



BULLETIN OF THE AUCKLAND MODEL AERO CLUB INC. EST. 1928
December 2022 - January 2023



John Swales (right) came to Karaka to assist Mishka Meredith (Left) to test the model given to him by Brendon Neilson. They were accompanied by Louise Meredith (centre). *Photo: Eddie Mann*

SLIPSTREAM Christmas Quiz

1. Name the designer of the much loved APS Black Magic sports model from 1947?
2. Who was the senior engineering specialist at Vought who wrote books and articles on getting scale models to fly?
3. Who were the authors of *Scale Model Aircraft that Fly*, in 1940?
4. Where were the first New Zealand Nationals for Aeromodelling held?
5. Where will the 75th Nats be held?
6. What capacity was the ED Mkl engine?
7. What are the four forces affecting flight?
8. What is the Australian name for our Aggregate class?
9. Which New Zealand company flew a Monospar aircraft from the 1930s?
10. Who was its founder?
11. Who designed the Hangar Rat?
12. Who is most associated with the invention and promotion of control line (or U-control) model flying?
13. Name the designer of the NAC Team Racer?
14. Where is the original NAC Team Racer prototype housed?
15. Who designed the Rudderbug, an early RC model now flown in vintage classes?

[Answers on page 25]

Editorial – Club Activity

It has been a busy couple of months since the last Slipstream. The Club's main event, the Morrinsville Indoor Day, was a great success and in terms of both entry levels and people attending, it can be accurately viewed as the best yet. From the simple concept of putting on an indoor contest for those interested in this aspect of the hobby in the year following the first Matamata Nationals, Morrinsville has developed into a much grander occasion. Drawing flyers from as far south as Christchurch and as far north as Whangarei, it can fairly be claimed to attract support from far afield. Whilst this representation is welcomed, it has also achieved the important role of fostering interest in competitive indoor free flight classes beyond the activity in these at club level. Hopefully this will be reflected in Nationals entries in these classes. There is already strong interest in next year's event and the date of October 8 has been set. Please enter this in your diary.

Another diary entry to make is the Modelair Hornet evening to remember Angus Macdonald. This will held on April 17 at the Drury School Hall. Those who attended the event in 2021 will recall what a great evening it was. There is room in this precision style class for both experienced flyers with well-trimmed models and fun flyers just happy to get their models to fly. As offered in the notice on page 26, Ricky Bould can assist with kitsets of Hornet parts. The plans were published in the November 2020 Slipstream. I can also supply them.

With several good flying days, Karaka has seen a variety of models flown. Our monthly Drury School indoor evenings have also attracted regular support. My thanks to all who have supplied reports on flying activity and photos to accompany them. A special thank you to Alec Fuller of the New Plymouth Model Aero Club for his contributions on Morrinsville and the New Plymouth TSB Stadium event.

With less that a couple of months until the Nationals, it's time to work on models and confirm accommodation if you are heading south to Carterton. Best wishes for success there. As in previous years there will be no January Club meeting. There will no Indoor evening at Drury in December or January. Both Club and indoor meetings will resume in February.

The Christmas Quiz is now an established fixture in December Slipstreams. Hopefully, you will find the questions once again both challenging and informative! Enjoy.

Season's Greetings to all,

STAN MAUGER

Slipstream contributions

Contributions of reports and photos on flying activity as well as articles and information about latest projects are very welcome. Please just send them in.

Photo credits: Unless otherwise noted, all photographs are by the authors of each article.

Monthly Club Night- Stan Mauger

3-10-22

Present were Ricky Bould, Geoff Burgess, Alan Bright, Guy Clapshaw, Paul Evans, Don Foley, Brian Howell, Eddie Mann, Stan Mauger, Ken Smith, Bryan Spencer, Charles Warren and Tony Woodroffe.

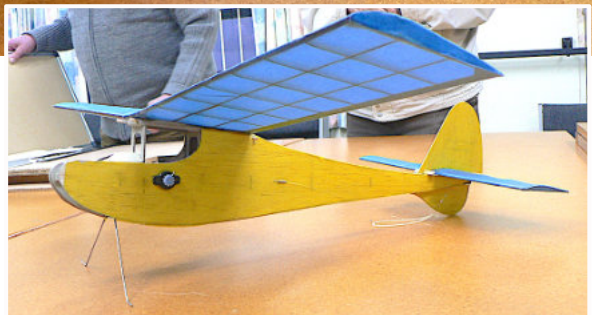
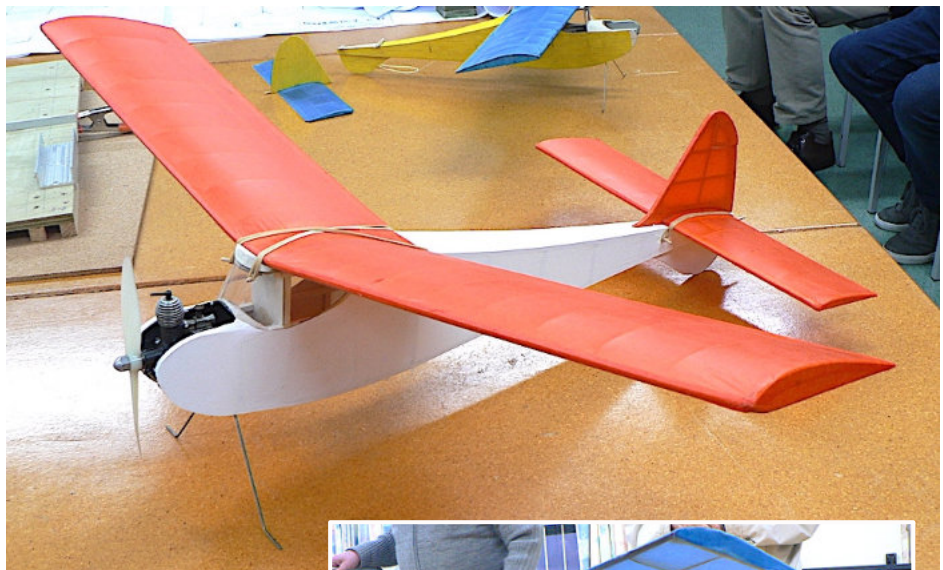
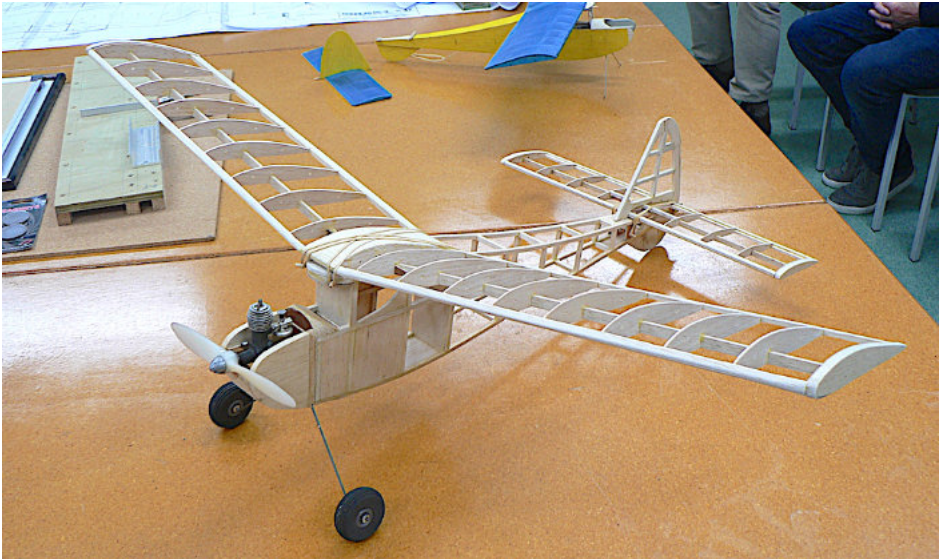
Two important notices were brought to our attention by Club President, Ricky Bould. The Indoor Free Flight Day at Morrinsville was just a fortnight away. Indications were that there was good interest in the day this year and not much time was left to sort out models for competition. The 2023 75th NZ Nationals were a little further off, but it was a good reminder for those going, to sort out models and accommodation.

