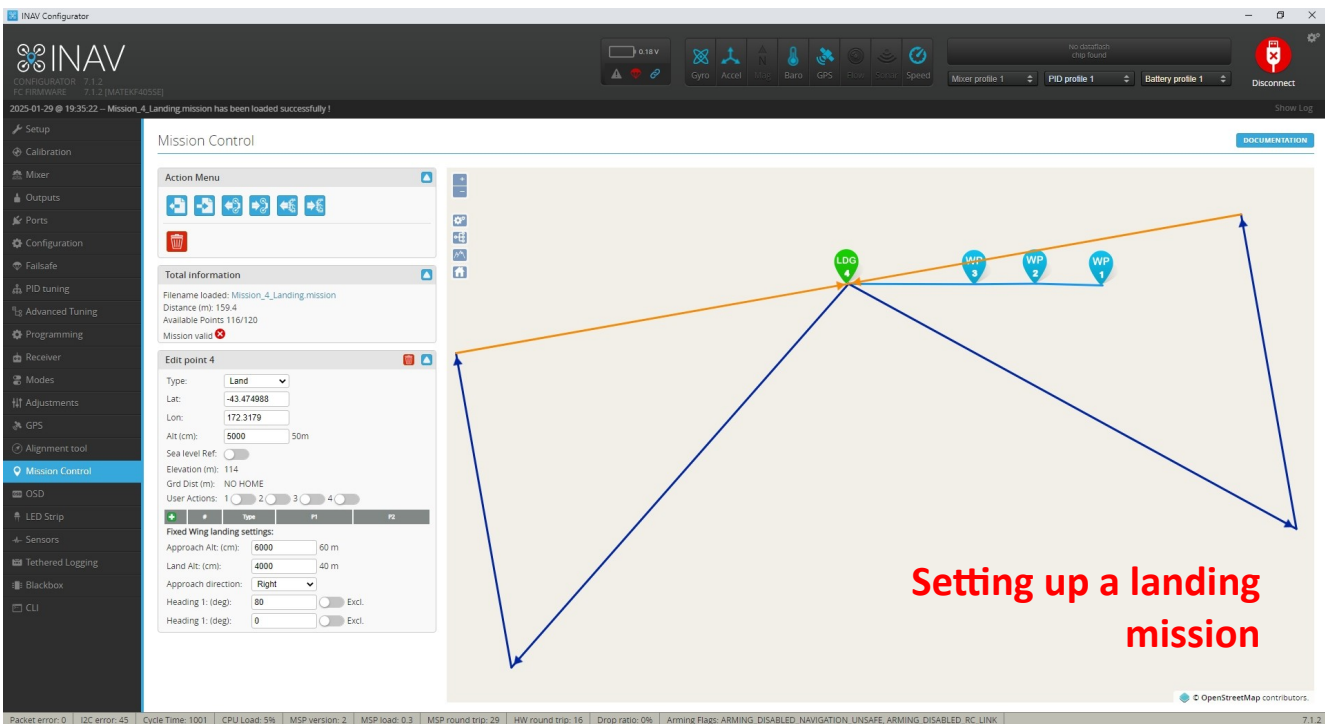
iNav flies a triangular downwind / base / final approach ending on the chosen landing spot. iNav uses ailerons and rudder to steer the course, and elevator and motor power to control the angle and rate of descent. When a pre-determined altitude is reached, the motor is switched off and the plane glides until touchdown. There is an optional "flare" phase which relies on a short-range Lidar rangefinder.



