



ScaleNews

May 2023
Issue 9

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



In this issue

Contest notice

- **Morrinsville**
2023 Indoor
competition day
- **Free Flight Rubber Scale**
Park flying
- **NZ Nationals 2023**
Report on all scale classes
- **Scale subjects**
Piper Super Cub
- **Model projects**
Piper Super Cub
Piper Super Cruiser

Junkers Ju87 Stuka
Frog Control Line SE5a
Veron Control Line Fw 190

- **Australian News**
Control Line Model projects-
NA B-25 Mitchell
Pitts Special
Westland Whirlwind
- **Peanut Scale**
Nieuport 11
Evans VP1 Volksplane
Albatros D.III
- **ScaleProject**
Hawker Hart

Free flight indoor contest day Indoor Scale at Morrinsville

Sunday October 8, 2023

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

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



MORRINSVILLE NOSTALGIA

Mike Mulholland brought this Bevy of indoor scale models to fly at the 2018 Morrinsville Day.
Models are (front to back) Avetek Airtrainer, and Tiger Moth, Sommer Monoplane and Piper Cub.

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

Editorial

Scale News came into being back in 2019 because of a perceived need to communicate better with those with an interest in free flight and control line scale, at whatever level, across the country. Scale News has elicited some encouraging feedback and alerted me as editor, to scale activity that might have otherwise gone unnoticed, but I had had hopes of more material for publication than has been received over the years since 2019. Turning to this issue, the contributions of local building stories and those from Australia, are greatly appreciated. Please keep sending these, plus reports on other scale activity in your part of the country. Apart from news of new builds, I plan a new section entitled 'On the table', to show scale models that have graced the club meeting tables across the country. If you have brought scale models to your local club meetings and had them photographed, please send me a jpg(s) for inclusion in Scale News. These are all requests for your assistance, but what can the Free Flight & Control Line Scale SIG do for you?

The SIG has worked at keeping scale classes alive, via ongoing activity over thirty years. Up until the recent disruption caused by the Covid pandemic, we have met monthly. Ongoing business has centred around Nationals, Morrinsville days and other local contest organization and the formulation of rules. With a small committee, we have been kept busy confirming Nationals programme needs, keeping track of trophies, communicating with flyers who support the events and finding judges. Morrinsville is now well established and calls for less time commitment to make it happen. Your SIG has a long history in developing contest rules. F4A Power Scale rules were largely an outcome of the efforts of the SIG in the early 1990s and more recently, in updating the international F4 FAI scale rules.

Finally, my thanks to all who have contributed to this issue. If you enjoyed it or if you have any suggestions for improving it, please let me know.

STAN MAUGER

Free Flight & Control Line Scale
Special Interest Group
of Model Flying New Zealand

Committee

Stan Mauger (Chairman)
Ricky Bould (Secretary)
Brian Howell (Treasurer)
Paul Evans

Area Representatives

Wellington

Antony Koerbin
Chris Murphy

South Island

John Dowling

Editor and Newsletter Publisher

Stan Mauger
96A St Heliers Bay Road
St Heliers
Auckland 1071
New Zealand
Phone +64 9 575 7971
Email stanm09c4@gmail.com

The opinions expressed in this newsletter are not necessarily those of the editor or the Free Flight & Control Line Scale SIG or of Model Flying New Zealand.

Photos are by authors unless otherwise credited

COVER PHOTOGRAPH

Daniel Walker displaying the underside of his amazing Guillows B-17 Control line scale model at the 2023 Nationals. More about this model can be found in the report on Control Line Scale on Page 10.
Photo: Stan Mauger



FREE FLIGHT SCALE ON THE TABLE

Martin Evans's Recently completed Easy Built Fairchild PT-19 seen on the table at the Auckland Model Aero Club's last monthly meeting, where the theme was Scale Models. Photo: Brian Howell

Free Flight Rubber scale **Park flying**

The photos of George Fay's rubber scale twins are from a day of park flying earlier in the year. The PE2s are proven flyers. The version in Russian colours is the better flyer of the two and on the day, it flew out of the park. The other larger model is dependent on some breeze to fly well, but was also flown. George puts on about 700 turns and gets about 25 second flights on average from his twins. His B-25 NA Mitchell was not flown on the day. George has had great success with these over the years, having built three. This model is the second in the line and was first flown most successfully at Patetonga on the year that the Trans Tasman Challenge for free flight scale was held there.

He uses contra rotating propellers and has found this set up to assist the trimming stage.

Don Spray's Grumman Tigercat and McDonnell XP-67 Moonbat rubber Scale Twins opposite were flown at Karaka. Both have been tested and flown successfully and are great to watch. Like George, Don uses contra rotating propellers, which he feels overcomes some of the trimming problems associated with setting up twins properly.

