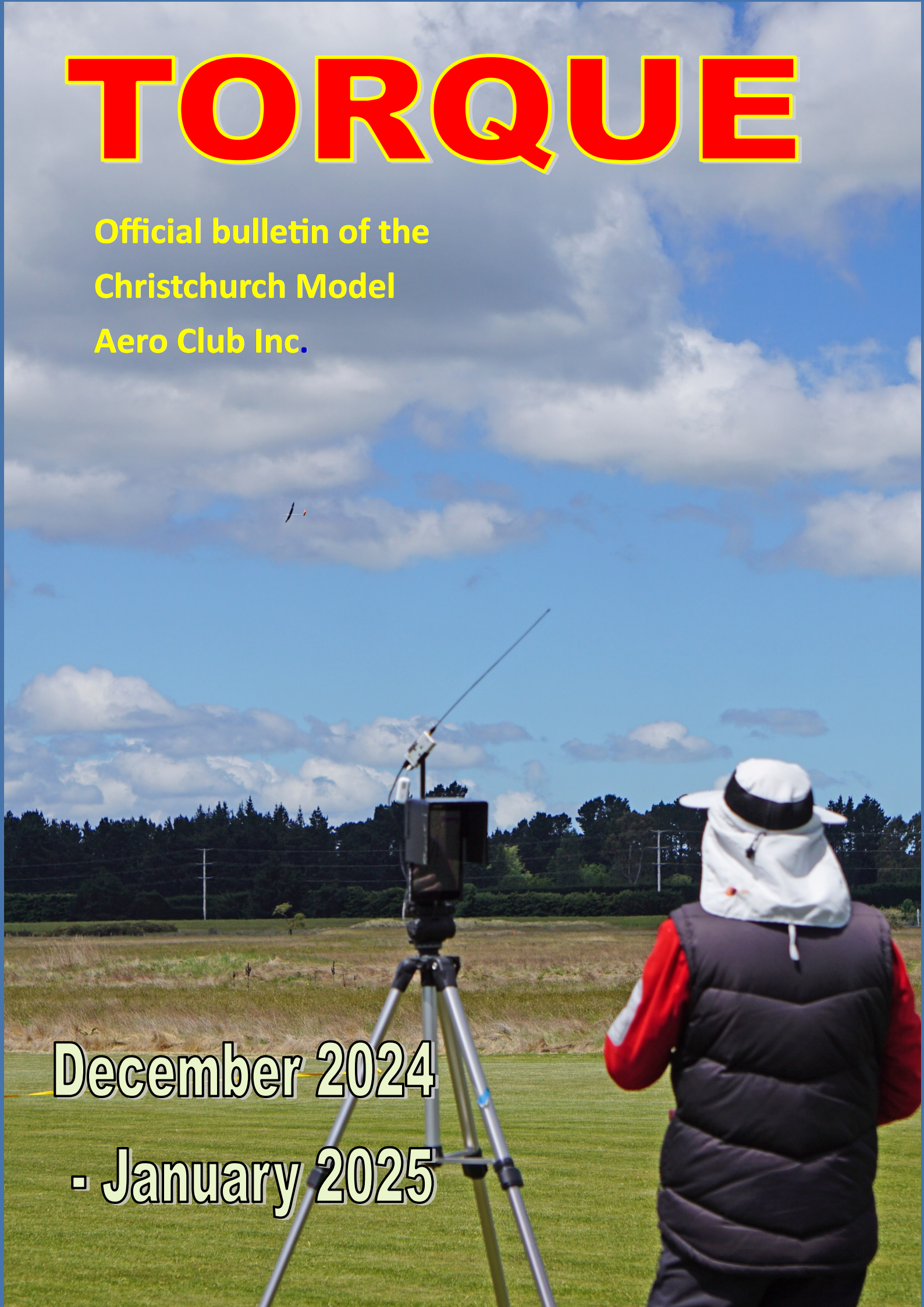
TORQUE

Official bulletin of the Christchurch Model Aero Club Inc.



December 2024 - January 2025

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Frontispiece: Dave Griffin brings his NAN Compass into the GPS triangle at the Willows as he practices for the December event at Tai Tapu. More on page 4.