This all sounds fine and dandy, but would it work? After the usual struggle with the iNav documentation, I set up a waypoint mission which would start at a height of 50m and end with touchdown in the middle of the strip. I opted for a line-of-sight flight (not FPV) for the first trial to allow me to better judge the behaviour. After take-off and climb to a safe height, I switched on the mission. The plane duly flew to its first waypoint, circled to measure the wind, and headed off on a long downwind leg. After some tense moments it finally turned onto base leg, and again onto final approach. This was looking good. It was doing all the things it was supposed to do. Slowly, however, it became apparent that all was not well. Instead of heading for the centre-line of the strip, the course was veering off to the south. When it became obvious that touchdown was going to happen off the edge of the mown area, I aborted the mission by simply moving the Tx sticks, opened the throttle and climbed away. I felt that a significant cross-wind may have been causing the problem, so I had another go, with pretty much the same result.

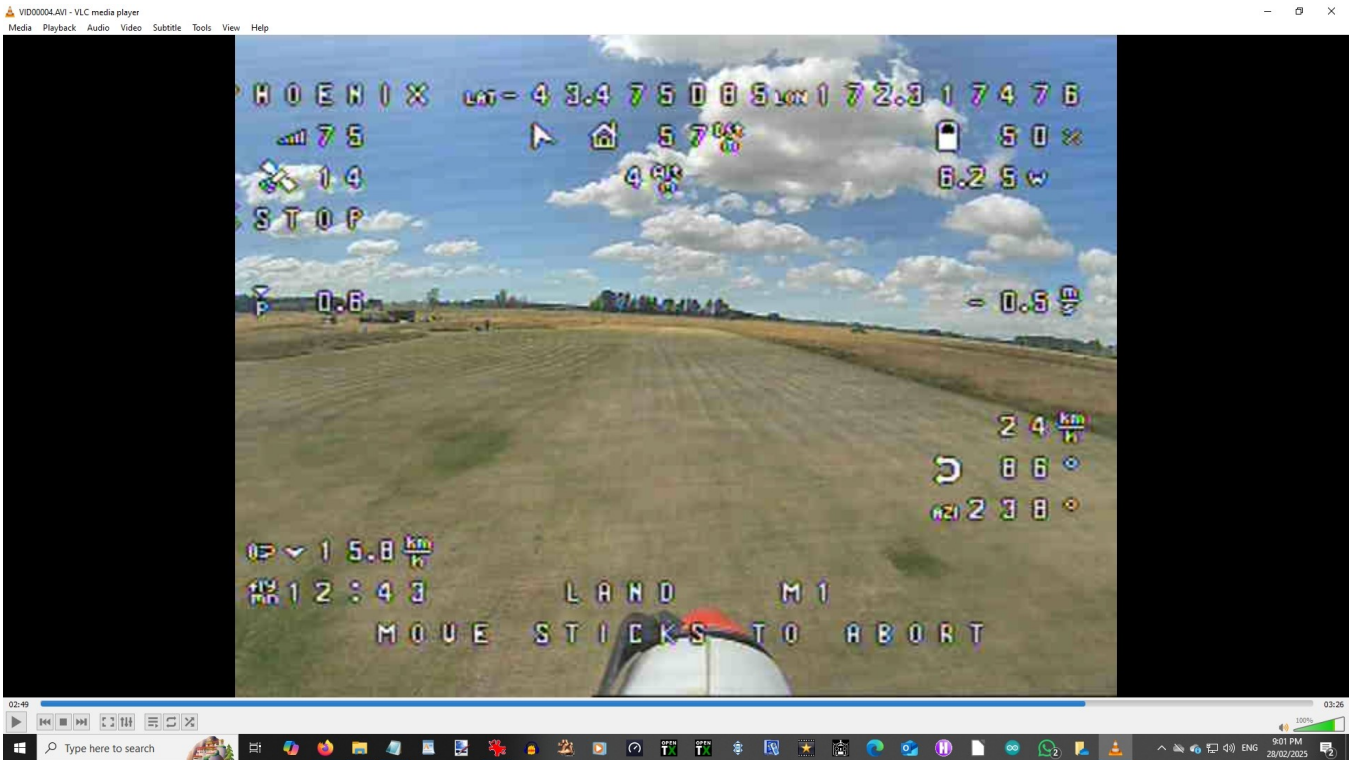


Back on the bench I deleted the programming, re-measured the lat / long co-ordinates and rebuilt the mission. And the next time out I was rewarded with an almost text-book landing. The lining up on the strip was spot on, right down the centre, and the touchdown was gentle. Fine. There was just one problem. My new mission was supposed to “land” at a height of 20m, so that after the pretend landing I could open the throttle and climb out safely. Instead of that, iNav had seriously undershot the landing site, and it just so happened that, as I let the final glide continue, the plane had put down in almost the right spot. Presumably, if I had programmed a landing altitude of 0m, which is where the strip generally is, the landing would have been way short.



I don't want to look a gift horse in the mouth, and it was a great landing, but I suppose I shall have to find out what happened to those missing 20 metres.

