ScaleNews

Issue 5

Official Newsletter for Free Flight Scale flying in New Zealand produced by the Free Flight & Control Line Scale SIG

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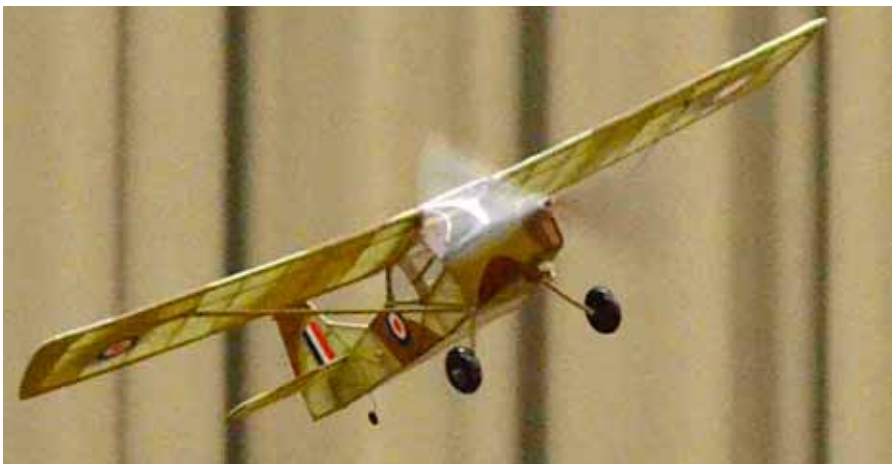
Memorial Flight - provisional event at the Nationals

August 17 Drury School Hall
Free Flight Scale All Classes



Join us in Kit Scale, Open Rubber Scale and Peanut Scale competition from 7.30pm.

An AMAC Event - everyone welcome

Seen at Indoor, Don Spray's AOP9,
Photo: John Swales.

Free Flight contest day
Indoor flying at Morrinsville

Sunday October 11, 2020

- **F4D Rubber Scale, F4F Peanut Scale**
  Flown to FAI rules.
  Refer to link on MFNZ website under Scale FF & CL SIG
- **Kit Scale**
  Flown to rules on MFNZ website under Scale FF & CL SIG
- **Hangar Rat, Hand Launched Glider**
  MFNZ rules
- **Modelair Hornet**
  AMAC rules

Fliers Entry: $20.00

Come and join us

Venue: **Westpac Stadium Hall, 21 Ron Ladd Place, Morrinsville**

Programme:	**9.45am**	Arrive and unpack ready for start time
	10.00am	Hangar Rat, HL Glider and Modelair Hornet. Scale static judging until 12.30pm
	12.30pm	Peanut Scale, Rubber Scale, Kit Scale
	3.45pm	Prizegiving.
	3.55pm	Hall vacated.

Spectators welcome

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

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

ScaleNews

August 20
Issue 5

A periodic publication with news of interest to free flight and control line scale modellers in New Zealand and beyond.

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COVER PHOTOGRAPH
Covid-19 prevented the New Zealand contingent from flying in the Richmond Scale Rally this year. In this flashback to the 2019 rally, Don Spray is seen flying his CO2 Piper Pacer, in the early morning mist. Mike Mulholland's rubber powered Avetek CT4 is seen climbing away in the background.

Photo: Stan Mauger

Scale News issue indexing.
Following feedback, from this issue onwards, issues will have an issue number to simplify computer indexing.

Editorial

As elsewhere, Covid-19 limited local outdoor flying for a period this year. Being April –May it was sadly the time when we might have expected our best weather for testing! Besides local flying, we do however, have some important events to look forward to. The Indoor flying day at Morrinsville on October 11 continues to provide a great occasion to keep in contact with other scale flyers from across the North Island as well as to enjoy competing in the spacious hall. There is still time to complete models for the various classes offered. For anyone able to come to the Drury indoor evenings, there is a suitable opportunity to trim out models as well as to fly in the informal contests run by the Auckland MAC.

Next year's New Zealand Nationals at Carterton promise great flying space and competition for those able to attend. The programme is now "99% finalised" and the scale programme is included on page 30. Our thanks to Frazer Briggs who has done a great job in organising the Nationals programme. The early starts in outdoor events have proved to ensure the best flying conditions over the years, and also leave time to take part in other outdoor events that run later than the 9.00 end time for free flight events and to get to 9.30am starts for control line scale events. On the last two pages of the newsletter there is an explanation of the distinctions between Control line Sport Scale and F4B control line Scale. There were several requests for the re-inclusion of F4B again in this years programme. If you fly this class, please support it. There is also a background and rules on the new provisional Memorial Flight event. If you have an interest in this class and own a model suitable to enter, please make space for it in your vehicle and join us on the field!

By the number of building reports available to include in this issue, it seems Covid- 19 lock down time and the period following has seen some good progress on building projects. From the feedback I receive, I can say that these reports have wide interest. It is great to see that the VMC kits made available by Ricky Bould have encouraged some new kit scale building.

Well-known UK scale modeller Mike Stuart visited Auckland earlier in the year and it was great to be able to include his views on a number of aspects of indoor scale modelling discussed with Mike Mulholland who interviewed him. After seeing Bryan Lea's DHC Beaver in action at BMFA Nationals over the years it was good to receive his article on the model and proof that the Beaver is a viable free flight scale subject.

There are also a couple of flying reports from overseas events in this issue. Ricky was able to attend the indoor day at Bushfield and has offered a report and photographs of this event held in a large leisure centre hall. Although the usual group of New Zealand scale flyers were not able to attend Richmond this year, Phil Warren has sent a report of the enjoyable scale flying in the calm weather conditions, we have come to expect!

As always, many thanks to all contributors. Enjoy this issue of Scale News.

Stan Mauger

From the UK, Gordon Hannah has sent this photo of his intricate as yet unflown 17 inch span rubber powered Bleriot X11 from a kit supplied by Steve Webb.

Scale Models at Karaka

George Fay had his Pe2 rubber twin flying at Karaka on the RedFin Challenge Day. It flew well in the mild weather conditions and is seen here climbing away from the launch. This is his second version of this subject. He built a smaller version a few years back. The first model was finished in a Russian Arctic Colour scheme. The later model show **(Upper)** was in Russian three tone camouflage colours. Also flown was his Folkerts FK4 Racer (**lower)**. The model is now well trimmed and was seen flying well on a three bladed prop.

Also on the RedFin Challenge Day, Mike Mulholland was seen flying Yolande's Avetek rubber scale AOP9. The model was beautifully trimmed and a delight to watch. Yolande had built the model for the Kit Scale event at the 2019 Richmond Scale Rally and was joint winner of the event with this model there.