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

PREZ SEZ

As you all may know a working bee was held recently to lay shingle on the club track so that it does not get as muddy as if often does in the Winter. Trevor Henderson arranged the shingle through a former club member. Graham Moffat and I arrived in the morning and very soon a large modern truck arrived and drove through the gate with only inches to spare. We started at the top end by the power patch, and I was in the cab relaying Graham's signals to the driver. We started dumping the shingle in the appropriate areas, but we had only got half way down the track and the truck was empty. Six cubic meters had been emptied.

After farewelling the truck and seeing him back through the gate, we realised that now the work was about to start, as the shingle had to be shovelled and raked in to the tracks so that the middle of the track could still be mown. Along came the help in the form of three elderly gentlemen to join the two elderly gentlemen already there. A few shovels, rakes and a couple of wheelbarrows now entered the fray. The 5 of us worked very hard with sweat pouring off us all. Sore backs were developing but we were determined to get the job done. After a good 3-4 hours of shovelling shingle into wheelbarrows, tipping and raking the job was done. Oh dear we will need the complete the job next year with another six cubic meters. I would like to give my thanks to John Beresford, Jeff Pullin, Grahame Moffat and Roy Gunner for the hard work they did on that day.

On another note I would like to wish all the members and Committee a very merry Christmas and a happy new year. I do hope that you all get a present from Santa to further enjoy our hobby/sport. After all Santa is a flier too!

Grahame Hart, President

Nicely spread gravel on the access track

***This could be our flying field at The Willows if we are not diligent in our fire safety practices*.**

We have approached a critical fire risk period a lot earlier than normal and the paddock could burn if we allow a fire to get out of control. The fire over the 8th and 9th of December has been a stark reminder of what can occur at our field. The grass is thick and drying rapidly in many areas and already dry on the areas of thin soil between the old wadis.

* Have a fire extinguisher at the ready at all times (and even a fire-smother blanket). Give your extinguisher a good shake on a regular basis to ensure that the powder contents are not caked.
* Retrieve models from the long grass immediately, and If there was any smoke emanating from the plane at any time during the flight or landing, take an extinguisher as you retrieve the plane
* Note that water is the best medium to douse grass fires. There are containers of water around the container for this purpose.
* Do not park cars over long—dry grass
* No smoking on site

The Willows—Friday 13th December. Looking east from the access track, towards the "GAP". Note the burnt fence post (but not the wooden droppers or battens. We were very fortunate not to have had more damage. The field is open for flying!

CMAC Committee

GPS Racing

David Griffin reports (photos by Ian Harvey)

New Zealand's first GPS Triangle racing event was held prior to the South Island F5J event on December 4th – 5th at Tai Tapu. Six fliers and several observers from around NZ joined in for two days of learning and flying.

The GPS triangle events use GPS and altitude data downlinked from either 4 or 5m wing span electric powered gliders. This data is fed to a tablet where a triangular course can be viewed and flown around. The aim is to fly as many triangles as possible while gliding and hopefully finding and climbing in thermals for 20-30 min. Much was learned by all in near perfect flying conditions (a warm SE wind!).

A: The NAN Explorer Q5 is a popular 4m GPS racing model. B: Dave Griffin launched Rob Johnson's NAN Compass, a popular open class 5m model. C: Kevin Botherway concentrates on both the GPS screen and the model in the course. D: John Shaw checks Joe Wurts' progress in the triangular course. Joe flew an F5J Plus X to good effect on the day.

More GPS triangle racing action

Joe Wurts and John Shaw get their respective models (a Plus X and a NAN Explorer Q5) airborne and headed for the course. Peter Deacon from Marlborough records the action and Dave Griffin checks the GPS feed-back

Kevin Botherway launches his NAN Q5

Rob Johnson inspects his NAN Compass for damage with Dave Griffin.

Dave Griffin's GPS-recorded track through the course.

Joe's Plus X returns to base

South Island F5J Competition

6th –8th December 2024 Report and photos by Ian Harvey

Following the GPS workshop, it was decided that the F5J competition should start at mid-day on Friday, rather than on Saturday, as the weather forecast for the Sunday was for initial wet conditions then a strong nor-westerly (which proved to be an accurate prediction).

All eleven competitors were ready to start at this time and the wind was a moderate, but slowly strengthening southerly. Lift was not particularly easy to detect, so most fliers opted for a conservative height of around 150 – 190m to start the round.

Most fliers had Vladamir Models Plus X's but there was one inverted V-tail Plus, a Maxa, a Sensor and a new NAN Explorer Q4. One flier opted to use a 2m eRES model, and put in some credible 10 min duration flights. These models are all well displayed in the photo below.