Turning to the table, Ricky started with two volumes of Flying Aces brought by Geoff Burgess and given to him by Rex Benns who was thinning down his collection. They dated back to 1936 and 1937. Glancing through them, it was evident how basic modelling was in those early days and the close connection between aeromodelling and full-size aviation stories. Still on the theme of early designs, Stan Mauger had brought along a plan for the Curtiss Owl designed by Joe Ott in the 1940s. This was curious because it showed the use of card 'Otto formers' claimed by the designer to make model building quicker and easier.

Tomboys were well represented with models by Don Foley and Eddie Mann. Don had made great progress on his model, which was his first Tomboy, and in need of only covering and finishing details to complete it. Eddie's model was bit further on having been covered. Both models had Mills .75 diesels installed and should provide hours of flying enjoyment. At a smaller size, Ricky's Tom Thumb powered by a Redfinn .25cc is also nearing completion. Looking at the construction, it seemed likely that this model will be light. After this, discussion turned to avoiding having sport models flying away and brought up the subject of tracking buttons and radio timers as well as more conventional dethermalisers.

Further down the table were several boards that looked like retail purchases. They were in fact both cork and steel boards available from the Warehouse. Brian Howell had been able to modify these to create building boards. How he did it is described in a separate article on p. 24. Beside them was a handy set up of a 600 x 150 ply sheet with a standard modellers mitre box fitted and a piece of aluminium right angle held with a strong spring clamp to provide a fence. The length of parts could be set with the fence clamped at the required distance. This was ideal for making parts for Brian's Presto.

Eddie Mann confided that he has long been dreaming about building a Douglas DC-3 for RC Scale and to prove it he had brought a Nick Ziroli plan for this subject. The outlines looked quite accurate. Still on the subject of RC models, Charles Warren had brought an F-27 Revolution foam electric powered RC model, set up with a pusher prop configuration. It had been bought second-hand without RC gear and Charles had converted it to JR gear. The control throws had been reduced making it a very flyable model even at half throttle. The model needed to be hand-launched.



Top: Don Foley has made great progress on his Tomboy as it nears covering stage.

Above: Eddie Mann's model is even further on, with testing just around the corner.

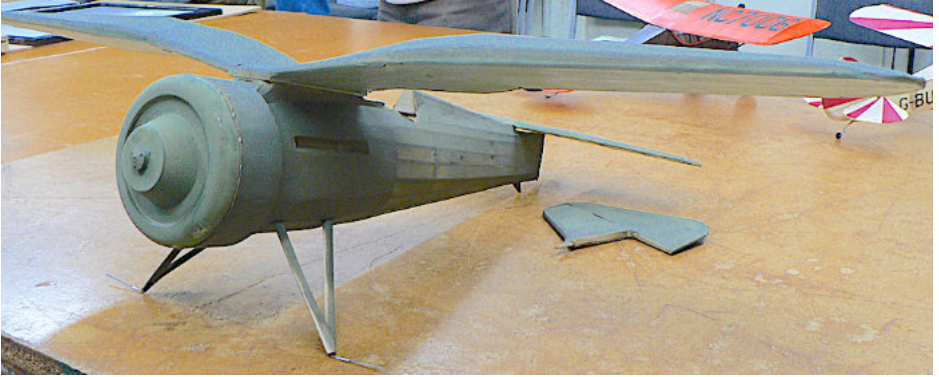
Right: At a smaller scale, Ricky Bould's Tom Thumb just needs glazing, wheels and some final finishing to complete it



Upper and above: Stan Mauger brought two models destined for the Nats. His CO2 Monocoupe Velie is Gasparin 120 powered and the Kit Scale Cessna below it has already been flown outdoors at previous Nationals.

Right: Many of us have seen Cleveland designs advertised in American modelling magazines over the years. Stan brought this Monocoupe 90A given to him by John Macdonald.