John Dew's landing—almost there!



John Dew flies FPV with all his gizmos. Ashley Glubb keeps an eye on proceedings, and makes sure John does not get lost.



Richard Matherson bought this Learjet from Freewing. It's all ready for its maiden flight. He reports that it's very well made (like the 737 that he got from the same manufacturer). However, he needs to do some landing practice before bringing it out to the field. Transporting it also needs figuring out!

Soaring News

Allan Knox reports

Photo: Keith Elliott releases his OD 2m model to the pull of the bungee

Most gliding was done over the first and second weekends of March.

Conditions were nice although the first day was tricky and very light. The true light weight modern models went well and made their 10 minute flights without drama but the heavy models struggled. The second day had stronger southerly winds with lots of that lovely southerly instability and lift. Radian was most flown in these conditions and went well despite the wind. 2 Meter off the high-start bungee was flown on a week day by Ian, Keith and Allan in a strong south-easterly down at the FF Tree where the new growth is short and better suited to dragging a high-start, Finally Ken and Allan flew F3K with their Snipe DLGs. Ken won this encounter with some fine flying although it was close right up to the final round..



F3K Results

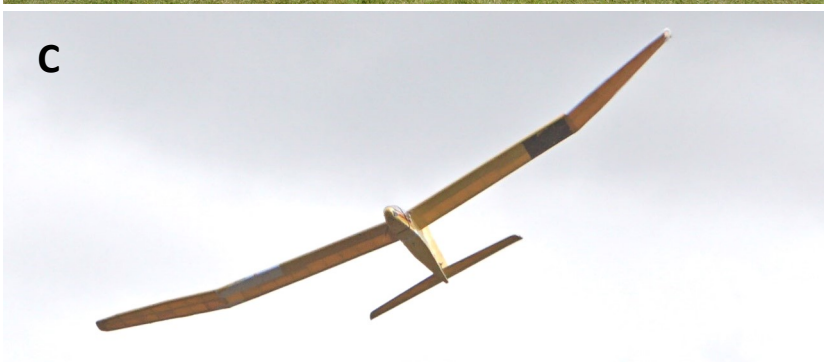
Ken MacMillan: R1 =208.0; R2 = 211.8; R3 =541.6; R4 549.5 = **1510.9**

Allan Knox: R1 =238.3; R2 = 207.8; R3 =537.1; R4 373.8 = **1373.8**

More soaring hot-air



Ian, Peter, Ken, Dave, Allan, Anton, Geoff and John stand behind their array of models flown recently at the Willows. We do get some great soaring conditions during autumn. Radians dominated.



A: Allan and Ken did battle in F3K in excellent conditions; B: Allan launches his 2m to one of his winning flights; C: Ian's 2m Spirit may look elegant in the air, but performed poorly, being held together with CA and fibre-glass tape!