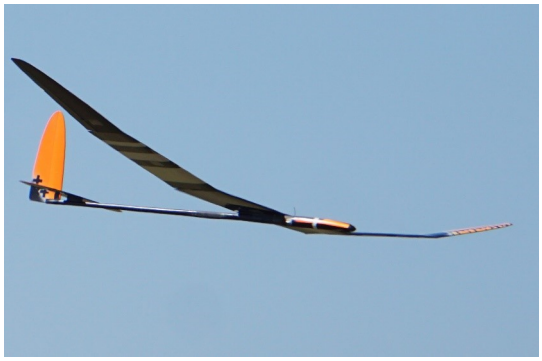
Back Row: Joe, Dave, Anton, Peter, John, Rob, Kevin, Keith C. Front: Keith E and Ian. Allan missing.

Saturday started with a moderate northerly, but this died away as a countering sea breeze set in. This produced some good lift conditions that were exploiter to good effect by the more adventurous who launched below 100m. However, this did not work-out for all, and some landings outside the 75m landing zone were experienced, or a motor was started to allow the model to make its way back to the field. By 4pm, as we were packing up for the day, the NE wind returned with its usual velocity.

All competitors met at the Tai Tapu Store at 8:30am on Sunday, with the majority voting to not proceed to the flying site and declare the event closed with the 12 rounds flown over Friday and Saturday constituting a fare contest.

Results after 12 rounds (with one dropped score):

1.	Joe Wurts (10,979 pts)	100.00	7.	Peter France	78.13
2.	Kevin Botherway	99.44	8.	Anton Nikoloff	77.82
3.	Kevin Campbell	92.03	9.	Ian Harvey	77.33
4.	David Griffin	90.47	10.	Keith Elliott	71.58
5.	John Shaw	86.99	11	Allan Knox	67.96
6.	Rob Morgan	85.94			



Peter France's Plus X

A: Pilots (from far to near) Joe, Peter, John and Kevin get away on the buzzer. C: And they all come back within the 10 minute working time on the spot! B: Rob's CN Models—Aero-Tech Sensor in the air. D: John's Plus X making a typical steady approach.

A: Keith dodges the speakers with his 2m OD model B: Kevin C's Plus performed well– gaining him 3rd place. C: Peter makes a typical approach back to the spot. D: Kevin B and Joe wonder if Kevin's model will make it back into the field. It didn't. E: Peter and Kevin C seem happy with the flight. F: Kevin B spots for John. G: Rob muses over the flight with Allan.

Joe Wurts (centre) took out first place again, with Kevin Botherway (left) second. Keith Campbell was a creditable third.

Two new F5J gliders in the club. Ian Harvey gives the low-down

I recently had a crash with my F5J Maxa glider, that was reported a couple of months ago in Torque. I looked around for a replacement with little success. Meanwhile Geoff Lilley was getting confidence with his Radian glider and decided that he would like to step-up to a higher performance machine. Enquiries to Dave's Big Toys for Big Boys in Australia revealed that Dave Prattley has two NAN Explorer Q4s in stock. Geoff arranged for them to be boxed up and delivered to a motel near Melbourne airport and duly made a quick trip over the ditch to deliver them back to Christchurch. John Shaw had recently acquired from Dave's BTFBB a very similar model for GPS racing – A NAN Explorer Q5 and kindly offered to fit my Q4 out, if I supplied a list of specified hardware.

This included electric motor, spinner and prop, aileron, rudder, elevator and flap servos, servo arms and new receiver radio gear. Procuring these was a rather long process as some of the specified items were not readily available either in New Zealand or Australia. Eventually all was delivered to John in Timaru and the completed plane picked up from the Ashburton Aircraft Museum a few weeks later, where it was assembled for Geoff and my edification in the workshop.

Geoff decided that he would take his time and fit his out himself. He commenced the process but eventually reneged and got John to complete the fit-out for him in Timaru.

The NAN Q4 is a 4m dedicated F5J glider with massive flaps and ailerons and a very neat fin and stabilizer attachment method that allows quick assembly. The wings are four-piece and the fuselage can be broken down into three sections if required (but normally only two).

Dave Griffin assisted in launching for the first flight at the Willows on the 17th of November, and it went so well, that I decided that the next four flight would be in the ALES 200 NDC contest. I then flew it in the South Island F5J contest in early December at Tai Tapu, but found that the limitation to my scoring well was not the plane, which flies very well and is super efficient, but my ability as a pilot, especially at landing .