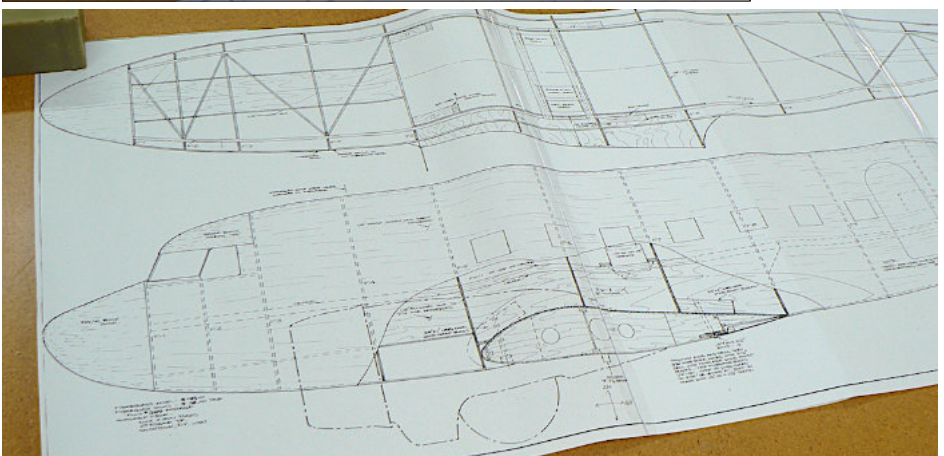


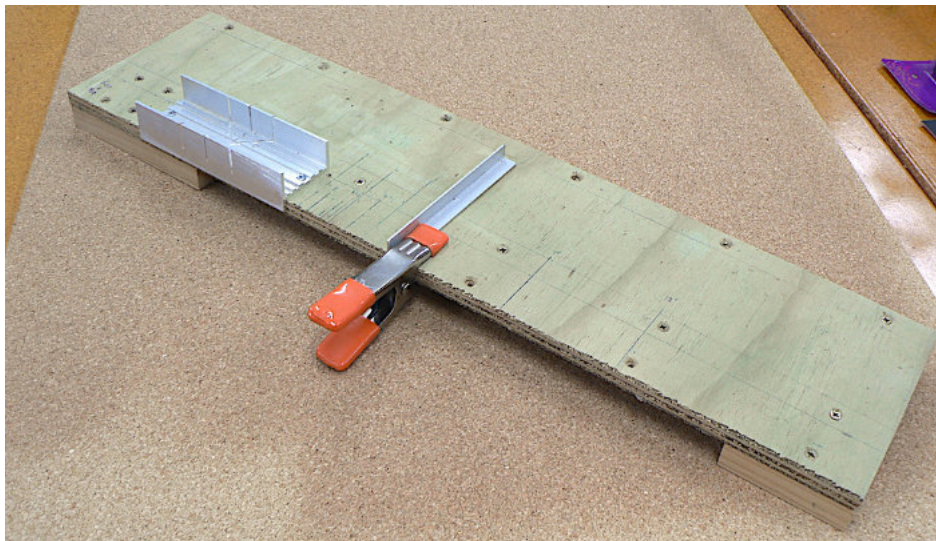
Upper: Ricky Bould's PZL 11c will come to life with the addition of marking and finishing details.



Left: Charles Warren showed the disassembly of his RC foam F-27.

Lower: A glimpse of Eddie Mann's dream project, a large scale DC-3 designed by Nick Ziroti.





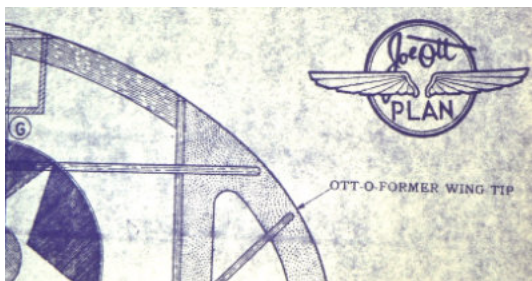
There were also a number of scale models on the table. Ricky had taken over completing the Dumas PZL 11c started by the late Keith Trillo. The model had called for some strengthening here and there. Now in olive finish, it will come alive when markings are added.

Stan's Monocoupe Velie was no stranger to monthly meetings having been started way back in the nineties and rebuilt and re-covered. He was hopeful that with some help on the technical side from Ricky, the GM120 in it may deliver enough power to get some good flights at the Nationals. The model started life as a modified Herb Cluckey-designed Flyline model, slightly enlarged. As the deviations from correct outlines were found in the plans, the model was progressively rebuilt. Also not new to the table, was Stan's Keil Kraft Cessna (3/6D series) kit scale model brought to support the Nationals theme. Stan had an American kit gem given to him by John Macdonald. Avid readers of older American modelling magazines will have seen Cleveland models listed, but it is rare to see a kit. Stan set out the contents of a small Cleveland Monocoupe 90A kit. Balsa looked light and the design was free of over-engineering.

The table done, it was time for a chat and then to head home.

Top: Brian Howell's set up for making multiple parts.

Right: A detail of a Joe Ott designed Curtiss Owl for rubber power, showing his patented Otto Former used for the wing tip.



Karaka Diary - Stan Mauger

18-9-22

This was a good day for flying and a variety of models were flown. Paul Evans flew a couple of electric RC models and enjoyed practicing take-offs. His Little Ship takes off easily but his Veron Deacon calls for a little more concentration.

Brian Howell was totally at home flying his Tomboy using rudder and elevator.

Charles Warren had four quite different models out on the day. He started with his Ludd Bipe which although quite an unconventional Geoff Northmore design, is slow flying and surprisingly easy to fly. His Radian RC powered glider is no stranger to Karaka and is a pleasure to fly. Barely recognisable from its early beginnings as a Die Fledermaus RC trainer, his much-modified aerobatic model is now electric powered and quite manoeuvrable. It is so modified that it can be claimed as an own design model. Apart from some questions about how to launch it whilst keeping clear of the propellor, his F-27 foam tailless RC model is straightforward to fly, so long as it is kept to half throttle. Even so, it has a good speed range. Charles had reduced the throws on the ailerons and this had made control easier.

Visitor, Jonathan Hill caused some second glances when he was looking away from his model whilst flying it with a FPV headset. His model, an Aero Scout, was flown very confidently.



Upper: Brian Howell flew his Tomboy a number of times.

Above: Paul Evans's Veron Deacon between flights.

Left: Jonathan Hill was quite at home with using FPV to fly his Aero Scout.



Upper: Now a seasoned flyer at Karaka, Charles Warren's development of the original Die Fledermaus trainer was taken through its paces.