RICKY BOULD

Bushfield indoor meeting

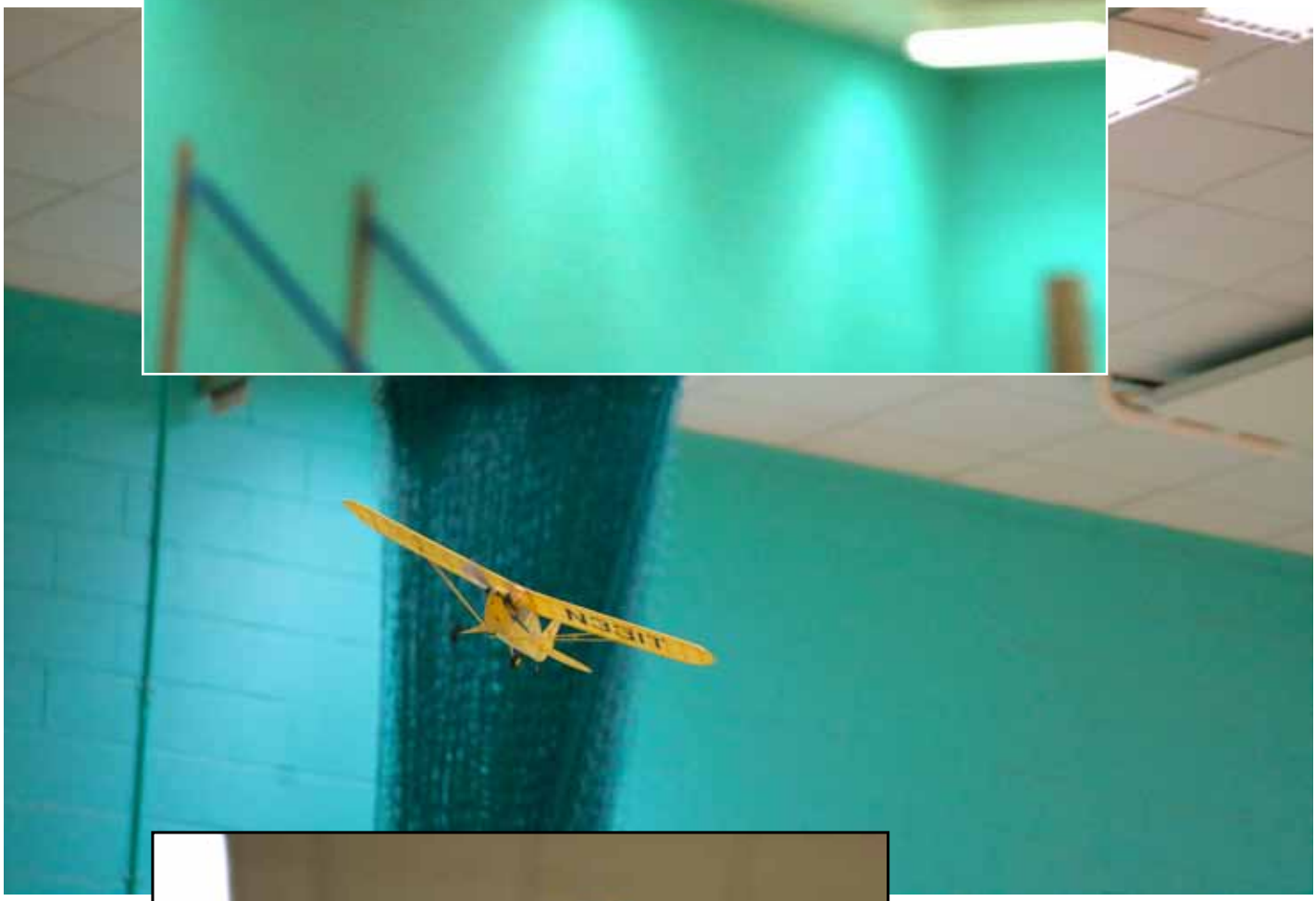
In February I was able to attend a Bushfield indoor meeting run by Peterborough Model Flying Club. Bushfield is their indoor venue and flying was over four hours on a Saturday morning. This time I did not have a model so it was more of a social occasion and gave time for some photography.

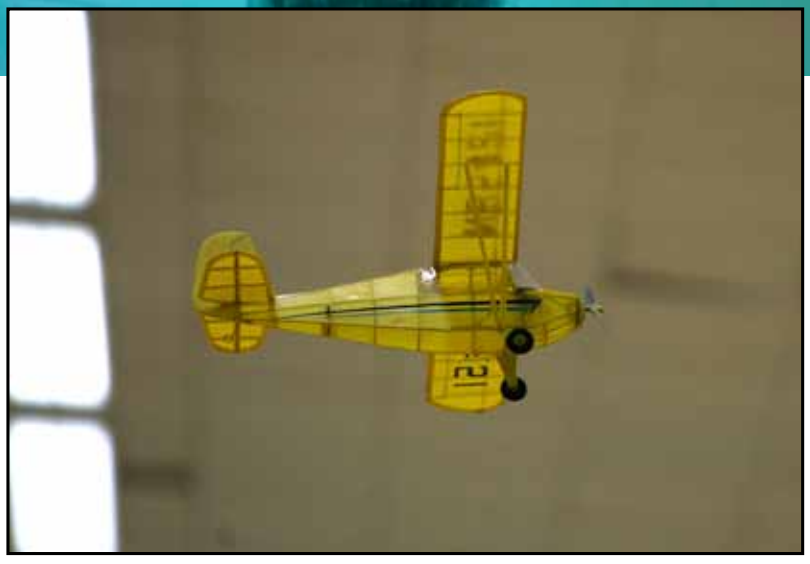
The normal range of classes that included, Jiminie Cricket - a BMFA Class, Hangar Rat, Peanut Scale and Kit Scale were flown. Hangar Rats were a mix of Icara kits and scratch builds to the approved designs. At the end of the day there was a spot landing competition for closest to the bottle of wine. The only restriction was that there must be a 30 second minimum flight time. The model that landed closest to the bottle placed on the floor won. This time a peanut Lacy M10 took the honours.

The attendance was down on normal due to a less than promising weather forecast but the Impington Club were well represented with members flying a wide range of Peanuts and scale models that included a Spirit of St Louis that was eventually tamed and looked good in the air, as did the Farman Moustique peanut. The early Goupy Triplane was also a sight to behold.

Bushfield is a large hall, just a little bigger than Morrinsville, is well set up, and big enough for several models to be flown at the same time. It was a most enjoyable day's flying.

RICKY BOULD





OPPOSITE PAGE

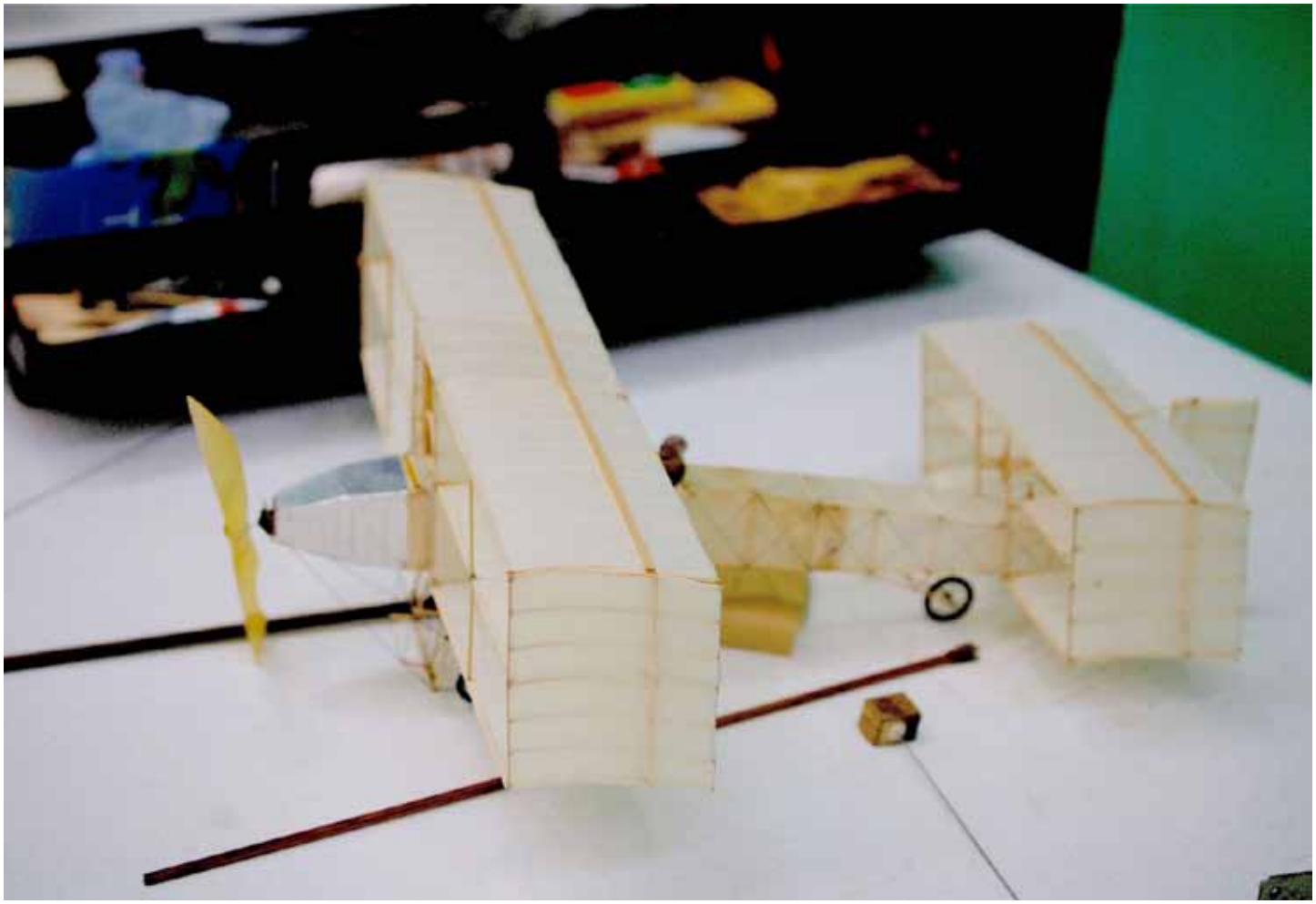
TOP: Graham Banham's Tipsy Nipper gaining good height in the hall.