ALES Radian Class P

| Date: March 25 | | Round 1 | | | | Round 2 | | | | Round 3 | | | |
|----------------|-------------|---------|-----|------|-----|---------|-----|------|-----|---------|-----|------|-----|
| Pilot | Total | Min | Sec | Lndg | t1 | Min | Sec | Lndg | t2 | Min | Sec | Lndg | t3 |
| Peter France | 1350 | 7 | 0 | 50 | 470 | 7 | 0 | 50 | 470 | 7 | 10 | 0 | 410 |
| Ian Harvey | 1339 | 5 | 52 | 50 | 402 | 6 | 58 | 50 | 468 | 6 | 59 | 50 | 469 |
| John Shaw | 1338 | 6 | 45 | 0 | 405 | 7 | 4 | 50 | 466 | 6 | 57 | 50 | 467 |
| Allan Knox | 1292 | 6 | 56 | 50 | 466 | 6 | 52 | 50 | 462 | 5 | 14 | 50 | 364 |
| Anton Nikoloff | 1240 | 6 | 49 | 25 | 434 | 5 | 40 | 50 | 390 | 6 | 56 | 0 | 416 |
| Geoff Lilly | 1154 | 6 | 0 | 25 | 385 | 6 | 34 | 50 | 444 | 4 | 35 | 50 | 325 |

ALES 200

| Date: March 25 | | Round 1 | | | | Round 2 | | | | Round 3 | | | | Round 4 | | | |
|----------------|-------------|---------|-----|------|-----|---------|-----|------|-----|---------|-----|------|-----|---------|-----|------|-----|
| Pilot | Total | Min | Sec | Lndg | t1 | Min | Sec | Lndg | t2 | Min | Sec | Lndg | t3 | Min | Sec | Lndg | t4 |
| John Shaw | 2580 | 9 | 58 | 45 | 643 | 9 | 59 | 45 | 644 | 10 | 0 | 45 | 645 | 9 | 58 | 50 | 648 |
| Ian Harvey | 2559 | 10 | 3 | 45 | 642 | 10 | 7 | 30 | 623 | 9 | 59 | 45 | 644 | 10 | 0 | 50 | 650 |
| Peter France | 2498 | 10 | 0 | 45 | 645 | 10 | 0 | 50 | 650 | 9 | 59 | 50 | 649 | 9 | 14 | 0 | 554 |
| Ken McMillan | 2481 | 10 | 1 | 40 | 639 | 10 | 7 | 45 | 638 | 9 | 59 | 45 | 644 | 8 | 40 | 40 | 560 |
| Anton Nikoloff | 2346 | 10 | 1 | 35 | 634 | 7 | 15 | 40 | 475 | 10 | 2 | 5 | 603 | 9 | 49 | 45 | 634 |
| Dave Griffin | 2337 | 10 | 0 | 45 | 645 | 6 | 27 | 5 | 392 | 10 | 0 | 50 | 650 | 10 | 0 | 50 | 650 |
| Allan Knox | 2186 | 9 | 20 | 0 | 560 | 8 | 51 | 50 | 581 | 6 | 42 | 25 | 427 | 9 | 33 | 45 | 618 |

2 Meter Class H

| Date | Mar-25 | Round 3 Min | | | | Round 4 Min | | | | Round 5 Min | | | | Round 6 Min | | | | Round 7 Min | | | | |
|---------------|--------|-------------|-----|-----|------|-------------|-----|-----|------|-------------|-----|-----|------|-------------|-----|-----|------|-------------|-----|-----|------|-----|
| Pilot | MFNZ | Total | Min | Sec | Lndg | t1 | Min | Sec | Lndg | t2 | Min | Sec | Lndg | t3 | Min | Sec | Lndg | t4 | Min | Sec | Lndg | t5 |
| Allan Knox | 7621 | 1553 | 2 | 5 | 50 | 175 | 3 | 8 | 50 | 238 | 4 | 24 | 0 | 264 | 6 | 0 | 50 | 410 | 6 | 56 | 50 | 466 |
| Keith Elliott | 1408 | 988 | 3 | 3 | 50 | 227 | 2 | 59 | 0 | 179 | | 48 | 50 | 98 | 2 | 45 | 50 | 215 | 3 | 39 | 50 | 269 |
| Ian Harvey | 3194 | 709 | 1 | 51 | 0 | 110 | | 54 | 50 | 104 | 1 | 12 | 50 | 122 | 2 | 9 | 0 | 129 | 3 | 14 | 50 | 244 |



Allan Knox brings his 2 meter model around for a landing in to the generous landing area for this class. A long lens makes it look as though he is close to the blackened tree by the stop-bank. One wonders if this tree is still alive and worthy of removal to further free up our airspace.