STAN MAUGER



UPPER: George Fay's recently rebuilt NA Mitchell not flown on the day. ABOVE LEFT: His PE2 in Russian livery, the better flyer of the two PE2s. ABOVE RIGHT: The Polish version about to take advantage of some light breeze. Photos: Glenn Crouch



TOP: Don Spray's Moonbat and Tigercat at rest between flights. CENTRE: His Moonbat off on a great flight. George Fay looking on. ABOVE: Also a proven flyer, Don's Tigercat looks great as it makes some circuits of the field. Photos: Brendon Neilson

NZ Nationals

Free flight scale gave every indication of being well supported in this, the seventy fifth New Zealand Nationals. Besides indicating the levels of entries in respective events, MFNZ website's live totals undoubtedly helped to create interest in entering events. By the stage that it was time to depart for the Nationals, every class had the requisite three or more entries to make it official, but more than this, there were some surprises. Early on, F4B control line scale, a class that had not been run for years suddenly found itself with five entries. However, by the eve of the Nationals, some scale flyers were unable to attend or decided not to fly in entered events, dimming down the apparent strong support seen earlier. It must surely be a sign of the times, but in outdoor events, Kit scale continues to attract strong support and is seen to be simple to build for or to fly in, whilst

traditional classes requiring more detailed models continue to suffer low entry levels. It is often regarded as tedious to refer to the impact of weather conditions in model flying reports, but weather did have an impact on flying at these Nationals, as is expressed in the event reports that follow. A great deal of work went on behind the scenes to have the static and flying judging expertise of Gwyn Avenell, Ricky Bould, Lloyd Dickens, John Dowling, Paul Evans, Neil Schrader and Alina Wimmer. It is always hard to get good photographs of model whilst flying in events, so it was a huge help to have photographs taken by Lloyd Dickens and Barry Price for this report.

STAN MAUGER

Outdoor events

Day 1

The early start time enabled flyers to take advantage of the calm conditions on Day One when Outdoor Kit Scale and F4A Free Flight Scale were flown. With great static marks and an excellent flying score Mike Mulholland's Keil Kraft Westland Lysander was a well deserved winner in Outdoor Kit Scale. He put in some very stable flights with this model. Also offering some nice stable flights were Ricky Bould's Veron Luscombe Sedan and Stan Mauger's Keil Kraft Cessna, with only a point or so between them.

Power Scale attracted only three entries. Stan Mauger's Vickers Vildebeest flew nicely within the space of the field to win the event.

RESULTS

FAI F4A Power Scale

	Subject	Static	Flying	Total	
1.	S. Mauger	Vickers Vildebeest	796	399.5	1195.5
2.	R. Bould	Auster AOP9	746.5		746.5
3.	P. Evans	Henderson Longster	290.5		290.5

Outdoor Kit Scale

1.	M. Mulholland	KK Westland Lysander		102
2.	R. Bould	Veron Luscombe Sedan		93
3.	S. Mauger	KK Cessna		92
4.	D. Walker	SIG Mr Mulligan		89
5.	G. Lovejoy	Comet Taylorcraft		65
6.	P. Evans	Easy Built Fairchild PT19		30



ABOVE LEFT: Paul Evans warming up his Henderson Longster for Power Scale. ABOVE RIGHT: Daniel Walker with his CO2 powered Mr Mulligan built from the SIG kit and flown in Kit Scale. Photos: Lloyd Dickens



TOP: Yolande Mulholland assisting Mike to wind his Keil Kraft Lysander in Kit Scale.

ABOVE LEFT: Now a seasoned flyer, Graham Lovejoy's small Taylorcraft floatplane handled the outdoor conditions well.

ABOVE RIGHT: Paul Evans entered his newly completed Easy Built Fairchild PT-19 in Kit Scale.

Photos: Lloyd Dickens

Outdoor events

Day 2

The day started with a gentle breeze but this soon built creating challenging conditions for models in the two classes flown. Like power Scale, Open Rubber Scale just made the requisite three entries, but Ricky Bould was challenged in getting his newly completed Ol' Ironsides to fly. Whilst Mike Mulholland wisely thought better of flying his Borel Monoplane in the mid part of the morning

when the wind had come up. Stan Mauger had got in flights with his perennial Helio Courier early, so eventually got some good flights. He also had success in Memorial Scale with his Stinson Voyager, just eclipsing Des Richards whose Blackburn Skua once again flew well.

Open Rubber Scale

	Subject	Static	Flying	Total
1. S. Mauger	Helio Courier	748	454.5	1202.5
2. R. Bould	O'l Ironsides	100		100
3. M. Mulholland	Borel monoplane			0

Memorial Scale

	Subject	Builder		
1. S. Mauger	Stinson Voyager	J. Godfrey	36	36
2. D. Richards	Blackburn Skua	I. Treen	33	33
- P. Evans	Zaunkonig	B. Crocker		0
- R. Bould	Waco YOC	J. Godfrey		0
- W. Lightfoot	Curtiss Robin	B. Crocker		0



UPPER LEFT: Stan Mauger flew his Stahl Stinson Voyager.
 FAR LEFT: Mike Mulholland with his finely detailed Borel Monoplane entered in Rubber Scale.
 ABOVE: Des Richards had great flights from his Blackburn Skua in Memorial Scale.
 LEFT: Ricky Bould was challenged with his newly built Ol' Ironsides in Open Rubber Scale.
 Photos: Lloyd Dickens

Indoor events

Day 3

Experienced indoor flyers at the Nationals have come to know that the hall used for indoor events is narrower than many other halls used locally at club level and that models need to be well trimmed.

In Peanut Scale, Paul Squires had put in time to trim his recently built model and was rewarded with a win in this event. With the ranking system for placings in this event Ricky Bould's Fike and Daniel Walker's Lacey were tied and the best flight score was used as a tie-breaker.

Ricky Bould was the clear winner in Kit Scale but all remaining flyers were relatively closely grouped. In Open Rubber, Graham Lovejoy scored well in both flying and static, with Ricky Bould also scoring well. Stan Mauger needed an ROG to join the group.