LOWER: Gordon Hannah's free flight DH 53 Humming Bird built from a kit by Tony Ray for RC, is electric powered.

THIS PAGE

TOP: Brian Waterland's Kit Scale Baby Ace which was flying well.

CENTRE AND LOWER: There were also good flights from a Piper Cub and an Aeronca Champion.



TOP & LOWER: Gordon Hannah's Goupy triplane. The full-sized of which was made by Voisin. It was flying realistically, but made only short flights.

Richmond Free Flight Scale Rally

This report on the recent Scale Rally held in Richmond NSW on July 4-5 was received from Phil Warren. Normally a contingent of New Zealand scale flyers attend, but this year this was not possible because of Covid 19 - Ed

A reduced number of flyers participated this year, due to you Covid 19. Still we had ten members flying a total of about twenty models. Some of the non-placing models were Caudron, Nieuport 11, Taylorcraft, Miles Magister, Beaver, Shinden, Piper Cub, FE8, Peyret Taupin, Comper Swift, Atalante GB10, Portsmouth Aerocar, Grumman Hellcat and Sopwith 1½ Strutter. Many models were not trimmed and suffered minor damage with short grass hard ground. It shows the importance of landing on their undercarriage. Not mentioning any names (PW) but one model when being wound came off the stooge and flew into the winder, with repairs needed overnight. Another model (TB) when being wound had the motor peg come through the model causing damage. (PJ) broke his Nieuport 11 on both days, landings were a bit too hard, but I am sure it will fly again. (RS) seemed to be having trouble with electricity, top flight about six seconds.

Saturday became breezy after a couple of hours, so we decided to continue flying on Sunday. The first event on Sunday was a scramble followed by scale. Michael Towell flew a semi scale SE5A but suffered a broken wing early in the event. The weather was perfect for flying with barely any wind, so the scramblers did not have big retrievals.

Lots of scale models were in the air all day. Lunch was an on-field BBQ enjoyed by all. The judging for scale was for flight only and judged by fellow competitors with their choice of 1st, 2nd, and 3rd in power, electric and rubber classes.

Power

1. Roy Summersby	Nieuport 17
2. Peter Scott	SE5A
3. Peter Jackson	SE5A

Electric

1. Roy Summersby	Grumman Widgeon

Rubber

1. Phil Warren	Lemberger LD 20B
2. Susan Wilford	Stinson Voyager
3. Stephen Bojec	Globe swift

Congratulations to all who competed, a good time was had by all. I hope by next year all will have settled down and we can hold the Trans-Tasman that was planned for this year.

PHIL WARREN

TOP: Phil Warren's Lemberger LD 20B winner of Free Flight Rubber Scale.

LOWER: Phil's Arup, a 1930s American aircraft.

DHC Antarctic Beaver
Walk around

The original De Havilland Beaver NZ6001 was purchased for the Trans Antarctic Expedition in 1956. In January 1960 it was written off in a white-out accident on the Beardmore Glacier and not brought back. The ski-equipped DHC Beaver displayed in the Air Force Museum at Wigram is in the RNZAF Antarctic colour scheme. This aircraft was originally ZK-CMU.

The New Zealand Warbirds example which was originally ZK-CKH is also painted in the same high visibility colour scheme and is still flown by the NZ Warbirds and located at their Ardmore base. The original Beaver was initially NZ6001 but when it was realised that that serial had been asigned to a Meteor, it was changed to NZ6010.

Both the Wigram Museum's Beaver and the Warbirds aircraft, carry the ealier serial NZ6001.

Arguably, attempts to model this subject were initially hampered by inaccurate building plans and lack of documentation drawings. More recently, better reference has become available and Bryan Lea, whose model appears on page 13 has shown that this model can be built to fly well and place well in National competition. If you would like to model this subject, I have many walk around detail photos that I will gladly share.

STAN MAUGER

OPPOSITE PAGE
Good side views of the Antarctic Beaver.

THIS PAGE
Several photographs to show corrugations on tail control surfaces.

A selection of useful detail photographs of the aircraft from a walk-around. These were taken some years back at a NZ Warbirds open day.

Bryan Lea's
DHC Beaver

Bryan's DHC Antarctic Beaver during the power scale competition for the BMFA Super scale Trophy, at RAF Barkston Heath, Lincolnshire.

I built my model in 2012 so some details may have faded from the memory. I decided on a scale of 1/12th which gave me a model span of 48 inches. I got the Aeromodeller scale drawing blown up to the required size at a local copy shop. All of the available Beaver model plans show fabric/tissue covered open wing structures. Since the Beaver is a metal covered aircraft I decided that for realism foam wings were the way to go. The wings were hot wired cut from white foam and covered in thin white card. No spars were used just a leading edge and a piece of 1/8 balsa where the flaps and ailerons attach to the main wing. I proved the strength of the wings in several crashes! The engine bearers were widely spaced to allow the use of an engine plate. The chosen power plant was the PAW .06 diesel but this was later changed to a DC Sabre 1.5cc. The Sabre swung a bigger propellor and enabled ROG take offs. I just made up the construction as I went along so there is no proper plan. The top, sides and bottom of the fuselage were 1/16th balsa sheet. On the Beaver the corners of the fuselage are noticeably rounded so I used soft 1/2 inch square balsa longerons rounded off into a quadrant shape. The rudder and elevators were made from Proskin thin glass fibre sheet from Mick Reeves. The corrugations were a triangular plastic called Plastruct. This material is used by the plastic kit and model railway people. You can see how it was used in the photo. I think the photo shows a new rudder being attached after I noticed that something was wrong with the shape of it. The wing strut on a Beaver attaches to the fuselage through the undercarriage fairing. This proved to be somewhat troublesome to arrange but we got there in the end. On most model plans the designers side step this and have the strut attaching to a clear area of the fuselage. The struts are held on by elastic bands through the fuselage. This also allows a sneaky bit of extra dihedral to creep in. The model was sprayed International Orange using rattle cans supplied by a local car refinishing place. Now International Orange may have been the colour of the Beaver in the Antarctic but the one flying today in New Zealand is more of a reddish orange.

At the 2012 BMFA Nats the model came 4th, the 2012 Selby Trophy 3rd and at the 2013 BMFA Nats 2nd. Flying it did have its problems though. It had a tendency to spiral dive to the left soon after launch which was only resolved after Ray Hall told me to put in some up aileron on the starboard wing. On the Sunday evening of the 2012 Nats it put in 3 flights all of which scored roughly 1500 points. The static score was 1287 points. The thing that let the static score down was lack of surface texture i.e. panel lines and rivets. I have had some ideas along these lines and started a second Beaver fuselage. Unfortunately this was put to one side when I built my latest model, the Spartan Arrow but I may come back to it one day. Thanks to Stan Mauger and Ricky Bould I have all the photos I could possibly need so no excuses there.