Above: His Radian resting between flights.

Left: Also flown was his F-27. It is a straight-forward model to fly and has a good speed range.
Photos: Brian Howell.

9-10-22

Mishka Meredith was able to start flying his RC model recently donated by Brendon Neilson. John Swales came out to Karaka and assisted Mishka through the stages of learning to fly a larger model than the sorts of electric powered ready-to-fly models that he had flown previously. All that prior experience was nevertheless valuable in learning to manage an outdoor model. The design of his model is unknown, but the brushless motor now installed was putting out about .15 to .20 ic equivalent power. John took the model through take-off and then Mishka took over with direction from John before John landed it. Mishka was a confident flyer and made a flight of seven or so minutes.

He needs only some more practice in take-offs and most particularly practice in positioning the model for landings. The model is an ideal trainer, having plenty of power in reserve and flies quite happily at half power. John expects that after a couple more sessions he will be doing it all on his own.



Above: Mishka Meredith flying his RC model under John Swale's watchful eye.
Photo: Charles Warren.



Top: Kay Long winding her Hangar Rat motor with the aid of a torque meter and counter.

Above: Models on Graham Lovejoy's table included from left, Stahlwerk RIII, Gym Dandy, Kit Scale Taylorcraft Floatplane, and a Peanut Scale Taupin Peyret. *Photos: Rob Wallace.*

Morrinsville Indoor Free Flight Day 2022 - Alec Fuller

Alan Reed and I travelled up from New Plymouth, together with Andrew Robinson who came up to help out with timing. On arrival, we found the carpark was full and everyone was in the hall and into it. It was a fantastic turnout, possibly the best ever with over twenty flyers, even Bill Long from Christchurch. There was three hours in the morning for flying Hangar Rat, Hand Launch Glider and Hornet Precision events and Peanut Scale, Rubber Scale, Memorial Scale and Kit Scale were run the afternoon.

Hangar Rat

Alan Reed had re-covered his Hangar Rat and after a few trimming flights had it scraping the ceiling in a hall about 12 metres up. I was using a new much stiffer fuselage on my Rat and a new propellor with more pitch and they were both working well. I could pile lots of turns on without any tendency to stall out after launch or worse not take off. It flew really nicely but even with 1800 turns on, it would only climb to about half way to the roof, so it looked pretty disappointing. I was pleasantly surprised that my time was 2m 8sec. An extra 50 turns did not help any for a 2m 7sec. Then, I made the fatal mistake of adding a little positive incidence to get it to climb a bit more. But it was worse - less height and less time by about 20 second.

Why, you may wonder? More incidence, more drag. More drag, slower flying speed, so less lift and less height. After flying I measured the leading edge height and took off the trailing edge height and was gobsmacked that I had nearly 5 degrees of positive incidence, so that little bit of extra incidence was just too much. Often your eyes play tricks on you and the only way to be sure is to get out the Vernier Calipers and measure things properly.

Our table was set up next to Bill Long's (from Christchurch) and I took a keen interest in his exploits. Evidently, he usually flies lefthand circles but one of the drawbacks is that the circles get bigger the longer the flight goes on and in a small space it usually ends up hitting a wall. So Bill was attempting to retrim for right turning circles but never really succeeded in the short time available.

His wife, Kay was also having serious trouble with her model. It would climb to about four metres then rear up into a huge stall. Very weird really and I am not sure of the reason for such behaviour.

Several others were up high dodging rafters including Ricky Bould, Ken Smith and Dave Jackson. Speaking of Dave, he turned out to win Hangar Rat with flights a good 40 seconds more than my best time. Streaks ahead of us all. We needed Matt Klenner there from our Club who at one of our recent indoor meets, did 3m 15 sec in a similar height hall. Maybe we will get him there next year.

Dave Jackson was willing to pass on information and techniques about how to fly Hangar Rats better, for longer. When I asked him about wing incidence. he said that he tries to fly at zero incidence but sometimes needs a little more, up to a maximum of 1/16th of an inch on the leading edge, ie a small amount of positive incidence. In order to fly successfully with less incidence, the C of G has got to be put further back from the leading edge, ie move the wing further forward on the fuselage. Another interesting idea from Dave is that



Upper left: Stan Mauger winding his Nesmith Cougar built by the late Angus Macdonald and flown in Memorial Scale, right at the end of the day.

Upper right: Dave Jackson fitted in an impressive flight with his ultra light and ultra slow flying F1L.

Above: Big and little Eastbourne Monoplanes. Richard Fallas's larger model was Gasparin 120 powered for Kit Scale. Alan Reed's model was flown in Peanut Scale.

when he applies the tissue to the wing, he only applies glue to the perimeter ie the leading and trailing edge and tip and root ribs but not the individual ribs. The theory being that if the wing hits a wall, it will flex rather than breaking lots of ribs. With so much trimming and so many people flying Hangar Rat there was usually a queue to get a timekeeper, sometimes three or four people long. And before long people were running out of time to finish their Hangar Rat flights – moral, get in trimming flights earlier.

Modelair Hornet

There were Hornets everywhere and even little piles of them in corners but hardly anyone flying them. Ricky Boulton declared that the official target time for this Precision Contest was 33 seconds. The person with a flight time closest to 33 seconds is the winner.

I put my usual 850 turns on and went for an official flight and it did not even look like taking off. Next, I tried 1000 turns and it flew very nicely up to about head height for 22 seconds. So based on that, I piled on 1150 turns for my 3rd attempt at getting close to 33 seconds. It was flying way too high and looked like it would be a 40 odd second flight. Well wonder of wonders at about 28 seconds there was a ping and the rubber unhooked its self from the prop and with it only attached to the rear hook did a big rapid stall and dived vertically to the ground for an unlikely time of 34 seconds. Just 1 second over the target time for my last flight. I was expecting a whole raft of Hornet times but it never happened. Stan Mauger put in a couple of times and that was it. So, it was me in first place and Stan in second place. It turned out that my troubles were because I was using a Hangar Rat rubber motor (18 inch loop) instead of the much shorter 12 inch loop for my Hornet. The longer motor gave less torque so it needed more turns for it to fly properly, and the too longer motor was also the reason the rubber worked its way off the prop hook (less end pull).