RESULTS

Peanut Scale		Subject	Static	Flying	Ranking
1.	P. Squires	Lacey	53	118	2
2.	R. Bould	Fike	46.5	115	5
3.	D. Walker	Lacey	47.5	67	5
4.	S. Mauger	CW Cub	41	0	8

Indoor kit scale				Total
1.	R. Bould	Comper Swift		124
2.	D. Walker	Auster Auto		111
3.	S. Mauger	Auster Arrow		102
4.	N. Walker	Howard DGA8		101
5.	G. Lovejoy	Taylorcraft		99

Indoor Open Rubber Scale					
1.	G. Lovejoy	Stahlwerk	817.5	458	1275.5
2.	S. Mauger	Fleet Canuck	748	454.5	1202.5
3.	R. Bould	Comper Swift	613	480	1093



TOP LEFT: Stan Mauger flew his regularly flown Fleet Canuck again in Indoor Rubber Scale.

UPPER LEFT: Ricky Bould's Comper Swift was first in Indoor Kit Scale.
ABOVE: Paul Squires topped Peanut Scale with his new Lacey.

TOP RIGHT: Graham Lovejoy had some great flights from his Stahlwerk in Open Rubber Scale to win the event.

ABOVE: Nathan Walker's Howard DGA8 put in some stable flights in Kit Scale.

Photos: Lloyd Dickens

Control line Scale

Day 3

By the time that control line scale events got under way the wind had come up making flying difficult.

Otto and Max Wimmer handled their Control Line Sport Scale models well flown in these conditions. They are both experienced control line flyers and seemed at home with the windy conditions. Elsewhere in this event, Adrian Hamilton once again flew his selected manoeuvres well, but David Thornley's extra control system gave him extra points to lead again.

Richard Fallas made a courageous flight attempt with his APS Douglas DC3, powered by a pair of rebuilt Taipan 1.5cc



diesels. This was a first flight with an unknown model but the conditions made control difficult, resulting in some sustained damage to the model. Daniel Walker and Stan Mauger thought better of battling conditions with their models in F4B Control Line Scale, leaving David Thornley an easy but well deserved first place. Daniel entertained us with a Cox symphony, getting all four engines to run at the same time.

Control Line Sport Scale models awaiting flying

TOP: Adrian Hamilton's NA Mustang, ABOVE: (from left) Otto Wimmer's Douglas Skraider, Gerald Wimmer's Fairey Firefly and Max Wimmer's Hawker Hurricane,.

INSET: Nathan Walker's Grumman Wildcat

RESULTS

F4B CL Scale

1. D. Thornley
2. D. Walker
3. S. Mauger

Subject

Fairchild PT-26
Boeing B-17
Vought OS2U

Static
725
874
728.5

Flying
934

Total
1659
874
728.5

Sport CL Scale

1. D. Thornley
2. A. Hamilton
3. O. Wimmer
4. M. Wimmer
5. R. Fallas
6. G. Wimmer
7. N. Walker

PT-26
NA Mustang
Skyraider
Hawker Hurricane
Douglas DC-3
Fairey Firefly Mk1
Grumman Wildcat

934
810
790
748
644
488
306

934
810
790
748
644
488
306



TOP: The first flight of the control line scale DC3 brought by Richard Fallas created great interest from both flyers and spectators.

CENTRE: Also creating great interest was Daniel Walker's B-17 built from a Guillows kit. It is seen here before full engine run-up but was not flown because of the windy conditions. It has since flown. Go to You Tube and enter Guillows Control line B17 Build.

ABOVE LEFT: At 24" Span Stan Mauger's Vought Kingfisher F4B Control Line Scale entry was not flown because of windy conditions this year, although it had been flown in other Nationals F4B events. ABOVE RIGHT: DC3 engines being warmed up by Richard Fallas. Paul Evans is assisting. Photos: Stan Mauger

Piper Super Cub

Walk around

Dozens of Piper Super Cubs were imported into New Zealand in the period between the early nineteen fifties and late nineteen sixties. The design of this aircraft owes much to the original J3 Piper Cub. In 1947 Piper introduced a development of the basic J3 design that included various refinements including an horizontally opposed engine and it became the PA-11 Cub Special. In many ways, it looked like the later PA-18 Super Cub that followed in 1949.

Both the PA-18 and PA-18A models were imported, but a review of aircraft registrations of the period (Rendel, 1975) show that the PA-18A was brought into the country in greatest numbers. This is not surprising as the Model 18A was suitable for agricultural work, but these aircraft suffered noticeable attrition with at least thirty aircraft lost in agriculturally related accidents over the two decades. Nevertheless Super Cubs are still easy to find, and some like the aircraft featured have been restored to a very high standard. Some have been modified with tundra tyres or other modifications that detract from the classic Super Cub that may be the preferred version for serious scale modellers.

The Super Cub has much to recommend it as a scale subject. Semi-scale Piper Cub designs have done much to discredit the Cub as a scale subject. Even without many of the flying aids like simplified fuselage cross-sections and outlines in these designs, the subject can make a great free flight scale

choice. The full-size aircraft even has an aerofoil with a very slight amount of undercamber.

Three views of the Super Cub by AAP Lloyd were published in the April 1984 issue of *Aeromodeller*. These would be a good reference for designing a model. *Modelair* magazine also produced some suitable drawings and these can be found via the AeroFred website.

The photographs of ZK-BQY taken at an Ardmore Open Day some years back are just some from a walk around. As always, I have many more if you are interested in Super Cub reference, so let me know if I can help.