One problem I found with the glider is that there is very little fuselage to hold onto during launch, and I had to get the timer to stabilize the wing-tip on power launch in windy conditions. My final launch in strengthening wind conditions on the Friday of the contest saw the tail plane of the plane strike me on the back of the head, resulting in the boom snapping clean in half just forward of the stabilizer and the holes holding the fin pegs being badly burred. However, the repair that night was straight forward using various fillers, glues and tapes and was ready to fly the next morning. No more problems were encountered during the contest.

Geoff brought his finished model out to Tai Tapu on Friday morning of the F5J contest, but only for a test flight or two, under the watchful eye of Dave Griffin. Again, his model flew nicely and he had no problems playing some light lift and bringing the Q4 in after a trouble-free test flight. We look forward to these models doing battle against the Plus X's and Maxa's in the club competitions.

A: Dave Griffin gives Ian Harvey's NAN Q4 its inaugural launch at the willows and B: Geoff Lilley's at the Tai Tapu site. C: How all the bits of the NAN Q4 break down (The wig tips are actually the same size!)

Soaring News

***-from Allan Knox** (Photos—Ian Harvey)*

Dave Griffin launches Allan Knox's 2m model on the bungee, while Keith Elliott is ready to take the time

We actually got to do all the events this month despite the windy conditions. The first weekend was very good and those of us who flew the ALES 200 then did well. Ian did it later with his new NAN Q4.

eRES never seemed to coincide with a gentle day so scores suffered a bit. It looks like Dave and Anton pulled the plug at 3 rounds probably due to rising winds.

We managed 2 Meter off the high start too. I flew earlier in the month on a choppy windy day and Ian and Keith flew in something similar when I was away. Results were not great.

Ken and I flew DLG F3K on a really nice day right at the end of the month with some timing help from Ian and Pete as I recall. Yet again Ken showed his skills in this class which he loves and scored some really long flights when he needed them recording a solid win yet again.

We have now completed the NDC year and have achieved another solid performance over the whole range of soaring, vintage and free flight events. It will be interesting to see where we finish. Have we beaten Marlborough in soaring or have they pipped us again? All will be revealed at the Nats Prize Giving where NDC places are announced and certificates presented. CMAC always features in these.

ALES 200

Date - 1 Nov		Round 1				Round 2				Round 3				Round 4			
Pilot	Total	Min	Sec	Ldg	t1	Min	Sec	Ldg	t2	Min	Sec	Ldg	t3	Min	Sec	Ldg	t4
Peter France	2578	10	1	45	644	10	0	40	640	10	1	45	644	10	0	50	650
Dave Griffin	2552	10	0	45	645	9	53	35	628	10	1	40	639	10	0	40	640
Allan Knox	2533	10	7	0	593	9	59	50	649	10	1	50	649	10	3	45	642
Ian Harvey	2301	9	30	15	585	7	53	40	513	10	6	0	594	10	1	10	609
Keith Elliott	2250	5	14	35	349	10	1	30	629	10	8	35	627	10	0	45	645
Anton Nikoloff	2028	9	54	0	594	9	29	0	569	6	18	45	423	6	32	50	442
Ken McMillan	1506	3	35	35	250	6	17	30	407	4	2	15	257	9	2	50	592

2 meter

Nov-24		3min flight				4 min flight				5 min flight				6 min flight				7 min flight			
Pilot	Total	min	sec	Ldg	t	min	sec	Ldg	t	min	sec	Ldg	t	min	sec	Ldg	t	min	sec	Ldg	t
Allan Knox	1178	2	9	0	129	4	26	50	266	4	59	50	349	3	13	50	243	3	11	0	191
Keith Elliott	1152	3	5	50	225	4	5	50	287	2	16	0	136	2	54	50	224	3	50	50	280
Ian Harvey	956	1	57	0	117	3	38	0	218	2	6	0	126	1	57	50	167	5	28	0	328

e RES

Nov 24	Round 1				Round 2				Round 3				Round 4				
	Time				Time				Time				Time				
Name	Min	Sec	Ldg	t	Min	Sec	Ldg	t	Min	Sec	Ldg	t	Min	Sec	Ldg	t	TOT
Allan Knox	5	00	35	335	4	42	0	282	3	15	0	195	2	57	40	217	1029
Keith Elliott	3	20	40	198	4	27	0	267	2	19	30	169	3	50	0	219	906
Ian Harvey	4	58	40	338	1	49	35	144	3	11	20	211	2	03	0	123	816
Anton Nikoloff	3	10	0	190	2	54	45	219	4	2	35	277	DNF				686
Dave Griffin	4	10	0	250	3	45	0	225	2	37	0	157	DNF				632