YOUR PROPELLER – the PROPER way to build and tune it - as understood by bigT

Although I believe I have previously written on the subject perhaps it is time again to do another article. Why you might ask? A few weeks back I had a north island aeromodeller call in and he raised the subject of how a propeller works and how to modify them for improved performance. Simply put, and generally speaking if the average aeromodeller learnt how to better tune their engine then modifying propellers would never be needed.

Commercially available engines, whether diesel or glow are more than powerful enough for the average modeler's requirements so modifying a propeller for increased performance is beyond his needs. However for those of us who want performance then an understanding of how a propeller works is very important. Some of us have made, or still make our own propellers and this should be regarded by most as a black art. Making your own propeller is easy once you have learnt the process and here is what I use: a 'special' heat activated epoxy resin; and for the ultimate strength I use carbon fibre rovings all laid-up into an appropriate shaped mould; then heat cured in a heatbox and for ultimate strength then post cured in an action called 'heat ramping'. This is *EPOXY JARGON* for heat treating a finished propeller and involves heating the propeller at 60 degrees C for an hour and every hour then increasing the temperature by 10 degrees until you reach 120 degrees C- then let it cool down.....this will give you ultimate strength; and yes, that's how I have always done my pylon racing propellers.

If you are really keen and committed to making your own propellers I will help you but I am not keen on making propellers for others. No, it's not being selfish but to realistically make a propeller for someone means they must supply a mould and then on top of that pay for both material and labour. Unless you make the mould yourself expect to pay about \$200.00 for that. The materials for each propeller aren't expensive (say \$30.00), and labour per propeller lay-up is about 45 minutes. To justify the mould cost one really has to make about a dozen propellers to make it worthwhile and the average modeller cannot justifiably that number, nor those charges. Hopefully you can now see how costs start to rise even when manufacturing one's own propellers! Buying an APC propeller from me is cheaper.

We all run our engines on a propeller size to give a static rpm, unfortunately, in somewhat artificial conditions as there is a marked difference in that when fitted to a model and operated under flight conditions as the propeller will **unload** and as most of you will know the rpm will increase. Us hardened/competitive modellers often talk about a likely 10% increase in rpm and if using a tuned pipe we know the increase is even greater - but that requires a separate article on their use.

Propellers have primarily two subjects that concern us competitive modellers. Most- those being the diameter and the pitch. Each of these are very important and both need to be fully understood. So let's talk first about the pitch. As the pitch is increased the angle of attack increases. The propeller is after all a wing, so increased angle of attack increases the load. Thus, some loss of speed will occur. The aeromodeller can compensate for that by reducing the diameter to try and maintain rpm. Little does he know that in doing that although the rpm may well increase that will be at the expense of loss of thrust. So, forward motion (speed) is reduced.

It took me a long time to realise this but perseverance paid off and if you check my toolbox you will find that aside from a few files and other tools there will be a small sanding block. Yes, it is used to reduce the chord (width) of the prop by about 1mm. This is my way of striking a happy balance of known pitch and diameter. So depending on the barometric pressure on the day I will modify my propellers to suit, **BUT** be warned- I only do that after checking the compression of the engine.



VINTAGE REPORT

From Allan Knox

It looks like I'm the only one to do RC vintage this month. I have worked flights around other flying activity so there was someone to hold the stop watch. A visit by my mate Peter Deacon from Marlborough saw us out at the strip doing work to certify his big heavy 40% full size Cub. (I am a large model certifier if any of you need this service.) Pete's Cub is monster with a 20BHP twin up front. Unfortunately we had some component incompatibility that stopped fail safe working properly so we had to abandon the planned cert test flying for now but it did give me a chance to fly my NDC Vintage IC Duration times with the Cumulus. As usual it maxed all its flights and landings so a fly-off flight was needed in case someone else around the country did the same. It was not without some drama though.