STAN MAUGER

References

- Eyre, D. (1973). *Illustrated encyclopedia of aircraft in Australia & New Zealand*. Milsons Point, Australia: HEL Productions
- Martyn, E. (2020, Dec 21). *Agricultural Super Cubs*. rnzaf.proboards.com
<https://rnzaf.proboards.com/thread/12315/topdressing-super-cubs?page=11>.
- Rendel, D. (1975). *Civil Aviation in New Zealand - An illustrated history*, Wellington. Wellington NZ: AH & AW Reed





Piper Super Cub - Free Flight Scale

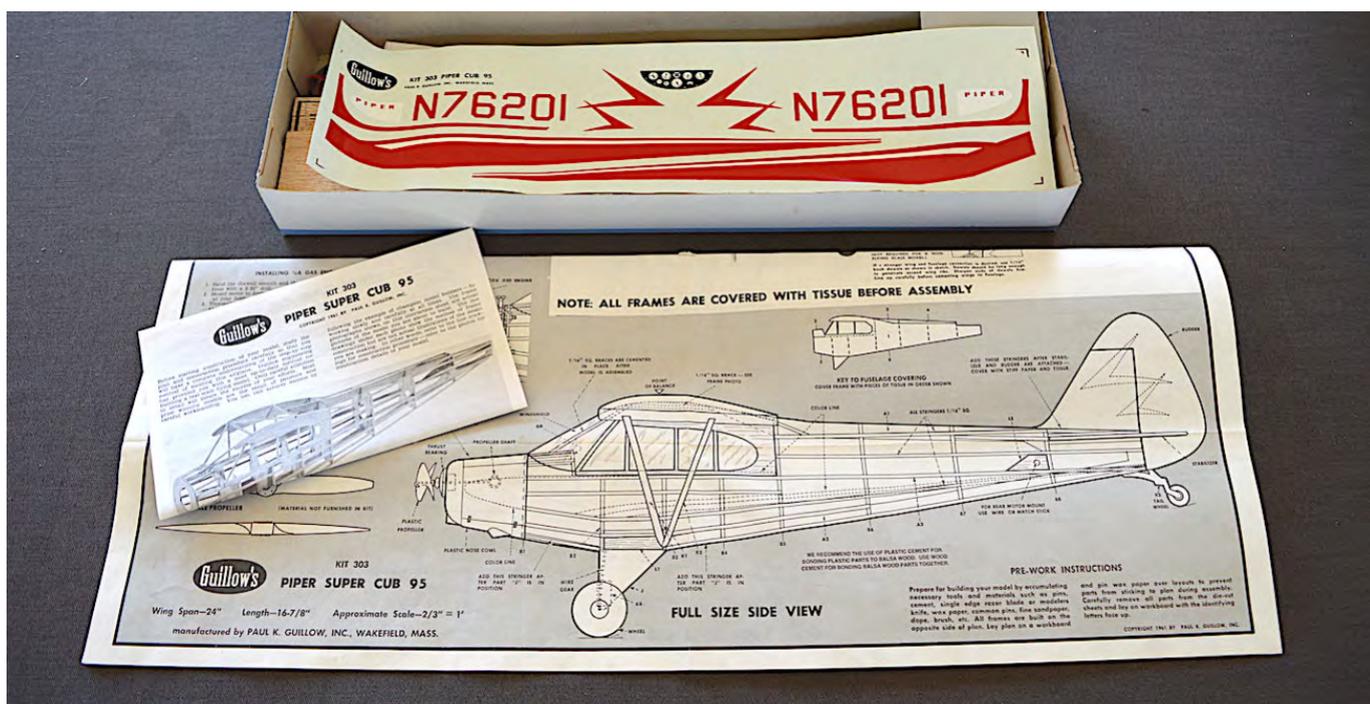
The traditional Piper Cub J3 has become one of the most frequently modelled high wing free flight scale models over the years, particularly in the U.S. It has good proportions for a flying model, needing few changes to proportions of flying surfaces. It has generous wing area and if built lightly, will fly well. Surprisingly, though, its successor, the Piper Super Cub has been less modelled and accurate scale building plans or kits for a free flight version of it are hard to find. One kit design that does have outlines that are relatively close, is the 24" Guillows Piper Cub 95 which is primarily a rubber scale model, but the kit shows adaptations of the design for electric and small Cox engines. There are also a number of building logs documenting conversions of this model to electric power with RC to assist flying it. Now that miniature reproductions of classic diesel engines have become available, these offer a more suitable i.c. power conversion and they would be easier to throttle back than Cox glows. There are still a number of Super Cubs restored and flying so getting photo reference locally should be easy.

The Guillows kit goes together easily and is undoubtedly engineered for less experienced builders, but this is at a cost to flying. The over-engineering makes the model unnecessarily heavy with more wood than necessary in various parts of the model. If being built for rubber power, the plastic cowl should be modified to stop short of a separate removable balsa noseblock to assist in holding thrust settings, essential for trimming rubber powered models.

The kit in the photographs below came with die-cut parts but more recently, Guillows kits have moved to laser cut parts, making construction even easier. Wood quality has also improved.

STAN MAUGER

BELOW: If kept light, the Guillows Piper Super Cub 95 offers a straightforward entry to free flight rubber scale. Note the inclusion of decals.



Scale projects

Piper Super Cruiser - Jeremy Davies

The 30" Easy Built Models Piper Super Cruiser kit is the latest model from my building board. We are all used to laser cut parts these days, and the printed or stamped items from the very early kits are a distant memory now. My first building projects were printed or stamped kits built with my father's help around fifty years ago. Memories of excellent flights abound and I can still remember when a co-built Modelair Tiger Moth flew like a dream.