DLG F3K (4 rounds)

Task - Last 2 flights - Ken 186, Allan 134
Task - 2 Throws only - Ken 390, Allan 367
Task - 5 by 2 Mins - Ken 264.8, Allan 260
Task 1, 2, 3, 4 min flts - Ken 572, Allan 374

Totals Ken McMillan 1612.8; Allan Knox 1335

Launching gliders: A: Allan - F3K Snipe; B: Ian - ALES200 –NAN Q4; C: Ken –F3K Snipe; D: Lefty - Peter—ALES200 - Plus X

How to improve lift by 45% and reduce drag by 30% when landing

Peter France comes across some interesting facts

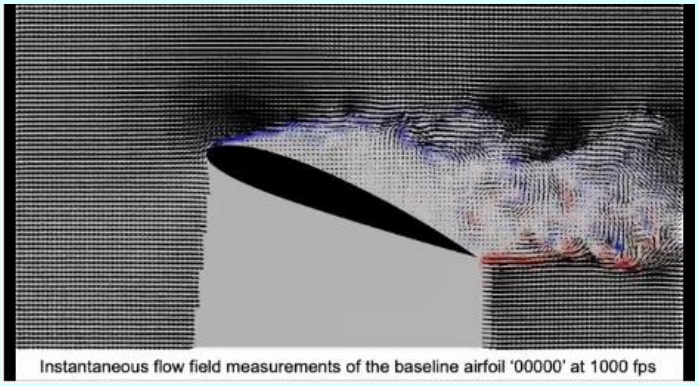
I am fascinated by biomimetics, which is about discovering new engineering principles by studying the natural world. Recently I saw an article along those lines, and thought other Torque readers might be interested.

For years biologists have known about "covert feathers" which are nothing to do with stealth. On bird wings they deploy passively at high-alpha attack angles such as when landing. Researchers at Princeton University have done some aerodynamic studies, and concluded that they extend the flight envelope around stall.

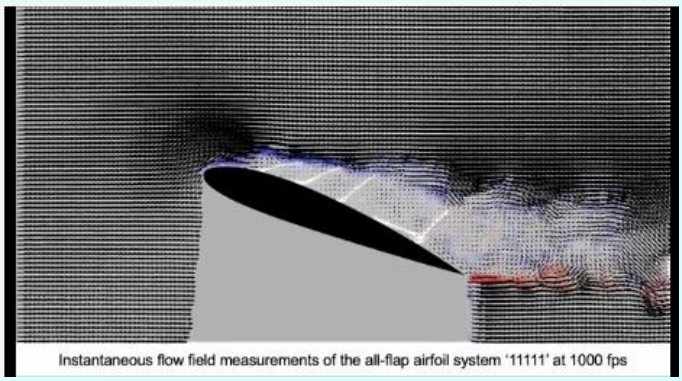
What's better than a flap? Five rows of flaps. Flaps have been studied and used for a long time, but on bird wings there are several rows of these covert feather flaps. The first photo below show a normal wing at 20° incidence, generating significant turbulence. The second photo shows a similar wing fitted with five passive flaps, seen as white lines. The turbulent region is noticeably reduced.

If you want to know more about how this all works, here is a link to a summary with in-flight video (https://engineering.princeton.edu/news/2024/10/28/bird-wings-inspire-new-approach-flight-safety), and here is a link to wind tunnel videos - (https://www.pnas.org/doi/10.1073/pnas.2409268121). Unfortunately the actual paper is pay-per-view.

OK, so who's game to modify an airframe and do lots of stall tests?



Instantaneous flow field measurements of the baseline airfoil '00000' at 1000 fps



Instantaneous flow field measurements of the all-flap airfoil system '11111' at 1000 fps

The CMAC committee wish all our members and readers a merry Christmas and a happy and prosperous New Year. Fly well!!

Facebook Revisited

John Dew

I hate Facebook. There, that feels better. In fact I hate Instagram and TikTok and X and Snapchat and Pinterest and Reddit and all the rest of the ghastly mob. I blame them all for the decline and fall of Western civilization. If you have ever scrolled through the mindless crap on just one of them, you will know what I mean.