Hand Launched Glider

This event had several takers including Jason Magill, Graham Lovejoy and Paul Squires with most people flying foam flapped Cats Meow style model or solid wood Sweepette style models and everyone was flying Javelin style. Times were up to about the mid twenties mark for the good guys. Lots of crashing and smashing going on as is usual but all good fun of course.

In between times Dave Jackson flew his F1L Model with see-through wings that most of us would call a microfilm model. His one weighed about 1.2grams including the prop but without the rubber and was covered in OS film that weighs about 0.050grams per 100 sq inches or put simply the OS clear film is about ten times lighter than Lightweight Tissue. This Model was incredible to watch in flight. It seemed to defy the laws of physics. How could anything that flies that slowly, actually fly? I want to build one but I bet my first attempt will be more like 3-4 grams I am sure. Lol.

Scale events

The afternoon was taken up with Scale events and there was a lot of flying going on. Richard Fallas came over to our table and put his much bigger CO2 powered Scale Eastbourne Monoplane next to Alan Reed's Peanut Rubber Eastbourne Monoplane. Big and little. The bigger one turned out to be a real handful and on a couple of occasions we

all spun round to see what had just made that horrendous crash noise -and on each occasion it was this Eastbourne Monoplane. It eventually succumbed and the wings broke off. A shame really but entertaining while it lasted.

Memorial Scale

My only event for the afternoon was Memorial Scale, a new class to encourage folk to fly scale models built by someone else unable to fly them or who had departed this life. In my case it was a Nesmith Cougar Peanut Scale model built by Doug Baunton and donated to me the previous week. Doug had come to the point in his life where he knew he would never fly it and felt that it should be passed on to someone who might fly it. Free to a good home - the notice on it said. Judging for the class is only on flight performance including the takeoff, flight realism and landing. I was up against some stiff competition in this class with Stan Mauger also flying a Nesmith Cougar designed and built by the late Angus MacDonald. Stan didn't manage to get a flying trim only long low flights a few inches off the ground initially, then with a change of rubber the model was transformed giving him a great flight that earned him a round of applause from those watching. For my part I went for left circles and after four or five trim flights had one beauty flight that was near to perfect. So I managed to clinch a win here. A bit surprising really for a class that I have never been involved with ever before in my life. Newbie wins Memorial Scale.

Peanut Scale

Alan Reed did well for a fourth place with his Eastbourne in Peanut but could not match flight times of the Lacey M10s flown by Paul Squires and Dave Jackson with flight times near the minute mark. Nice to see Jason Magill got a 3rd place with a yellow Fike that he made while a teenager. These models can last a long time it seems?

Kit Scale

I did not fly in Kit Scale and did not see much of the flying, however, Stan has mentioned that this will be written up in Scale News that is due out shortly.



Above: Two rather ambitious models built by Anthony Hope-Cross were still at testing stage. They were an A. V. Roe Triplane and beyond it, a Caudron Biplane.
Photo: Ken Smith

Results

Hangar Rat

	Total best 2 flights
1. D. Jackson	346
2. A. Fuller	255
3. R. Bould	202
4. A. Reed	199
5. K. Smith	185
6. W. McGarvey	180
7. K. Long	156
8. B. Long	18

Modelair Hornet

(Target time 33 seconds) Scored on best flight

1. A. Fuller	22	34	+1
2. S. Mauger	26	22	27 -6

Hand Launched Glider

	Total best 2 flights
1. J. Magill	67.8
2. D. Jackson	64.1
3. A. Hope-Cross	29.1

F4D Indoor Rubber Scale

	Static	Flying	Total	
1. G. Lovejoy	752	580	1332	Stahlwerk Reisler RIII
2. S. Mauger	759	486	1245	Fleet Canuck
3. R. Bould	694	527	1221	Luscombe Sedan

F4F Peanut Scale

	Static	Flying	Ranking	
1. P. Squires	38.5	56	1/3	Lacey M10
2. D. Jackson	36.5	57	3/2	LaceyM10
3. J. Magill	31	58	5/1	Fike E
4. A. Reed	37	27	2/6	Eastbourne Monoplane
5. G. Lovejoy	31	52	5/4*	Lockheed Vega
6. R. Bould	35.5	45	4/5*	Fike E
7. R. Fallas	14	10	7/7	Aeronca Defender

(*Flying decides tie-breaker)

Kit Scale

	Static	Flying	Total	
1. M. Mulholland	75	58	133	KK Westland Lysander
2. R. Bould	63	43	106	Veron Comper Swift
3. S. Mauger	63	42	105	Skyleada Curtiss Owl
4. G. Lovejoy	58	45	103	Comet Taylorcraft Seaplane
5. M. Evans	8	42	50	Tern Porterfield Collegiate
6. R. Fallas	7	23	30	Aerographics Eastbourne Monoplane

Memorial Scale

	Scored on flying	Subject	Builder
1. A. Fuller	43	Nesmith Cougar	D. Baunton
2. W. Lightfoot	38	Curtiss Robin	B. Crocker
3. S. Mauger	30	Nesmith Cougar	A. Macdonald

Drury Indoor - Stan Mauger

17-10-22

Just a small number were present on this night, but there was some good flying just the same. Only two put in times for the two scheduled events. RC flyers fitted their flights around the free flight action and there was very little waiting time for either free flight or RC flyers. Tony Woodrooffe judged Kit Scale and Brian Howell timed Modelair Hornet and Kit Scale flights. In Kit Scale, Stan Mauger had a well-trimmed Auster Arrow and soon had a good flight on the board. He was then free to assist Ken Smith with trimming his VMC Kit Scale Cessna 140 and after some minor changes to CG, downthrust and elevation, Ken was rewarded with the best flight of the night. He also spent some time getting his Modelair Hornet to turn comfortably in the space of the hall. After flying this event on the previous day at Morrinsville, Stan also had to keep an eye on the tightness of his Hornet's turn to avoid wall-banging, eventually managing a flight close to the target time. There were a number of Vapor flyers. John Macdonald came to watch the action but was soon handed an RC Vapor by Alan Bright, to practice gentle circuits of the hall. Like Alan, Paul Burgess had also just got under way with flying Vapors. Rex Benns was also seen making confident flights with his Vapor. Geoff Burgess came well equipped with his RC models that included an Extra 300, Sopwith Pup and Citabria.