Many years later, after kids and careers and houses and all sorts of other interruptions, the error of my ways has been identified, and I have returned to the fold and the rubber power challenge. A brief spell back to the addiction about ten years ago saw a fortunate first place in kit scale rubber with an Airsail PT 19 at the Nationals. However, this is the first time since then that the building board has seen a free-flight model.

The balsa in the kit was quite good quality and the plans are well drawn and easily understood. Building instructions were straightforward and intuitive, although there was the odd place where some extra brain power was required to decipher them.

Experimentation with an adjustable thrust line for the prop works well. I may change to using an adjustable prop bearing like the KP version in the future.

Printing directly on to the tissue supplied with the kit, with an inkjet was also a new challenge. This worked well, but a need to re-cover the right wing showed the printing of the registration number to be more defined. Perhaps the replacement tissue from old stock is a slightly better quality than the kit product.

Practice glides after C of G adjustments were made in my front yard late in the evening when all breezes had died away.

These were carried out at a crouching level over about five metres to see how it went. The next glides were at shoulder height and over about ten to twelve metres as confidence increased.

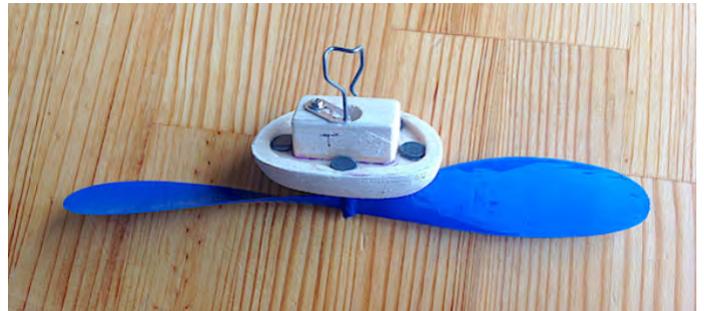
A trip to Karaka early one Sunday morning gave the perfect still conditions for test flying. With fifty turns first a lovely extended glide ensued. This went to 100, 150, and 200 turns, all good flights with no bad habits. I launched badly at 250 turns and a stall occurred followed by a hard landing causing an undercarriage failure which stopped flying of the model for the day.

I would rate the model out of ten as follows:

8/10 for the kit itself, 9/10 for ease of build and instructions, 7/10 for scale accuracy, and 8/10 for flying. Flying will probably improve as my trimming skills are honed.

Overall, I am very happy with the model. It is good value for the money and I will do an Easy Built kit again. I have a few skills to upgrade for the next model, and the Super Cruiser has allowed me to identify and work on them.