ABOVE:
The Beaver on its way to competition placing at the BMFA Nationals.

LEFT:
Corrugations on tail flying surfaces made from triangular plastic called Plastruct.

Mike Stuart
Free flight scale

Mike Stuart seen with his Robinson Redwing at the 2019 BMFA Indoor Scale Nats. Photo: Andy Sephton

During Mike Stuart's visit to Auckland last March, Mike Mulholland was able to spend some time with him to talk about free flight scale. Here is a report – Ed.

Living close to Manchester airport and being constantly aware of full-size aircraft was a good environment for an interest in aeromodelling. Mike had built and flown scale models for a number of years, just liking the fun of building them. His trips to Old Warden were to fly, though not competitively, and having read Aeromodeller and learnt about competitions, he was able to recognise the famous names there.

Competition flying

His first foray into competiton flying was in 1999 when he entered a new model, a small tissue covered Comet Curtiss Hawk P6E. There was a fly-off of the top six models and these were chosen by flyers at the event. His Curtiss was chosen much to his surprise. It did not win, but he realised that there were models further down the list than his. However, it was entering the Nationals that year and getting the second highest flying mark with the same model, that got him in Mike's words "completely hooked". For the next Nationals he decided to build a model that would do better in static, but it turned out to be a very heavy, over complicated and very detailed model that didn't fly well. It was a step too far! But the Nationals were an opportunity to meet aeromodelling heroes and to find that they were very friendly, helpful and welcoming.

One modeller suggested airbrushing the next model he built, rather than just settling for an unpainted finish. It was an awakening to learn of the detail that judges looked for in static judging at the time. He also got suggestions for trimming and found everyone keen to see someone new joining in.

Model preferences

Most of Mike's models are 'stick and tissue' and he has always had a preference for constructing 3D structures and covering them. He reflected that he had never been tempted to 'go the foam route' because that was more like carving or sculpting a shape.

Most of Mike's scale model production has been for indoor or outdoor rubber powered models. He had flown outdoor electric but expressed a wish to do twins that have short nacelles like a Miles Aerovan. This was a subject for twin electric that was high on his list. He had also built a diesel scale model, a 36" Fairey Swordfish with a Merlin that was good fun to fly, even if messy, with a lot of cleaning up to do afterwards!

The website

Mike's free flight scale website has been running for a number of years now and has received a great number of emails and correspondence, but the interest and the sorts of questions has not changed much from the early days before Hip Pocket. He had found that emails had come from beginners who had just come across the website by accident and wanted to give it a go. But it was mainly older modellers who used to build when they were youngsters and wanted to have another go at it. Sometimes people sent him pictures of first attempts at models and he was always happy to give advice. He often pointed them to the Comper Swift article on his site. Several people had built Comper Swifts using that article and had got them to fly. Mike credited Phil Smith with a design that he described as "a cracker".

Trimming preferences

Mike expressed a preference for setting up models to turn left. He reflected that he tended to go left because he had been told years back, that left is safer especially for low wingers. The disadvantage indoors he found, was that if thrust angles were not right then models tended to straighten out when the torque rolled off and to head for the walls. He cited Dave Rees, who when he was flying his coconuts, used to fly them right on the basis that the turn would tighten up and was less likely to destroy the model against the wall. Mike's standard trim was going left with right thrust and with left aileron bent down to keep the wing up or the right aileron up, or both. That seemed to work for him. Nevertheless, he pointed out that for flying outdoors a lot of American flyers go right to get their models to climb better. He felt that Indoors, turn settings could be problematic. He had seen a lot of models trying to ROG but the left wing kept touching the floor as they went around. What was wanted was the biggest circle possible to impress the judges, without risking going into the wall. Down aileron on the left could make all the difference, combined with right thrust to get a stable turn and keep the wing up. His standard trim was 3˚ incidence on the wing, 0˚ on the stabiliser or 3˚ between the two and just adding nose weight until the model seemed to fly. The lighter the model the better. He was worried about the weight of his Fox Moth having never flown anything so big indoors. He had had concern that it might be tricky because the wing loading was so low. It turned out to be one of the easiest models that he had had to trim indoors, because it did everything so slowly. Everything was easy even with a low wing loading. Less thrust and other adjustments were needed to persuade it to fly.

Building for lightness

Mike was enthusiastic about keeping models light. He suggested that some parts of the model did not need the lightest balsa, like the longerons for example. It was the way that

sticks were put together, citing the art of doing quite complex shapes and using not too many sticks. As an example, he referred to Dave Rees's way of designing wings that were very light for their strength. Mike regarded building big light models easier, because he could handle 1/16" balsa without breaking it, but much smaller models were much harder to build light. He saw the realism of coming down to smaller balsa sizes for bigger rubber models.

Surface finishes

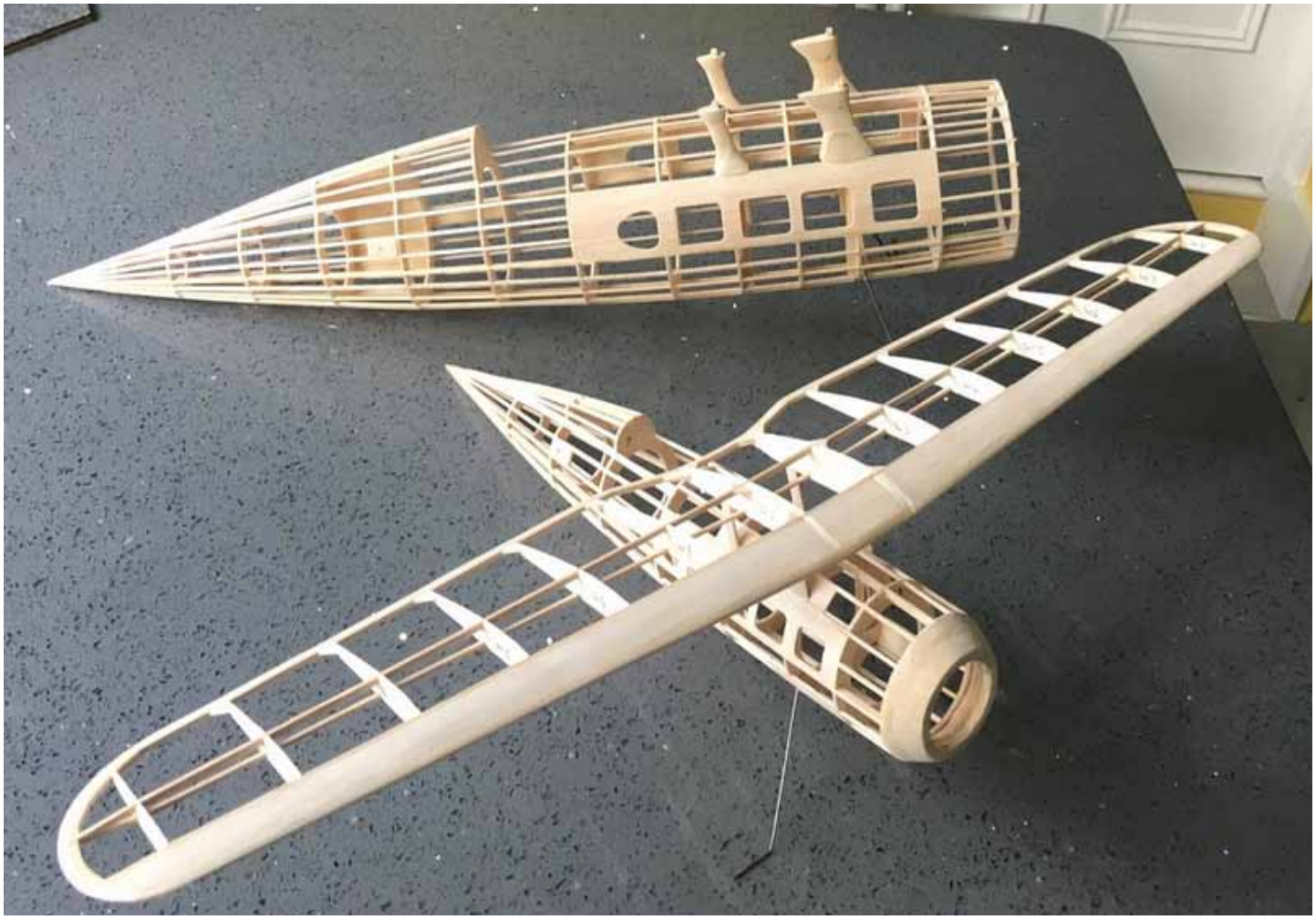
Mike's preferred paint was enamels just thinned with white spirits. Silver aeroplanes had an advantage because of the lightness of silver paint and less paint was needed to get an opaque surface. His preferred brand was Xtracolor and RAF high speed silver as it gave a good satin doped fabric finish. RLM silver gave a similar finish. He was aware that others in the UK used acrylics and these paints were lighter than enamels, but he had "never got on with them", and suspected that tissue could go a bit limp and never quite tighten up as much with them.