Results

Kit Scale

		Static	Flying	TOTAL
1. S. Mauger	Keil Kraft Auster Arrow	65	29	94
2 K. Smith	VMC Cessna 140	10	45	55

Modelair Hornet

Target time 33 seconds nearest of three flights wins

			SCORE
1. S. Mauger	31.66	32.50	-.05
2 K. Smith	17.97	12.13	-15.03



Right: Geoff Burgess's RC Sopwith Pup is now a regular at Drury indoor nights.



Upper: Tony Woodroofe judging Stan Mauger's Keil Kraft Auster Arrow for static points.

Left: After some perseverance Ken Smith was rewarded with a great flight with his VMC Cessna 140. He is seen loading rubber into the model. His Modelair Hornet is seen in the foreground.

TSB Stadium Event New Plymouth Model Aero Club

- Alec Fuller

7-10-22

Wow, what an exciting nights flying we had. As part of the promotion of the meeting, I put it out there that maybe this would be the night when someone would break the 3 minute mark in Hangar Rat and wouldn't you know it, - that is what we got. But I am surprised and delighted at who that person was. There were probably three possible contenders, Allen Lawrence, young Matius Hunt and Matt Klenner. The lucky man was Matt Klenner. He is a newcomer to Hangar Rat and stolen from the realms of Radio Control. Since building his first and only Hanger Rat, a couple of years ago, at a Build Workshop, he has had some great successes and as is usual with Hangar Rats, some flying meetings when his Rat just did not want to behave. He is one of those lucky people that have managed to better our Hangar Rat guru Allen Lawrence in a competition.

After problems with his model not wanting to take off at the previous meeting, he decided to try a radical trim change to see if he could change his fortunes. He has been following my often promoted trimming theory about using less incidence on the wing to give less drag and moving the C of G back from 50% to nearer 60-65%. This time, following a discussion earlier in the week, he decided to try positive incidence on the wing and then moving the wing forward and backwards on the fuselage, i.e. moving the C of G until it flies again. Well, right from his first test flights, he was feeling buoyant and almost excited. Takeoffs were good and it wasn't stalling out on launch. His first official flight was an impressive 2 minutes 39 second, just a little way under the rafters. He was a man on a mission and almost sensed that success was within his grasp. Another 100 turns to 1700 and he was ready to fly again. Climb out from launch was unusual and impressive at about 30 degrees with the torque from the motor twisting the wings over to the left as it was circling to the right, an unusual sight. After the initial surge of power, the climb flattened out to a more sedate climb from half way up, on to the rafters at the 12 or 13 metre mark.

He managed the fly through the rafter support beams above the arch and then found clear air with anticipation growing with every passing second. The timekeeper was announcing the time 2 minutes, still scraping the rafters, 2 minutes 30 seconds and below the rafters now, 2 minutes 50 seconds and still half of the height up there. He was going to do it! There were great shouts of joy and jubilation from a very excited Matt as the timekeeper announced that 3 minutes had passed. Everybody present was offering their congratulations and the model hadn't even landed yet!. It was a great moment. Well done Matt. You visualized that 3 minute goal and nailed it, with a 3 min 15 sec flight. And just to show it wasn't a fluke, followed it up with a 3 minute 9 sec flight that was marred a little by a collision with a light fitting hanging from the rafters.

There is nothing unusual about this model, it is built from a standard kit from Avetek (now HangerOne sells them) and weighs about 6.5-7.0g and flying on the normal loop of 3/32nd, made from a Yard (36 inches) of rubber. Matt mentioned that at the previous meeting he was concerned that the model seemed to only climb to about half the height of



Left: Alec Fuller winding his Hangar Rat
Upper: Matt Klenner has been getting great times from his Hangar Rat.

the hall and then land still with about 200 turns on the motor. It turned out to be that the motor was worn out and not producing enough torque to climb high and so landing still with lots of turns. A new rubber motor and it climbs to the roof and runs out of turns just a couple of metres from the deck.

As the evening progressed, rubber motors were broken. Both Matt and young Matius were breaking a lot of motors. Its easy to forget that not everyone knows the basics about making and using rubber motors.

When Knotting the rubber you need to provide some temporary lubricant to stop it from tearing when you stretch and tighten the knot. Water is good but for most of us, saliva is fine, suck the knot before you pull it tight. A strand of wool into the middle of the knot may help to stop it slipping in use. Not everyone uses the wool trick but it can't hurt.

A new motor needs to be 'run-in' before you wind on the big turns. A new 3/32" motor will break at 1200 or maybe 1300 or 1400 turns. So to avoid breaking a new motor, wind on 1000 turns and either test fly or unwind it using your winder.

Lubrication: These days most of us are using Silicon grease, either CRC at \$15 from Bunnings and Mitre10 or Dow Corning at probably double that price but has a firmer texture that I like, a bit like soft cheese.

We had five people flying Hanger Rat but Matius didn't get his one sorted enough to record times but had some good flights. Allen Lawrence came on looking well sorted, and getting up to rafter height for a couple of flights at 2m 20s and 2m 25s - good flights but a second place for him.

I had my usual share of troubles with not taking off and after taking a bit of ribbing from Matt Klenner, he revealed his big secret - changing to positive incidence. I thought, what the heck, what's to lose? So I went back to 55% CG and about 1mm positive incidence. Certainly it wasn't an instant magic success but at least I was getting better times and got a 2m 08s and a 2m16s reasonable scores for a 3rd place. I must admit that with three people using one Stooage, there was a lot of waiting around. So, before the next indoor meeting, I will encourage the other two people to build their own Stooages (three bits of wood screwed together, clamped to the bench to hold the tail of the model while its wound up). Alan Reed is back into Hangar Rat and improving his flight times after re-covering his model - less crinkle on the tissue I believe, getting good height and smooth flying with a 1m 58s and a 2m 03s best times for 4th place.

It seems that there are other equally successful ways of finding a flying trim for your Hanger Rat. My preferred method is to choose a C of G position and then adjust the wing incidence until you get a long flat flight on just 200 turns. Basically a glide with the prop spinning and not producing drag. But it seems that other folk trim doing the opposite - chose a wing incidence and then alter the C of G by moving the wing back or forwards along the fuselage. Certainly Matt and Matius have both used this trim method and there is no denying they have both been very successful. You do have to move the wing in the right direction. So if the model stalls, move the wing rearwards. If the model dives, move the wing forward.