Having got that off my chest, I'm going to segue for a moment. I fly FPV (as I might have mentioned once or twice before) and to get more than a rudimentary experience I fit each plane with a Flight Controller, which is just a small, special-purpose computer. A computer needs software, and when I bought my first FC it already had software installed, called iNav. There are two main software products for FCs, namely iNav and ArduPilot. Andrew Palmer will tell you that ArduPilot is the better product, and I suspect that he is right, but as a newbie I started with iNav and have stuck with it for several years. In that time the version has gone from v1.9 to my current v7.1, which shows how the product has developed. (v8 is now out, but I hate upgrades - something always seems goes wrong.)

The program development is done by a small group of dedicated semi-amateurs, and they burn the midnight oil to improve the product. So much so, that the documentation gets a bit sidelined. There is no 500 page manual to explicate all the myriad intricacies, and I have often had to experiment to get to the "Oh, is that how it works!" moment. The one consistent piece of advice was - join the Facebook iNav group.

So it was with mixed emotions that I signed up to Facebook. I turned on every privacy feature I could find in an effort to remain anonymous, but to no avail. Various people were proposed as “friends” (an abuse of the word) but the really spooky one was a post-grad who I have had no contact with for 55 years.

It would appear that most people who use flight control software are multi-rotor (aka drone) pilots, so my target was a sub-set of the iNav group called the iNav Fixed Wing group. I finally got there and wrote my first post, which was a question about the Auto Launch feature. I pressed “Send” and went to make myself a cup of coffee. I did sneak a look 5 minutes later, just in case some maven was sitting at his keyboard waiting for my query, but no. I checked again later that evening, but still nothing. Next morning, nix. After 24 hours, nope. Two whole days, nada. I started to wonder whether the post had actually been sent. I was a new user, so perhaps I had clicked in the wrong place.

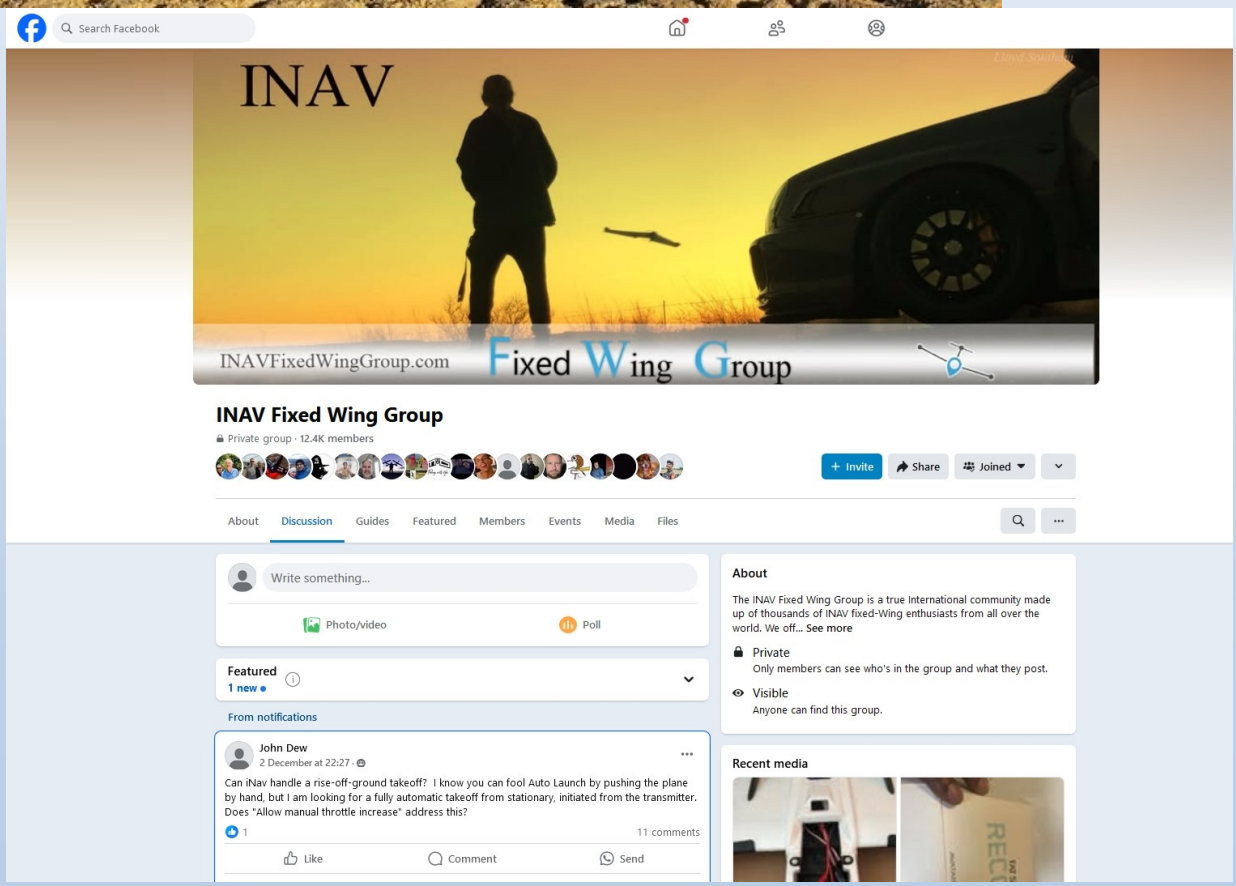
Finally, after 3 days, my lost query reappeared, accompanied by several quite sensible replies. I didn’t get the precise answer I was looking for, but the respondents showed understanding of the topic and made sensible suggestions. Amongst the swamp of Facebook, I have found a sane niche.