Scale subjects

Asked whether he was aware of any criteria that steered him to select one subject over another, Mike reflected that he liked to build types that no one had done before. Finding obscure subjects was one thing, but then enough reference material had to be found, to satisfy the judges. Amongst his basic criteria were - Good 3 view photos and a 3 view drawing , subjects with a decent amount of dihedral also a bit of sweepback if possible, and for rubber a long nose too. He looked for sensible proportions or proportions where he could have a chance of a flyable model. For twins it was always a matter of finding a new subject that had nacelles a little bit further away from the fuselage than normal. Normally they were so close that the subject could not be done as a rubber model. His King Air was one of the models that he had been most pleased with. No one had done that for rubber and whilst the wing had looked a bit small, the nacelles were long and just far enough away from the fuselage, providing the model was made big enough.
He had a preference to do different models, but the basic proportions had to be right. Putting dihedral on a SPAD for example just looked wrong and whilst there was always the need to tweak designs for free flight, there was a limit beyond which one could not go or they would start looking silly, he suggested.

Mike described several new projects. His Miles Aerovan was definitely a go and Richard Crossley had generously given him all of his reference material and all of the thoughts he had had on how to make it work. Mike was also doing a Curtiss SOC Seagull for his next open indoor rubber scale model. A Consolidated Fleetster was under way for outdoor scale, the Fox Moth being only suitable for a very calm day. The Fleetster was being much more robustly built to cope with an English summer's day. Peanut-wise his next project was going to be a Blackburn Dart, because the Rippon he had already built had flown so well.

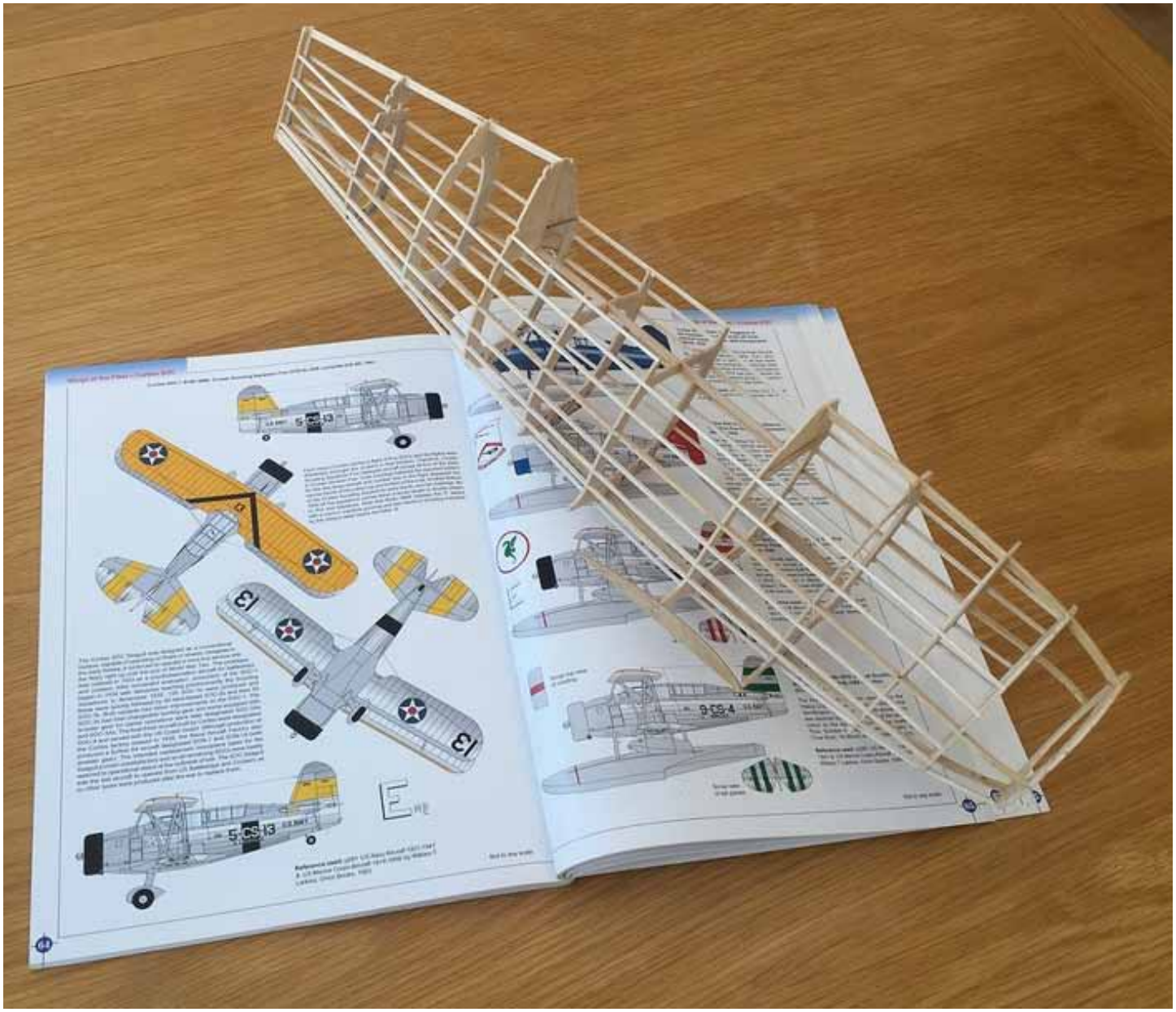
Mike's Flying scale website is a treasure trove of his beautifully made models and contains flying reports and 'how to' information as well. It is well worth a visit for scale modellers - Ed.