There was a fair amount of other flying activity at the other RC end of the hall with 3D acrobatic models and a few delta fighters and multi rotor planes that seem to be popular. Also a lot of activity in indoor Hand Launch Glider too. Robert Bolton has been doing a development program, building new models incorporating improvements and insights from the previous meetings' experiences. He has moved away from foam flappers and gone for fully foam wings with balsa bracing inset for extra strength and rigidity and big wingspan, 600-750mm.

There has been a small change to the New Zealand Indoor Hand Launch Glider Rules that now allow "tip launch" as well as normal Javelin launch, ie you are allowed to hold any part of the model for launch, not just the fuselage.

The large part of the evening was spent in trying to improve and perfect this new style of launch. Its not Discus style launch but is an underarm half circle toss, similar to throwing a ball into the air vertically, using under arm. Robert is currently somewhat impaired wearing a moonboot to immobilise his leg after suffering an injury. So most of the action was by his son Harry and daughter Sophia with guidance from Dad and Rod Brown was also making great strides in this new launch style.

Getting a good transit is the secret and took a fair bit of trimming to achieve but once sorted they put effort into getting higher and were getting near the twelve or thirteen metre high mark. The flight times were getting over twenty seconds with Harry's young arms leading the pack with a couple of flights over twenty seven seconds. Rod Brown was putting his outdoor Tip Launch experience to good use using a variation where he holds the model with the wings facing his knees. It looks very weird but it certainly works.

He got a 24.9 and a 25.4seconds for a well deserved second place using one of Robert's latest designs. Sophia was also doing well with the new models and new style, ending with exactly the same score as Allen Lawrence 43.1s (for best 2 flights added), Allen flying a much smaller lighter Mini Cats Meow (a prize from 2022 Heave Ho international Postal Comp).

I noticed that Robert's new models with all foam balsa reinforced wings seem to be far more robust than the earlier balsa/foam flappers. I saw one of Roberts models repeatedly crash vertically into the floor on the Ear Plug nose and survive unscathed. With big Cats Meow flapper models you would spend most of the evening glueing one or both wings back on the fuselage.

Rodney has been busy making a new Modelair Hornet. It is lighter, 10g down from 14g. and flew almost perfectly on its maiden flight. Unfortunately the warps that Rod carefully steamed out of the sheet balsa wings seemed to re-appear almost as you stood and looked at the model! It made for some entertaining flights. He got his old one out and that seemed more reliable. Allen Lawrence sorted out his model and was getting 30 second flights. I wound 850 turns on the Hanger Rat rubber motor on my Hornet and got 30 seconds as well, but we didn't run a Precision competition as it was getting late.

Towards the end of the night I couldn't resist getting out the Mini-Sting little 6 inch balsa and foam flappers. Officially this class is flown internationally as F1N-150. The 150mm being 6 inch wing span. We have flown them as indoor hand launch gliders before, for several years but I wanted to see how they would go in Catapult in a big stadium. I cut some 0.025" 25 thou rubber and used a big loop (maybe 12 inch) for launching. These Mini Stings have been trimmed for the slower hand launch and could probably be optimised for a better transition off the top of the climb.The favourite path is to have it bunt to level off the top of the vertical launch. This worked well and I could get about 23 seconds with a little care. This is not too far off what people overseas are getting in F1N-150.

Overall another great indoor meeting with some memorable moments, like Matt Klenner doing 3 minutes 15 seconds in Hangar Rat, that was amazing. And seeing the new style under-arm toss launch, breathing new life into indoor chucky was very cool. Thanks, everybody who made the effort to build these models and fly them on the night.

Results

Hangar Rat (NDC)

(Best 2 scores iadded for final score)

1. Matt Klenner	2:39	3:15	3:09	3:17	2:56 = 6:32
2. Allen Lawrence	2:14	2-20	1:57	1:18	2:25 = 4-45
3. Alec Fuller	1:45	2:08	2:16		= 4-24
4. Alan Reed	1-47	1-58	1-38	1-21	2.03 = 4-01

Indoor Hand Launch Glider (NDC) (Only 2 best scores out of 10 flights shown)

1. Harry Bolton	0:27.2	0:27.6		= 0:54.8
2. Rod Brown	0:25.4	0:24.9		= 0:50.3
3.= Sophia Bolton	0:22.1	0:21.0		= 0:43.1
3.= Allen Lawrence	0:20.8	0:22.3		= 0:43.1

Building Boards - Brian Howell

While many of us make model building boards ourselves, boards available in retail stores can be easily converted to conventional soft surfaced boards with little work. Metal boards are ideal for use as magnetic building boards. The Warehouse, for example has both kinds of boards.

Sizes of boards

280 x 210 is good for kit scale, indoor rubber and other similar sized models

490 x 370 for larger models

540 x 440 is good for larger models

900 x 600 suits even larger models!

Cork boards are fine for pins if the cork which is supported by corrugated card, is replaced with thicker cork see below.

Metal boards

Pick the best one you can find, ensuring that it is flat and has no dents, scratches etc. It is advisable to make a frame with supports for larger boards to ensure flatness.

