

## Sticks and Tissue No 181

If you can contribute any articles, wish to make your point of view known etc please send to or phone 01929288879 [JamesIParry@talktalk.net](mailto:JamesIParry@talktalk.net) The content does not follow any logical order or set out, it's "as I put it in and receive". Thanks to Mark Venter back issues are available for download from <http://sticksandtissue.yolasite.com/> Writings and opinions expressed are the opinion of the writer but not necessarily the compiler/publisher of Sticks and Tissue.



**From Peter Renggli Antik. Modeliflugtag beim MV Bern 2.9.2023. Photos and copyright Kusi Brönnimann Photography**

## Re-applying tissue to sticks by J Supercool

I recently felt the need to fly my somewhat aged enlarged Frog Goblin. Originally set up to test contra-rotating props on a pair of small electric motors, over the last few years it suffered various tissue rents. The idea was to replace the electric motors with a 0.5cc version of the Mills 0.75 diesel.

So this time fuel proofing was a consideration, as was removing the old tissue. I had read somewhere that application of acetone to the tissue/balsa junction was the go. In the event, the tissue more or less fell off, having had first been applied with Clag tissue paste.

The original surface was dope overlain with a coat of clear one-pack polyurethane. In this case, Feast-Watson weather-proof varnish. I use this a lot, it goes on really well and gives a real nice finish.

So I was rather stunned to see the varnish separate from the doped tissue! Well at this messy stage my mood could politely be called "fatalistic", so I ignored the weirdness of this and continued.

Fate then lent another hand, as my stock of "modelspan" tissue proved to have disappeared. I don't use plastic films, as I'm still working out of the Reverend F. Callons' "ABC of Aeromodelling" circa 1950. Also I saw my son heat shrink this stuff and, in shrinking, it crushed his fuselage frame!.

So it was back to tissue. My Hobby store carries tissue, but to my horror, it was \$5 a sheet! Now I know the world has moved on, but nobody told my wallet (this is written in 2024, and my glory days were in the 1960's).

This left the local craft store and the newsagent as my only affordable source for tissue. There were 2 identical packages (or so I thought). One turned out to be cellophane. I used clear cellophane one time on a cockpit frame. This worked well and could even be water-shrunk, but I did want tissue.

I found a range of very bright colours in 50X75 cm sheets. This was good, as I wanted the fuselage to be a dark black and the wings, orange. Now I lied a moment ago: I did find my orange modelspan, so used that on the wing. No drama there.

But what was the newsagent tissue like? Well, the price was right. \$2.50 for 5 sheets. Also the black version was very intense (?) It was also very thin, but not actually diaphanous. Cutting with a sharp pair of scissors went well, as did a new razor blade. So I cut out a panel about 20 long to apply to the fuselage side. Onto the frame went a thin coat of Clag, then the tissue draped over it.