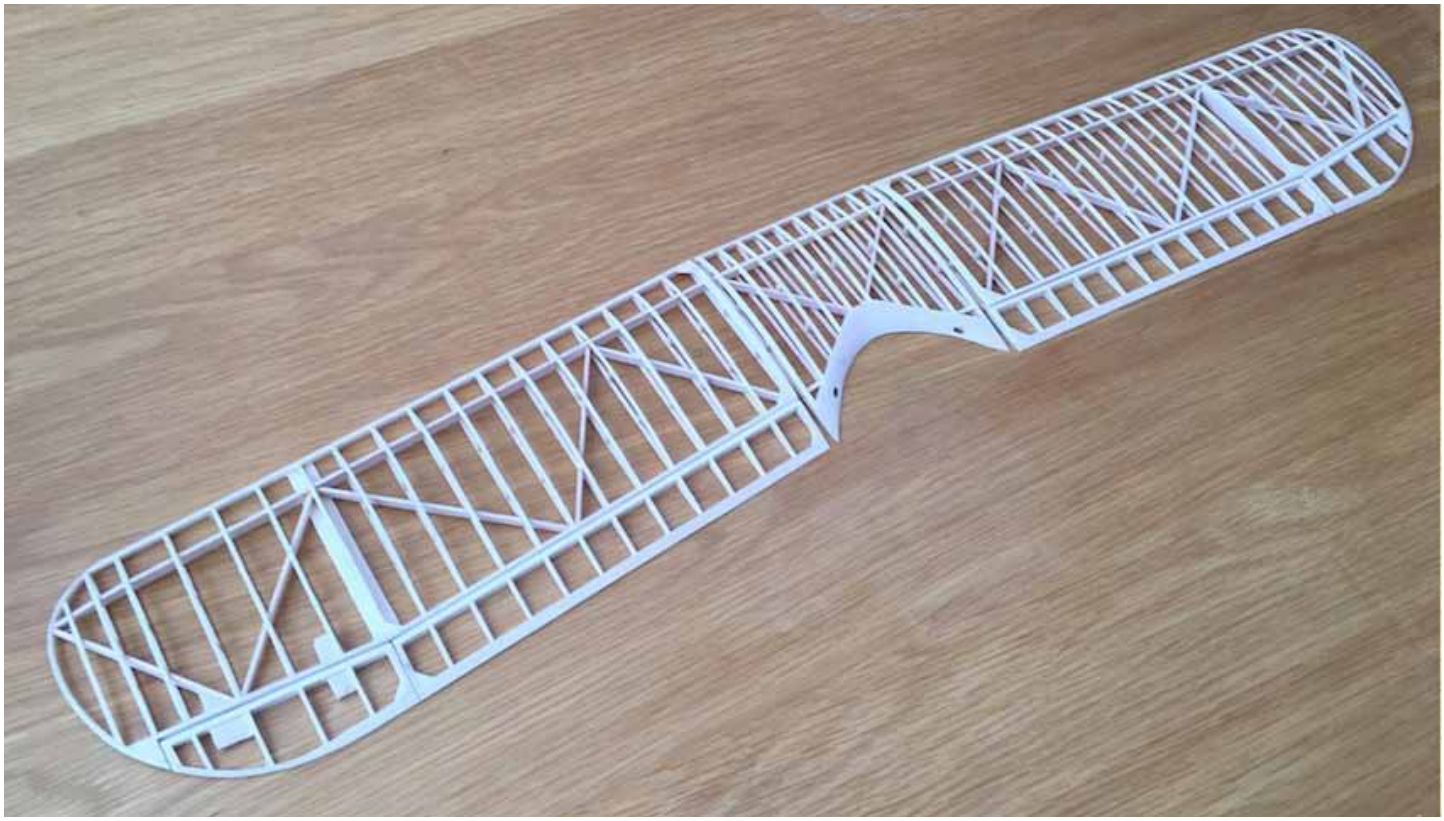


ABOVE: Mike's Consolidated Fleetster at 24" and 37" spans for indoor and outdoor events.

RIGHT: His 29" span Curtiss Seagull showing very light fuselage and wing construction.

See more information on both of these projects on Mike's website: http://www.ffscale.co.uk





Daniel Walker Mr Mulligan

The Mr Mulligan was built from the Sig kit which I was presented with as the junior prize from my second Nationals. It had to be posted to me after the event and the accompanying letter is dated February 1992. It goes without saying that it has been a long time in the making!

The first challenge was that the kit had literally been folded in the post. This had damaged a number of the balsa components and made most of the strip stock too short. A shame as the wood supplied is really good. Not a major really and it was easily fixed with replacement stock. A couple of years probably passed before construction began and I do remember starting it at my previous residence. We have been at our 'new' one 18 years!

In fact I had not touched it in all that time. I had it as far as the basic fuselage structure before languishing on the 'shelf of doom'. There have been marriage, family, career and obviously more important aero modelling projects in between and I finally have it back on the bench. The reason it fell out of favour was due to details such as the bump cowl, spats, struts etc. I find these things fiddly and time consuming and I need to get myself in the right mindset to tackle them. I actually built the cowl last year in an inspired burst when there was a hint of getting to the Nationals again. Unfortunately that finished when it became clear I was going to miss that event. Further hesitation occurred with the thought of converting to CO2, inspired by memories of Alan Lawrence's fine example back in the 90s. My lack of experience with such hardware convinced me to stay rubber powered.

Then along came lock down. Like most of us I am guessing I saw this time as made for aeromodellers and started to get a little ahead of myself with all the projects I could do in this enforced time at home. In fact I did get a few things finished that had been hanging around too long and while very tempted to start something new I demonstrated incredible restraint (I think) and opted to continue with unfinished projects. After all, I must have started them for a reason.

The picture was taken just after the spats and undercarriage were installed and also shows the pesky cowl detail. Two of the main stumbling blocks of the project done. Partially obscured by the fuselage is the covered wing. I might yet build the contest prop in the instructions but will try the plastic prop first.

ABOVE: The view before painting showing the main stumbling blocks, the wheel spats and pesky cowl detail.

OPPOSITE: The model was built from the classic SIG kit.


NEW ZEALAND
40
Kit No. FF-23
Mr. Mul


Mr. MULLIGAN
40
F1 F2B
F3
F4
LANDING GEAR FILLET
STRINGERS

Mike Mulholland's
Westland Lysander

I fell in love with Lysanders after my little Keil Kraft Lizzie proved to be such a great flier. It started life as the Howard Boys 1/12 plan but due to a number of problems with that plan both in terms of scale accuracy and simple draughting errors I abandoned it at an early stage and settled on the Aeromodeller 3-views blown up to 1/12.

The 18 month project has been a voyage of discovery and invention as I have engineered my way through various challenges to cope with the practicalities of a 50" span rubber powered free flight model and achieve the degree of realism I was seeking. From the outset it was intended that this model would accompany me to Richmond NSW, which also meant that pretty much everything would have to be demountable for transport. Wings, wheel pants and tailplane halves all come off.

In general the structure of the model closely follows the full-sized aircraft. One of the die-in-a ditch issues for me was that I would use the scale internal cabane structure to mount the wings rather than the half former structure that is generally employed on model Lysanders even up to the big ¼ scale Seagull ARFs. The wing bands are stretched back into channels set in the underside of the wings and then covered by .010" sliding panels so the bands cannot be seen under the canopy.

Various aspects of the build have taxed my carving and vac-forming skills - notably the cowling, canopy and wheel pants. The wheel pants are mounted on rigid 2.8mm square carbon shafts and slide off as a unit. They also incorporate an internal springing mechanism. The mouldings incorporate a number of complex angles and carving the left and right -handed blocks was a project in itself.

A chance I am taking is the rather small tailplane so it was essential that I be able to adjust it. The two halves join in the middle of the fuselage via a screw-adjustable incidence regulator.

The model (since fully covered) is covered in lightweight tissue sprayed with automotive clear lacquer and sanded with 1500 grit wet and dry before finishing with Tamiya semi-gloss black acrylic. AUW once completed is likely to be around 170g.

ABOVE: Wing details showing lightweight covering, and tape and stitching simulation.

OPPOSITE: A view of the wing showing finishing with Tamiya semi-gloss black acrylic.

LEFT: The tailwheel assembly detail.

Richard Fallas's Building board

Sopwith Triplane

My Sopwith Triplane is made from the Gordon Whitehead Aeromodeller plan (see Outerzone). I first made one of these back in the late 70s or so, for free flight with a Cox Tee Dee 020 in it. It was hilarious at the UK Nats free flight scramble doing low level circles and just missing spectators. The idea of an electric RC version came to mind a year or so back and you can see the result. This has flown on several occasions with interesting results. The small brushless motor is too powerful so throttling back is needed. Also rudder command is not always smooth. It is on the bench at present (along with too many other projects) and I intend to use a single aileron on one lower wing for roll control and deactivate the rudder. Amazing what small LiPos, brushless outrunner, micro receiver and 9g servos can do for old traditional free flight designs.

Sea Fury

Some work in progress. A West Wings Sea Fury for rubber power is awaiting recovering, although I have been wondering about micro radio and electric power for that. Alongside that is a Hunter kit with a KP 32mm ducted fan, probably for free flight with timer controlled power. The parts have been cut out for a while though. I am besotted with Triplanes. There is another laser cut kit 36 inch version for electric and RC waiting for the right time to build it.