This model climbs so high in 25 seconds it's very hard to see against a hazy blue sky. I lost control at the top of every launch I think but fortunately it's a very strong model so can stand a few unintended aerobatics.

Is it my old eyes or just the light on the day I wonder?

Allan's 2 metre Cumulus is dwarfed by Pete Deacon's giant 40% Hangar 9 Carbon Cub. The Cub spans 4.2 metres and weighs in at 37Kg! It will be awesome for glider tug duties.



Classical E Duration went a little better controllability wise as the Pulteri doesn't climb so high in the 20 seconds allowed for electric duration events. We can now use unlimited power in these classes but I haven't upgraded other than a new motor and higher C rate batteries of similar capability to the originals. It will do for now. Likewise, my Vintage E Duration Scram only has new higher C rate batteries but these have restored its performance too. Both models now go very well again.

That just left Classical E Texaco that was flown after Ken McMillan and I finished our F3K DLG flights later in the month. The air had gone off a bit so we didn't have any of the crazy long thermal flights that can happen in these unlimited time classes.

Vintage RC results for March

Classical E Duration: Allan Knox, Pulteri 1961

Flt1 3:56 =236, Flt25:32 = 300 (Max), Flt35:40=300(Max) Total = 836

Vintage E Duration: Allan Knox, Scram 1938, Age Bonus 12

Flt1 4:59 Landing 0 Age 12 = 300, Flt2 5:13 Landing 20 = 320(Max), Flt3 6:02 Landing 20 = 320 (Max) Total = 940

Vintage IC Duration: Allan Knox, Cumulus 1937, Age bonus 13

Flt1 4:50 Landing 20 = 260(Max), Flt2 4:17 Landing 20 = 260(Max), Flt3 4:36 Landing 20 = 260(Max),

Flyoff flt 5:29, Landing 20, Age 13 =362. Total = 1141

Classical E Texaco: Allan Knox Pulteri 1961

Flt1 19:01 = 1141, Flt2 15:31 = 931 Total = 2072

More Vintage Stuff

On the building front, I have been helping Ken with an engine cowl for the New Ruler he is refurbishing and electrifying it with a very powerful Dualsky motor. It will be a weapon. I used fibre glass and the lost foam method for the silver cowl. It works well.



Styrene plug glassed with 2 plies of 4 oz and one of 2 oz using epoxy that doesn't attack the foam.



New fibre glass cowl for Ken's New Ruler



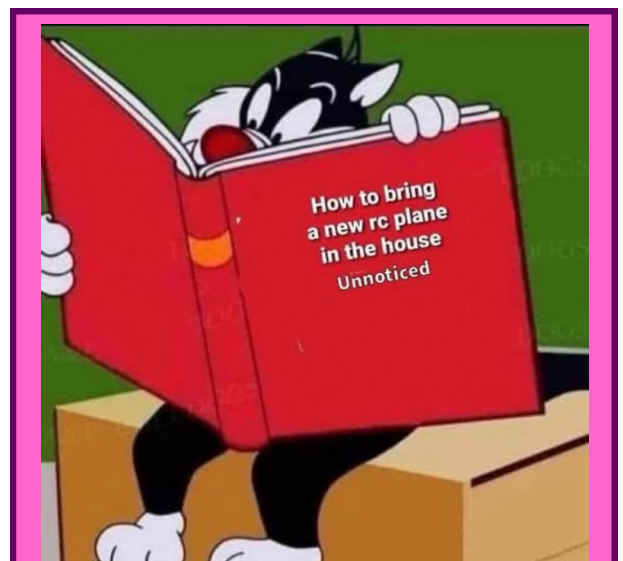
Mechanically removing the foam. Less messy than dissolving it with solvent

Attention:

HAVE YOU PAID YOUR CMAC SUBSCRIPTION?