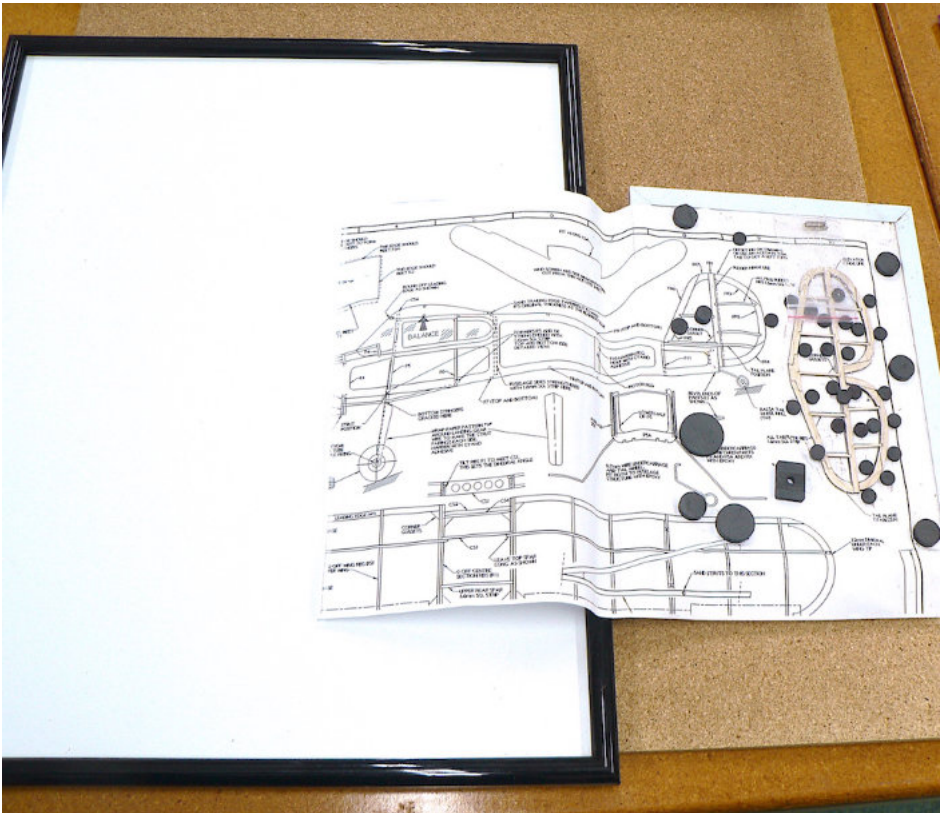
I have sourced magnets from \$2 shops. There are a wide variety of round ones and also square ones to hold ribs and other parts at 90 degrees. Magnets can also be sourced from AMF Magnets.

Cork surfaced boards

To replace cork I found some cork tiles of 900 x 600 from Portugal Cork in East Tamaki.



Above: Ready made cork and metal boards suitable for adaptation to building boards.
Photos: Stan Mauger.



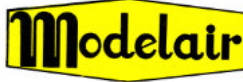
Above: Suitable magnets for metal boards can be sourced cheaply at a variety of sizes and work well.

Answers to the Christmas Quiz on page 2

- | | |
|---|--|
| 1. Fred Hemsall | 9. New Zealand Aerial Mapping Ltd |
| 2. William McCoombs | 10. Piet van Asch |
| 3. H.J. Towner and Howard Boys | 11. Harry Barr with later modifications by M Starick |
| 4. Because of a Polio epidemic they were decentralized and not held in one central location | 12. Nevilles E. 'Jim' Walker |
| 5. Carterton near Masterton in the lower North Island | 13. Angus Macdonald |
| 6. 1cc | 14. In the MFNZ archive in the care of René Redmond |
| 7. Thrust and drag, lift and weight | 15. Walter Good |
| 8. Scramble | |

NEXT YEAR

Angus Macdonald Commemoration



Hornet

EVENT

Drury School Hall, Young Crescent, Drury
April 17, 2023

Plans and building notes for the Hornet were in the November 2020 Slipstream.
For a full-size plan contact Stan Mauger.
Ricky Bould has kits of parts available for those who would like to build one.

Indoor Free Flight Morrinsville Day

Sunday October 8, 2023

- F4D Rubber Scale
- F4F Peanut Scale
- Memorial Scale
- Kit Scale
- Hangar Rat
- HL Glider
- Modelair Hornet

NEXT YEAR

Morrinsville Events Centre,
21 Ron Ladd Place, Morrinsville

Contact Stan Mauger 09 575 7971, stanm09c4@gmail.com
for more information



Organised by the Auckland Model Aero Club Inc
in conjunction with the Scale Free Flight & Control Line SIG

Calendar **December - February**

For information about the location of club fields and cancellations or postponement of flying, contact the field stewards.

KARAKA

Karaka Sports Park

Free flight and radio flying within field limitations

Model trimming and flying

Karaka Steward

Brendon Neilson 09 239 3204 2neilson@gmail.com

HOTEO

Sundays

Call the field steward if you would like to go up and do some free flight and vintage flying there.

NDC FF Vintage events

(refer to MFNZ under NDC list).

Hoteo Steward

Paul Evans 479-6378 ziply@xtra.co.nz

AKA AKA

Saturdays & Sundays

Aka Aka Steward

Intending flyers should phone Lloyd Hull to arrange to fly
Lloyd Hull 09 235 2890

CONTROL LINE

As advised

Control line flying

Intending flyers should phone Ricky Bould to confirm where and whether there will be flying.

C/L Steward

Ricky Bould 478 8949 unimec1994@gmail.com

INDOOR EVENTS

Drury

Monday November **21**

Drury School Hall

Indoor free flight scale all classes (7.30 - 10.00pm)
(For Club points).

NOTE: there will be no December or January Drury indoor flying evenings

Monday February **20**

Hangar Rat (7.30 - 10.00pm) (For Club points).

Indoor Steward

Brian Howell 020 4121 5201 b.how@xtra.co.nz

Calendar 2023

Carterton

January **1 - 7 2023**

New Zealand Nationals

Refer www.modelflyingnz.org for details

Drury

April **17 2023**

**Modelair Hornet
Angus Macdonald Commemoration**

See notice opposite

Morrinsville Events Centre Indoor Free Flight Day

October **8 2023**

See notice opposite

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Club subscriptions

NZMAA Affiliation is mandatory for Club flying

Senior \$50 (+\$95 NZMAA) **Family** \$55 (+\$100 NZMAA)

Junior \$10 (+\$30 NZMAA) **Non-flying** \$40

Intending members with current NZMAA affiliation pay only the AMAC sub

Please make payments using online bank transfer to the Club bank account
030291-0086069-00 (please use your name as the reference)

NEXT CLUB MEETING AND NATTER NIGHT

**Monthly Club meetings 7.30pm ASME Clubrooms,
Peterson Reserve, Panmure.**

Monday December 5

Theme: Unorthodox models

Monday February 6

Theme: Electric models and equipment

**Plus for both meetings, your current projects, models, plans,
engines and photographs etc for the table.**

Trading table: Buy swap and sell.

Visitors and intending members welcome