JEREMY DAVIES

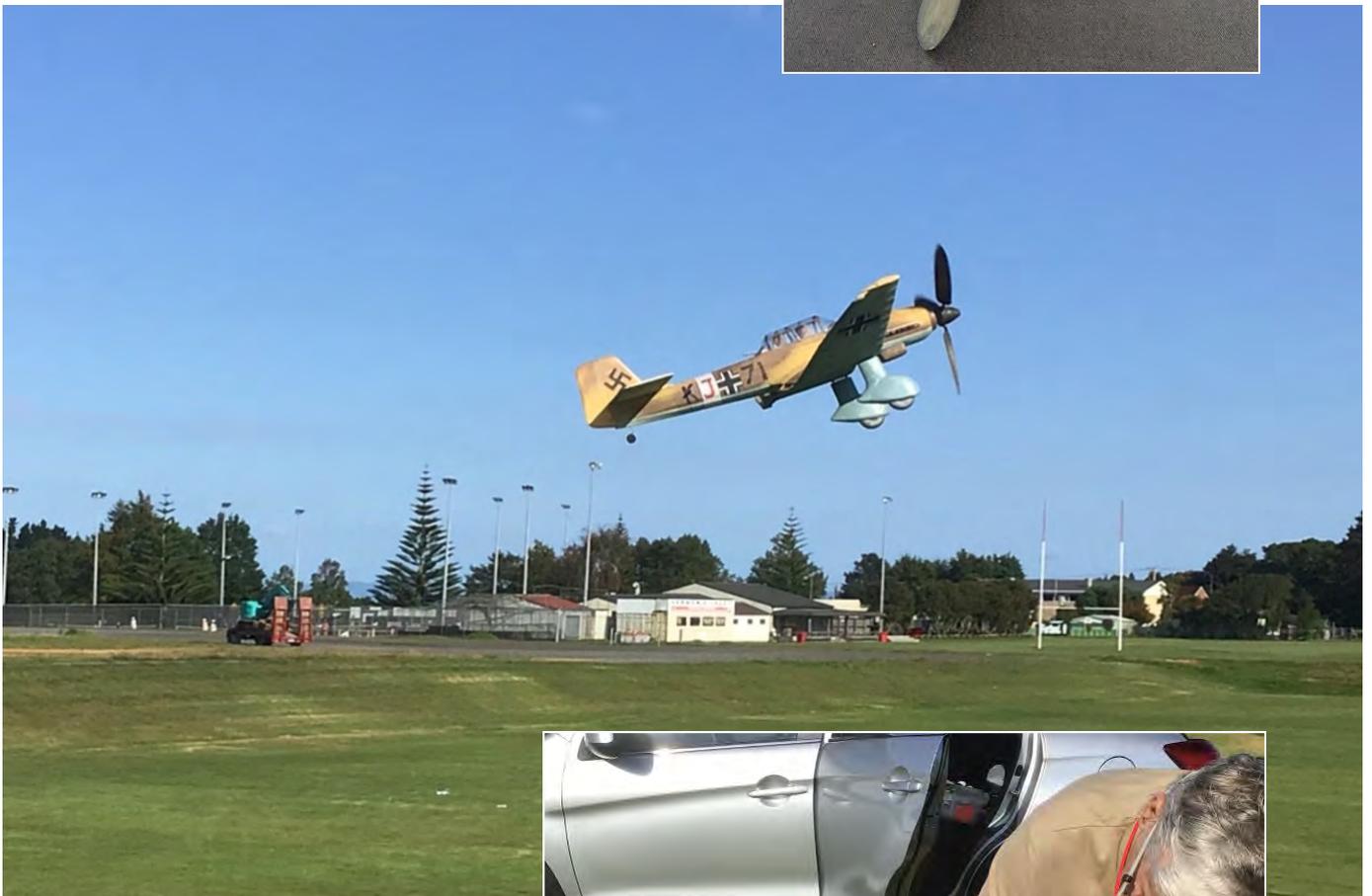


UPPER: The noseblock showing Z hook and adjuster to alter thrust angles. ABOVE: The model has been through initial trimming stages.

Junkers Stuka - Don Spray

The Stuka has presented no trimming problems at all. I put on plenty of turns on the first flight as low wingers seem to need this, to get some idea of how they are going to fly. Being built from an enlargement of the Doug McHard plan, I sensed that no thrust adjustments should be needed, other than a couple of degrees of right thrust. I put the CG at 25%. The model was flown in calm conditions and as the photo shows, it gained moderate altitude. I plan to increase turns and see whether that tightens the turn, but so far, I am most happy with the model's stability and flying.

DON SPRAY



TOP: The Stuka propellor made from moulded laminations of ply connected to the hub with flexible weed trimmer cord.

CENTRE: The model climbing away before making a stable first flight.

RIGHT: A close view of the Stuka on the stooage which shows markings and trailing edge flap details.

Photos: Brendon Neilson

Frog Control Line SE5a - John Macdonald

The Frog SE5a was designed by Eric Walpole of Frog. I first saw it featured in Model Aircraft magazine in the 1960s when it won the Knokke Trophy. I found little to change but did alter the cowl attachment system to rubber bands and hooks with a couple of dowel pegs in the front. Otherwise, the model went together very well. The usually difficult part, setting up the cabanes, was easy. Both rear and front cabanes on each side were single ply pieces. They were covered with 1/20" balsa on either side and sanded to an aerofoil shape. They just slot into the fuselage formers and the top wing. The rigging is just small holes drilled in plywood struts and the same in the undercarriage. I used silk to reinforce the

stress areas of the undercarriage. I have installed an AM .15 because it has a lower cylinder head profile and is likely to be more powerful than the Frog 150 shown on the plan. The model has come out about two ounces under the target weight, so I am happy with that. It still needs the Lewis gun and rail and also a pilot. The pilot provided in the kit was too small. All in all, I found the whole project quite enjoyable.

JOHN MACDONALD



Veron Focke Wulf Fw190 - John Macdonald

I decided to build the Veron control line scale Fw190 because I saw some photos of one that had been built in Model Airplane News back in the late fifties, early sixties. I am reasonably happy with it except that I covered it with silk over tissue and this created a lot of pressure and distorted the wing flaps because there was not enough underlying structure for support. Instead of using small wooden dowels as the linkages to operate these, aluminium tube would have been better.

The symmetrical wing ribs were made in two halves, making assembly much easier. The top half of the wing is built first and

then the lower section of each rib is added. This makes for a good straight wing, but mating up the lower half of each rib calls for care. The cowl is a massive assembly of balsa made in four parts glued together but they weighed a ton. I routed it out to reduce weight as there will probably be no need for ballast to get the CG right. It is almost ready to go except for a canopy and engine. I am thinking about immobilising the flaps and just have the massive elevator.

JOHN MACDONALD



Andrew O'Grady's Control line scale models

This is the second part of the photos and information on these projects (plus others that I included in the last Scale News) by Control Line Aeroplanes of Brisbane (CLAB) flyers, that I was pleased to receive via Malcom Campbell who also took the excellent photos- Ed.



North American B-25 Mitchell

Wing Span: 1400mm
Engine: x2 Saito FA-40
Weight: 3.5kg
Built: 2016



Pitts Special S-2S

Wing span: 1500mm Engine: O.S FS-120
Weight: 5.8kg Built: 1990 by Ralph Burnstine USA



Westland Whirlwind
Wing Span: 1000mm
Engine: x2 Mk-17 diesel
Year built: 1992
Built by: Ian Garton (ALC Australia)



Brian Taylor's Peanut Scale models

Nieuport 11

I had the notion to have a go at building a peanut scale WW1 biplane. And picked the Nieuport 11 because I liked the spun aluminium cowl that was supplied with the Nowlen Aero kit.

All colours and markings are printed on white Esaki tissue using an Epson printer and their DuraBrite ink. I apply artist's chalk (Titanium White) to the other side of the tissue then give it one quick light spray of a permanent finish. I use the same process for most of the small models. I have found that a thin line of Deluxe Materials

Super Phatic glue provides a flexible hinge for Rudder and Elevator. The model weighs 16.6 g. Note the use of a heavy Propeller to move the CG to a suitable position. A loop of 102 thou x 16 inch rubber is used to power the beast.