- * Senior \$187.00
- * Family \$197.00
- * CMAC Life members Minimum \$167.00
- * Associate Members \$82.00
- * Members under the age of 26 have free membership.

Pay into CMAC bank/account by internet banking (with your name)- 03 0854 0563982 00; THEN: email the treasurer that this transaction has been made – bigtrev@xtra.co.nz. Payment must be made by **31 March** to be able to remain flying at CMAC.



This cartoon, submitted by one of our members, may suggest that he has a domestic situation that he is trying to navigate.

Tomboy Competition: - reported by Lynn Rodway

The Club RC Tomboy competition for February was carried over to the 2nd March due to weather conditions being unsuitable the previous weekend. There was a good turnout. Stu Grant helped with the numbers because the salmon fishing has not been good.

| | | | |
|-------|--------------|-------|--------------|
| Lynn | 1570 (48"IC) | Geoff | 1092 (48"IC) |
| Allan | 1263 (36"IC) | Keith | 1018 (36"E) |
| John | 1176 (48"IC) | Stu. | 803 (36"E) |

Free Flight results

Vintage Rubber

Lynn 99 145 90 + 3x6 = 352 (1944 Gollywock)
 John 61 83 90 = 234 (1950 KK Senator)

Kennedy Precision

Geoff 103 90 107 = 300
 Allan 99 83 120 = 302
 Lynn 59 58 55 = 172

Open Rubber

Lynn 144 103 180 = 427
 John 73 75 65 = 213

Kiwi Power

Lynn 120 - - = 120

Aggregate

Allan 92,22,73,79,71,
 55,91,95,84,111,39 = 712

Classic Glider

Allan 76 77 180 = 333

| | | | |
|--------|-----|------|--|
| Apr/25 | 119 | VINT | FF Small Nostalgia/Vintage Power Duration |
| Apr/25 | 120 | VINT | FF Classic Power Duration |
| Apr/25 | 121 | VINT | RC Vintage 1/2E Texaco |
| Apr/25 | 122 | VINT | RC Vintage A Texaco |
| Apr/25 | 123 | VINT | RC Vintage E Texaco |
| Apr/25 | 221 | FF | 1/2 A Power |
| Apr/25 | 222 | FF | Open Rubber |
| Apr/25 | 223 | FF | Open Power |
| Apr/25 | 224 | FF | Coupe d'Hiver |
| Apr/25 | 225 | FF | P30 |
| Apr/25 | 226 | FF | A1 Glider |
| Apr/25 | 227 | FF | Kiwi Power |
| Apr/25 | 228 | FF | Open Glider |
| Apr/25 | 229 | FF | Catapult Launched Glider |
| Apr/25 | 230 | FF | Hand Launched Glider |
| Apr/25 | 231 | FF | E36 |
| Apr/25 | 232 | FF | FAI F1L Indoor Rubber |
| Apr/25 | 412 | SOAR | Thermal J (2,4,6,8,10) |
| Apr/25 | 413 | SOAR | ALES Radian Class P |
| Apr/25 | 414 | SOAR | FAI F5J, 4 Rounds (Total Raw Scores) |
| Apr/25 | 309 | CL | F2C Team Race |
| Apr/25 | 310 | CL | FAI Team Race (Classic FAI & F2F combined) |
| Apr/25 | 311 | CL | Open Goodyear Team Race |
| Apr/25 | 312 | CL | Slow Goodyear Team Race |
| Apr/25 | 313 | CL | Class B Team Race |
| Apr/25 | 314 | CL | Percentage Speed |
| Apr/25 | 315 | CL | Classic 'A' Team Race |
| Apr/25 | 316 | CL | Classic 'B' Team Race |

**NDC Competitions
for April 2025**