The whole point of the FB saga was to learn how to use an iNav feature called Auto Launch. The feature exists because a lot of fixed wing iNav pilots fly small, flying wing craft like the Mini Talon, and launching one of these is not so easy (ask John about his Hunter or Tim about his Spitfire). To add to the difficulty, most of these models have pusher props, to the peril of launching fingers. To address this problem iNav can delay firing up the motor for a short while after the model is launched (i.e. hurled) and then it controls the flight for a short period afterwards. This gives the pilot two free hands for the launch. I have even seen a video of someone chucking the plane back over his shoulder – which of course is contra-regs.

I am interested to see whether Auto Launch can be adapted to a plane with an undercarriage. I am keen to try out some ideas, but I have been thwarted by the continual Nor’Westers, and now the fires. Maybe I should take up Indoor.

Left: The Mini Talon mentioned in John Dew's article.

Below: John's query page on the INAV Facebook page.



Nice drone photos by Chris Laurie—Dec Sunday 01 December. DJI Mini 4 pro

Vintage Report from Allan Knox

I have been aware for sometime that there are excellent vintage models sitting in sheds around the country gathering dust. Many are decades old from the wave of enthusiasm for vintage flying that washed around the modelling world back in the 80s. It inspired many.

Our own Ian Henry was not one of these however as he had been a child of the 30s brought up on American publications like Flying Aces and the likes back in the period. For him flying big Yankee Free Flight models with spark ignition was his kind of modelling. Ian was a master builder and used his skills at work making Micro Light props as well as vacuum moulding parts and lots of other useful stuff. We used him at NAC back in the 70s to make our aircraft first aid boxes for example.

As some of you may have seen that I put out a call to see if anyone could produce some surplus oldies to hand on to club mates even if these needed repair and equipment installation. Thanks to Mark Venter some fine old examples were liberated from storage and have now found new homes. Amongst these were a couple of Ian's old models.

Thanks so much Mark, we all appreciate your generosity.

Ken McMillan now has a New Ruler that belonged to a South African friend of Marks. The New Ruler is an all time favourite thanks to John Ensoll's beautiful big red silk cover example. It was the first big vintage model I had see up close and I loved the way it powered up to height with its 65 four stroke on full song. John won a number of Nationals with his. Ken is planning to electrify his 'Ruler. The same model can fly 3 classes, Vintage Precision, E Duration and E Texaco so will be both a lovely sport model and a useful competition one.

Upper right: The late John Ensoll's New Rule—now owned by Stu Grant. Left: Geoff Pullen's new Hayseed just needs a motor. Above: Allan's Senior Dart in flight.

I fell in love with a second Henry model. It needs work but is an absolutely classic Comet Clipper and one of Karl Goldberg's finest early designs. Every rib is a different size and its 5 spars are all tapered in its elliptical wing. It's a real Ian Henry work of construction. I'm afraid I decided I would refurbish this one myself then electrify it and install RC. I've made a start too by lopping the wing in two and reworking an old wing breakage repair. This will allow me to build in a wing joiner system to improve portability. Like all these old silk or tissue covered models, the covering is very fragile and needs replacement. Fortunately Keith Elliott has dropped off some more covering material and included were two packs of beautiful fine Esaki Japanese silk. This stuff is like Rocking Horse poo these days but it's exactly right for this old model even though its lots of work with the dope brush.