The photo is of my Mills 075 replica. I have made quite a number of model engines now, to my own design, as replicas and following other people's plans. The Mills was the second attempt to get a replica going and this one works very well. It flew in a Tomboy at the Matamata Nats Aggie event in 2019, but it was a flyaway. I was lucky to find it in the twilight in a big potato field along with another modeller's plane. Other engines I have made include a 1.3cc Mills, 3 or 4 Mark Lubbock 0.8cc Midges, a tiny 0.1cc Nano diesel and a 9cc glowplug 4 stroke V twin called a Vega.

My Sopwith Pup is based on a Flair Pupeteer kit from the 80s. It came with me in 1995 from the UK in some disrepair and has always been a twinkle in my eye for a rebuild. At 60 inch span it is not huge but has a lot of volume and great presence in the air. It is powered by a long cherished but not much used OS FS60 with exposed valve gear. The long overdue rebuild was achieved in lockdown and the new markings are based on those of the Pup replica hanging up at the RNZAF museum at Wigram. The maiden test flight was uneventful and the engine proved surprisingly powerful. I need to check the fuel system though as later flights ended in dead stick landings so this is not ideal. I use 14 x 4 props that I have made in my workshop. I have worked through several methods and jigs of producing props and its very satisfying when you get it right. The photo is of the latest batch of 14 x 4s awaiting finish. The background to the props is another interest as from time to time I make guitars – electric as here and also acoustic. The laminated prop on the Mills is also one of mine.

Don Spray's Crosby Racer

My Covid-19 lockdown period turned out to be a great time for building. First up was a challenge from George Fay to build another racer and, with a Crosby CR4 3view from a magazine suitably enlarged, it was under way without further ado. The wingspan is 25" and overall length 31". I have made some enlargement of the tail area. It currently weighs 175g without rubber. The motor will be eight to ten strands of 3/16" rubber, but this is yet to be established. The racer has been pleasant to build.

The model is in need of further trimming. Indications are that it may need some right thrust and possibly downthrust adjustment. Despite having less wing area than average, the model is not a particularly fast flyer. It is however, hard to get it to turn without losing trim. I am also fining down the propellor to reduce pitch.

Restoring the Chrislea Super Ace

Mike Stoodley

When refurbishing Jack Godfrey's Chrislea Super Ace I found that the bolt holding the prop in place on the KP02 was bent beyond repair - hardly surprising as it is just a very small diameter threaded rod, and there is no impact absorption anywhere. The way a KP02 works is there is a big circular gear wheel with teeth on the inside, driven by the much smaller pinion on the motor shaft. The bigger gear spins freely on a shaft to which the prop attaches.

Rather than just finding another small bolt to replace the bent one, which would most likely end up bent again, I decided to replace the prop attachment with one of those small "prop saver" devices used by small RC park flyers. These are small standard size fittings that can take many different props. They simply fit on and are held there by rubber bands around the two screws that clamp the prop saver to the shaft. So this lets us try different props, with the bonus that in heavy landings the prop simply moves on the rubber bands, or maybe pops off, without damaging the shaft.

The only other thing to deal with was actually turning the prop, because previously it was bolted to the larger gear. To do this I added a small bolt through the gear to engage the prop, much as is done on rubber models.

The propeller shown may be a poor choice for a KP02, it is just what I had handy. There are plenty of options from the world of slow flying RC that may be better suited.

Peter Williams
Kit Scale VMC Cessna

Ricky Bould had a kit available at the Nationals along with a winder and counter and so I was ready to go. The VMC kit built out really quickly and easily, aided by the YouTube video. I don't think I had a set of instructions but downloaded these from the Vintage Model Kits website.

The wood was great and the fit of the parts was fantastic.
My experience of building kit models as a younger man was of poorly fitting parts and lots of work but this thing was the opposite.

Anyway a big thanks to Ricky who had some kits available and I'm pleased I did build it, very satisfying.

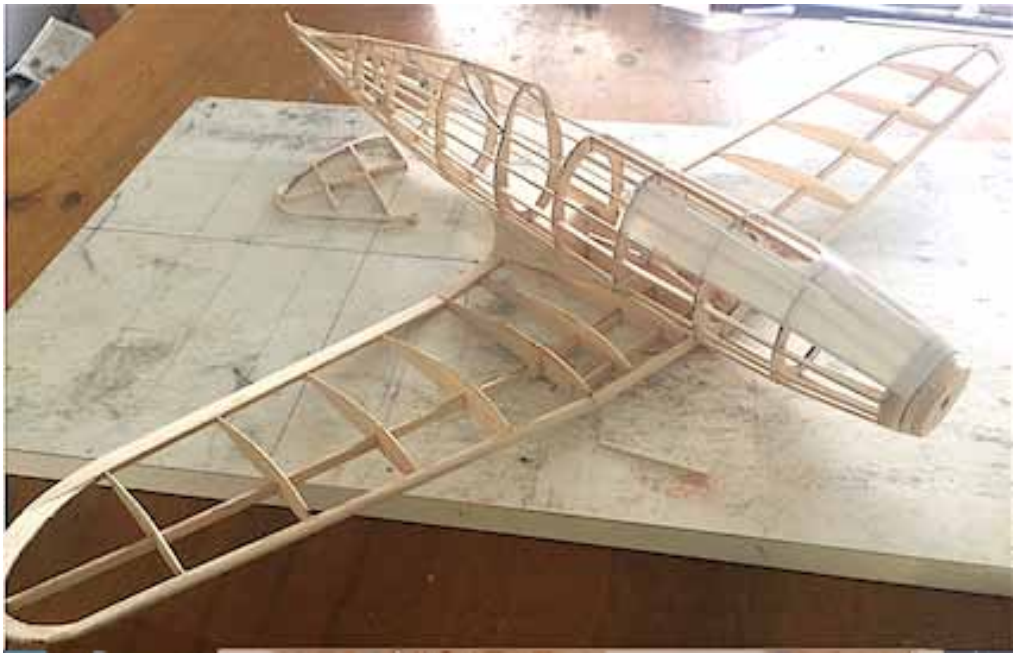
I used the supplied red tissue and the printed sheet to cut the lettering from. The wheels were easily glued together and shaped by spinning them on a Dremel, and then painted. I used Eze Dope for the covering and used a glue stick to attach the covering just like the YouTube video.

The total weight without rubber is 21.4g. It has not yet flown but this needs to happen soon, because there are bragging rights at stake in the soaring community.

Steve & Daniel Warner
Kit Scale MiG 3
Cessna Bird Dog

It was over Covid-19 time that I realised what a fantastic hobby we enjoy - just because you can't go out and fly really just means more building. When the Bird Dog was ready for covering (as was the MiG) we had a decision to make about colour scheme. Daniel decided that he would like to do the US Army high visibility Arctic scheme but needed to decide how to achieve it on a kit scale model. Cover the complete model in white, shrink it then add the red with glue stick or do all the white bits seal then add the red?

We used Eze Dope on Daniel's Bird Dog 5% to 95 % water in an atomiser which has worked well but not really moisture proofed the tissue. I see a brushed on 30% 70% coat is recommended. I assume this does the sealing.



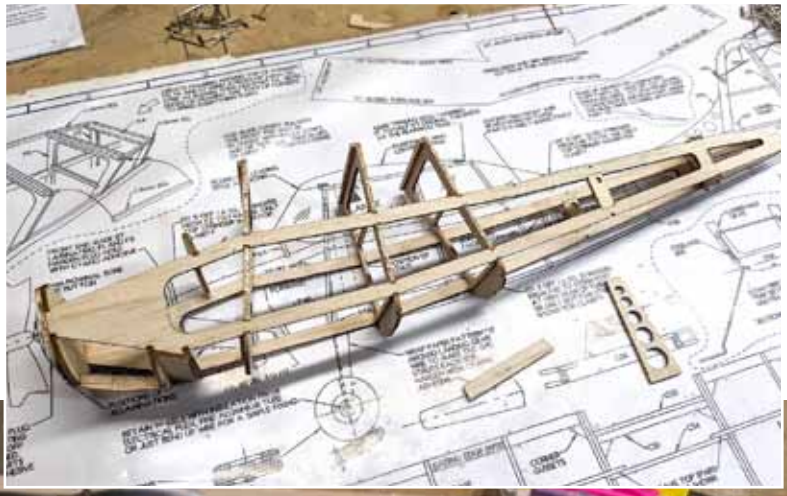
LEFT: The selected US Army Arctic High Visibly colour Scheme used on the Bird Dog.