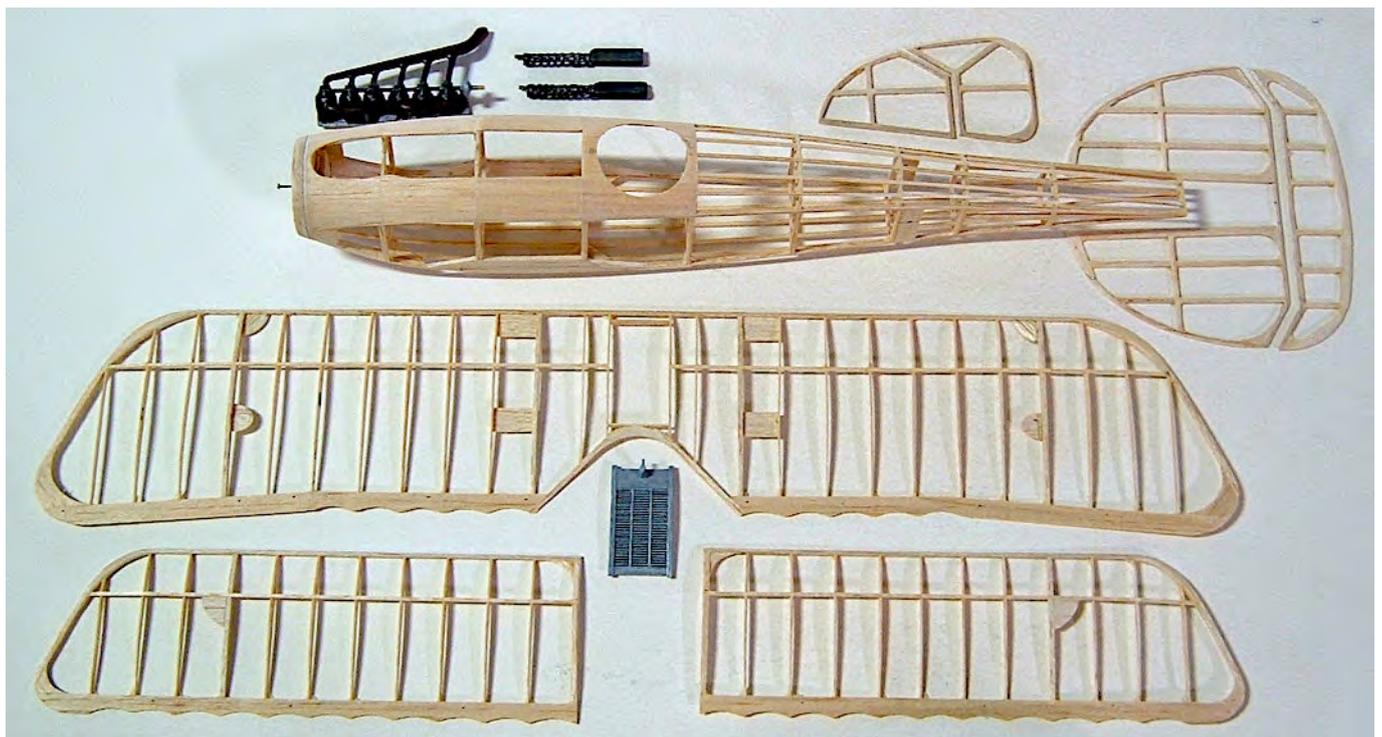
Evans VP-1 Volksplane

This was an attempt at building an uncomplicated lightweight model. I chose to use my colour laser printer instead of the Epson to print the colours on the tissue.



It certainly printed vivid colours and a reasonably opaque finish but care was needed when bending the tissue around sharp edges because some of the toner would flake off.

I was concerned the tissue might lose its water shrinking ability but luckily there was still a little bit of shrinkage left. The toner added more weight than I had envisaged. The model weighs 9.2 g and its best flight time so far is 53 seconds from ROG using a loop of 87 thou x 17 inch rubber with 2000 turns



Albatros D.III

This peanut scale WW1 biplane is based on the Lee's Hobbies plan of the D.II version. The Spandau machine gun's cooling sleeve was made by gluing thin strips of paper on to a jig to form a lattice pattern then rolling it to the required size. It was a little fiddly but it did the job. The model weighs 15.2 g and the best flight time so far is 48 sec from ROG using a 96 thou x 16 inch loop with 1568 turns.



John French's **Hawker Hart**

I have corresponded with John French over the years and have admired the detail that he has incorporated in his models. I should not have been surprised at the fine detailing seen in the accompanying photographs of this project really, because John has built many well detailed subjects in the past that reflect his love of attending to the difficult bits that others of us do not necessarily tackle. The Hart was built a couple of years ago and is a 1:10 scale non-flying model