The 72 inch Comet Clipper. Soon to fly again with electrics and RC.

So….with a bit of luck we will have some more guys flying RC vintage locally next year. I certainly hope so. Good times! P.S. - Any original photos of Ian with his models would be appreciated.

Flying in November: What a windy month, I can only remember a couple of reasonable day. One of these was right at the end when Ken McMillan and I flew DLGs at the strip. Once finished, Ken helped with stop watch duties and I flew my E Rubber Texaco Senior Dart. It's an odd choice with its semi scale low wing style but if the air is good it goes very well. The air was good so some serious flight time was achieved.

Earlier in the month, Geoff Pullin and I flew Vintage Precision. This is a great event and really quick to run with just 3 by 3 minute flights. Geoff is new this one but did fine. I was lucky and in the groove with my 5 Foot Gas electric. Three identical flights, each just 2 seconds over time then a 1 second over flyoff flight. Gosh I hope I do as well at the Nats. Poor old Lynn missed out this month. There just didn't seem to be a day that suited.

Finally I flew Vintage ½ E Texaco with the MG 2. Its great model but the wind got up and it was hard work. Still a time was recorded. Again Lynn would normally fly this too but missed out.

Vintage RC Results

RC Vintage E Rubber Texaco

Allan Knox, Senior Dart 1937, Age Bonus 13
Flt1 17 mins 40 secs landing 0,
Flt2 32 mins 13 secs Landing 20
TOTAL = 3039

RC Vintage 1/2E Texaco.

Allan Knox. MG 2 1937, Age Bonus 13
Flt1 9 min 28 secs landing 0,
Flt3 10 mins 5 secs Landing 0, Age Bonuses 13 x 2.
TOTAL =1199

RC Vintage Precision

Geoff Pullin, Brigadier 1941, Age Bonus 10
Flt1 2:45 landing 0 Age 9 = 174.
Flt2 2:56 land 20 = 200 Max.
Flt3 2:35 Land 0 age 9 = 164
Total = 538

Allan Knox, 5 Foot Gas 1937, Age Bonus 13
Flt1 3.02 land 20 Age 13 = 200 Max.
Flt2 3.02 land 20 Age 13 = 200 Max.
Flt3 3.02 land 20 Age 13 = 200 Max.
Fly-off flight 3.01 Land 20
Total = 799

Club Tomboy Competition report from Lynn Rodway

A few of us managed to get this event underway due to a lull in the usual gusty wind conditions although it was not completely calm on Sunday 17 November.
Hopefully next event will see a few more competitors.

Lynn	**9.42; 9.06 +20; 8.27**	**= 1655**
Allan	**10.04; 8.58 +20; 7.5**	**= 1636**
John	**5.32; 8.18; 7.13**	**= 1263**

Only a couple of landing bonuses in the equation due to the easterly making it tricky to land these old floaters on the spot.

Some Nov. NDC Free Flight results:

Catapult FF Glider

Allan Knox	189
John Beresford	174
Lynn Rodway	143

Coupe d'Hiver

John Beresford	239

Launching the MAXA; Allan style

" There's some strong lift coming off that black patch over there!"

NDC Events January 2025

Month	Event #	SIG	Event Name
Jan-25	100	VINT	FF Vintage Precision
Jan-25	101	VINT	FF Vintage Glider Duration
Jan-25	102	VINT	FF Nostalgia Glider Duration
Jan-25	103	VINT	RC Classical 1/2E Texaco
Jan-25	104	VINT	RC Classical E Texaco
Jan-25	105	VINT	RC Classical Precision
Jan-25	200	FF	Aggregate
Jan-25	201	FF	Catapult Launched Glider
Jan-25	202	FF	Hand Launched Glider
Jan-25	203	FF	Coupe d'Hiver
Jan-25	204	FF	Tip Launch Glider
Jan-25	205	FF	A1 Glider
Jan-25	206	FF	FAI F1D Indoor Rubber
Jan-25	400	SOAR	ALES 200 Class M (Scoring per 3.13.7)
Jan-25	401	SOAR	F3K Tasks B,D,G,H only (total raw scores)
Jan-25	402	SOAR	ALES Radian Class P
Jan-25	403	SOAR	Thermal A (Open)