LOWER: Daniel with the model ready for some testing!

Pete Glassey's
Cessna Bird Dog

The VMC Bird Dog went together very well even though it was the first stick & tissue model that I have built. It did involve more work than anticipated. I was impressed with the quality of the kit.

The photos show construction and on to covering. stage. I settled on the olive tissue colour scheme using the tissue in the kit. Covering was straightforward. Photos below show water shrinking and that worked well. The model has progressed since these photos and is now ready for some testing. Hope to fly it in indoor kit scale.



Nationals programme 2021
Free flight & Control line scale

January 3		**Registration** 12.00 noon - 6pm_	
January 4	Day 1	Power Scale	RC1 with RC fliers 6.30 – 9.00am
		Kit Scale	RC1 with RC fliers 6.30 – 9.00am
January 5	Day 2	Rubber Scale	Free flight field 6.30 – 8.30am
		CO2 &Electric Scale	Free flight field 6.30 – 8.30am
		F4B CL Scale	Hard Circle 9.30am - 12.30pm
January 6	Day 3	Control line Sport scale	Grass Circle 9.30am - 12.30pm
		Indoor events	Hall - Static judging from 7.00pm Flying from 7.30 - 10.30pm
		Peanut Scale, Kit Scale, Open Rubber Scale	

F4A Power Scale Team Trials at the Nationals, for next year's Trans Tasman.

The New Zealand Team to contest the Hope-Cross Trophy for F4A Power Scale class at Richmond, NSW in July 2021 will be selected from the highest scoring entries in this class at the 2021 Nationals at Carterton. If there are insufficient competitors available from Nationals F4A placings, the Free Flight & Control Line Scale SIG will co-opt other free flight power scale flyers deemed to be suitable to fill these places.

Scale free Flight & Control Line
Classes at the Carterton 2021 Nationals

Sport Control-line scale
A no documentation class open to any control line model of scale or semi-scale design including semi-scale aerobatic models, profile scale models or full fuselage more realistic designs (see next page).

F4B Control-line scale
Flown to FAI F4B rules. Models are judged for static and flying points. Documentation is required (see next page).

F4A Outdoor Free flight Power Scale
Free flight Power Scale is flown to FAI F4A rules. Power can be either i.c. engine or larger than low power class electric (refer to rules for motor power limits on our link on the MFNZ website or contact us). Models reflecting varying levels of experience and expertise are typically entered so if you are interested in this class and have a free flight scale model to fly, join us.

Outdoor Low power scale
This includes CO2, small electric, and Jetex. It is flown to FAI F4E rules. The class was created to allow low powered free flight scale models to be flown with other models of similar size and power source.

Outdoor Rubber scale
This is flown to FAI F4D rules, with no flying mark for landing. Like other FAI F4 classes, emphasis is on flight quality rather than flight duration.

Outdoor Kit Scale
This is flown to the SIG rules available under rules on our link on the MFNZ website. The objective is to encourage simple stick and tissue models 'built to the kit plan' rather than the elaborate highly decorated and finished models of other scale classes.

Indoor Peanut Scale
Flown to FAI F4F rules, it has a totally different scoring system from F4 rules. Knowing the static scoring criteria assists in doing well in static. Unlike other scale classes, flying and static scores are ranked to find placings.

Indoor Rubber scale
Indoor rubber scale is flown to same F4D rules as outdoor free flight scale rubber but includes a flying mark for landing as good landings are much easier on a hall floor! Of all of the scale classes this (along with low power scale) could do with more support at contests.

Indoor Kit Scale
This event uses the same scoring as outdoor kit scale as above.

Memorial Flight
This is an unofficial class being trialled for the first time at this year's Nationals. It was introduced in Scale News 2. Hopefully it will be well supported and bring out many of the gifted or inherited scale models many of us have in our care. It may be flown during Day 1 or Day 2 events at those venues.

Control Line Scale Classes at the 2021 Nationals

Background

As many long-time control line scale flyers will recall, the FFCL Scale SIG used to offer F4B control line Scale and Control line Profile Scale at Nationals. In more recent years control line scale became one event in which any control line scale models could be flown, even semi-scale stunters. No documentation was required or scored. This was instrumental in bringing back support to control line scale. At the last Carterton Nationals several flyers requested the return of the F4B control line scale event as well as the no-documentation class offered at that Nationals.

Control Line classes at the 2021 Nationals

Building on the interest in having both Non-documentation control line scale and F4B Control line scale, both of these classes are in the programme for the next Nationals.

The Classes

The no-documentation event flown at the last few Nationals has been re-named Sport Control line Scale to distinguish it from F4B or from the limitations of Profile Scale.

Sport Control Line Scale

- This class is open to any control line model of scale or semi-scale design including semi-scale aerobatic models, profile scale models or full fuselage more realistic designs
- No documentation is required. There is no static judging.
- Models are judged on flying only using the flying judging of F4B rules.

F4B Control Line Scale

- This class is open to any control line model of scale design. The F4B rules are used for judging static and flying aspects of the score.
- Documentation is required for static judging.
- Models are judged on both static and flying using the FAI F4B rules.

NOTE:

1. If you have no documentation for F4B, The Free Flight & Control Line Scale SIG committee have amongst them a huge documentation resource and should be able to help you out.
2. For F4B refer to SIG'S link https://www.modelflyingnz.org/sigs/ff_cl_scale.html then scroll down to get a copy of the FAI rules, under Rules.

ABOVE: This Chance Vought Kingfisher has scale details and proportions making it suitable for F4B competition.

LOWER This semi-scale P-40 has a stunt wing and enlarged flying surfaces. It is a suitable model for Sport Control line Scale.

Memorial Flight
at the 2021 Nationals

Background

The recently introduced Memorial Flight class is missing from this year's Nationals programme. This is because it is a provisional class only. It will, however be possible to fly these models in this unofficial class on both Day One at RC1 and Day 2 on the Free Flight field. Placings will not count towards Nationals Championship place totals because the class is provisional and not official. If it is sufficiently supported at the Nationals it will subsequently progress to being considered as an official class. The concept of the class was raised a few years back and it was to be flown as an unofficial class at the last Nationals but only one flyer flew it. This is not to say that the class cannot gain momentum.

The Class

This new provisional event is to allow flyers to fly models constructed by other modellers now no longer with us or able to complete them. The comment has been made over and over again, "could we have a class to fly them in?"
The Free Flight & Control Line SIG have responded to this request and put together a set of provisional rules. Importantly, your support is needed to get this class under way and without this participation, the initiative will be lost and the class may well die. Please come and fly the class at the Nationals if you have any model built by another modeller that would fit this class.

BELOW: This nice Zaunkonig built by Brian Crocker in the 1990s is an ideal model to be flown again in the new Memorial Flight class at the Nationals.

The class is for flying only. The usual requirement for the model to be built by whom ever enters it is therefore not required in this scale class. It is hoped that many interesting or even yet to be completed models built by others may be brought out to be flown once again.

Memorial Flight Provisional Rules

1. Models must be built by someone else no longer able to fly them
2. The 'Builder of the model' rule does not apply.
3. There will be no static judging.
4. Models may be engine, electric, rubber or CO2 powered.
5. Flying is based on Kit Scale flying rules with some adjustments to K factors as below.

They are as follows:

Take-off (optional),	Up to 20 points
Initial climb,	Up to 20 points
Descent and landing approach	Up to 20 points
Realism in fight (speed, 'sit', stability and character).	Up to 40 points

Contact Stan Mauger, FF & CL SIG Chairman for further information
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