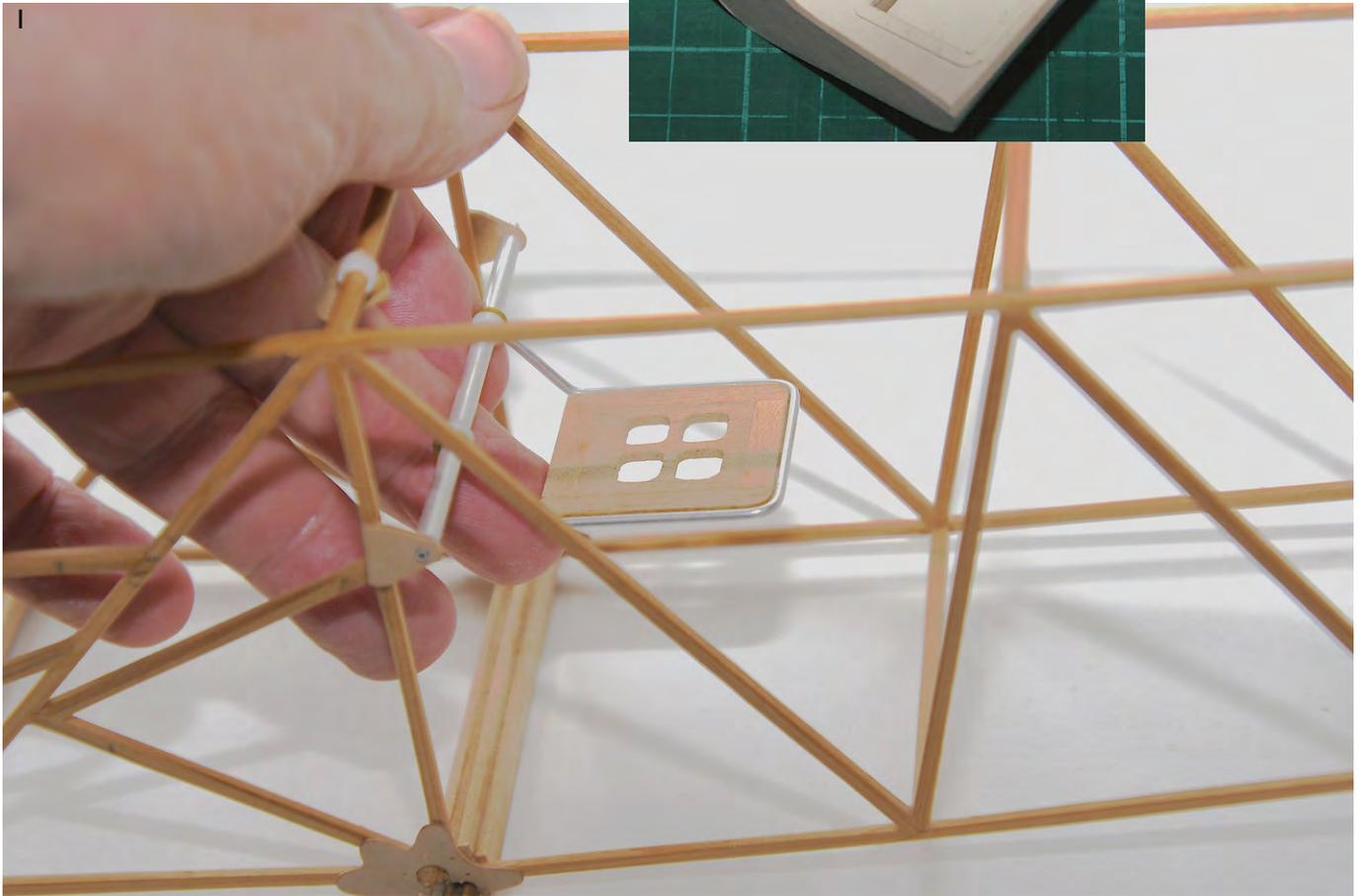
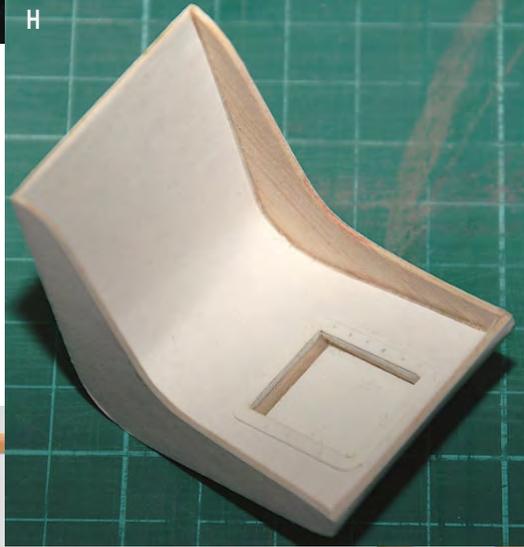
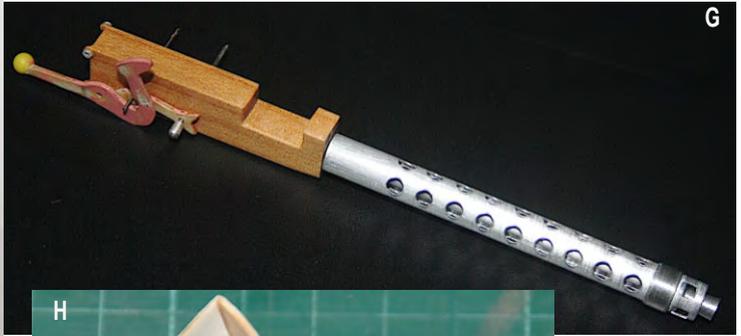
complete with, as John states, "as many details as I could find out about". Whilst a non flying subject does afford the luxury of not having to worry about the extra weight added by concentrating on these details, the way that these parts have been made is bound to provide inspiration for builders of free flight or control line scale models to include more detailing.

STAN MAUGER



KEY TO PHOTOS:

- A. Fuselage balsa sheet and blade putty (red-brown) filler.
- B. Front fuselage adding cockpit details.
- C. Engine exhaust and Vickers gun trough.
- D. Front cockpit panel. Dash and radio in the rear cockpit.
- E. Setting out the instrument panel.



KEY TO PHOTOS
F Camera.
G. Vickers machine gun.
H. Seat for pilot from balsa and paper.
I. Seat (Folding) for navigator-rear gunner.
J. Rudder pedals are tiny.
K. Lewis gun ring.