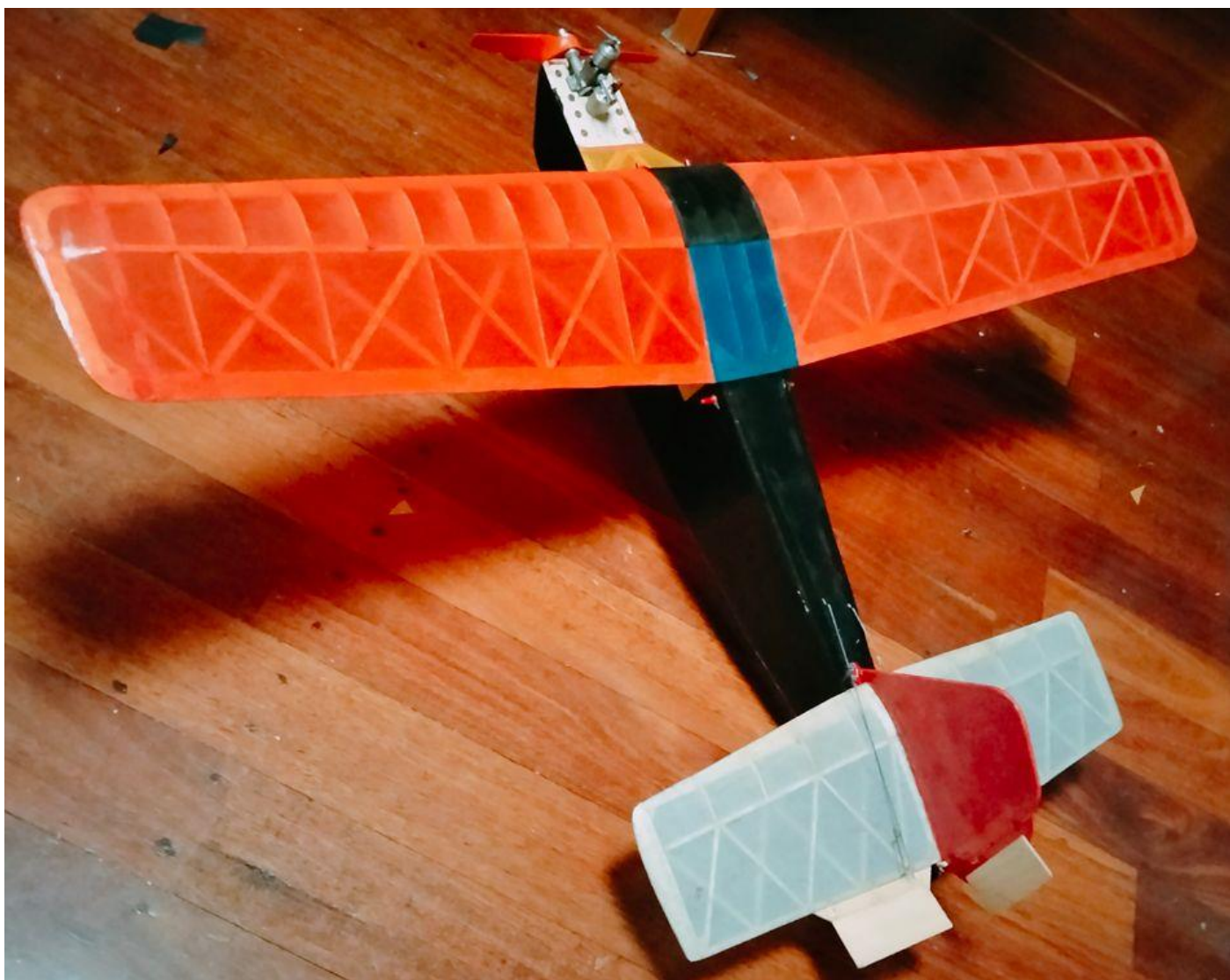




Now this stuff has very little wet strength, so only a small amount of error can be made locating it. I used brute force ( although at age 80, much of the brute has faded!) with success, trimming off the excess with the aforementioned items.

This went well, so the rest of the fuzz was treated likewise. Water shrinking went very well, most of my errors in layup disappearing. Doping after everything had dried out, also went well. Finally, applying polyurethane varnish also went well. The water was sprayed, the dope was more or less splashed on, but I did go to some trouble to find a very soft brush for applying the varnish.

I haven't flown the model yet, but its looking good. In particular, the black colouration on the fuselage was really intense, despite the tissue being so thin. A very rewarding outcome. I feel that for lightweight models this tissue is worth a try.















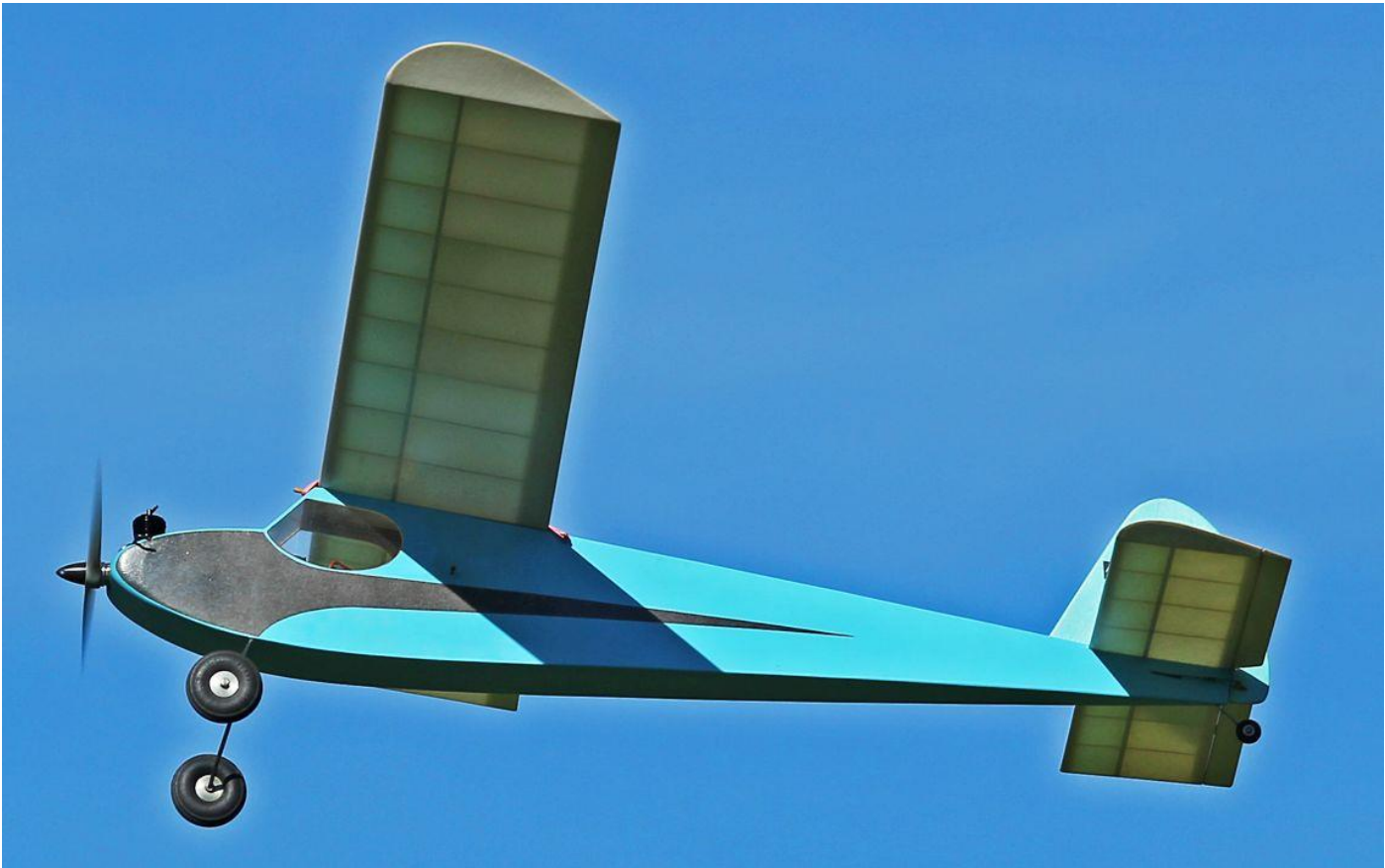


















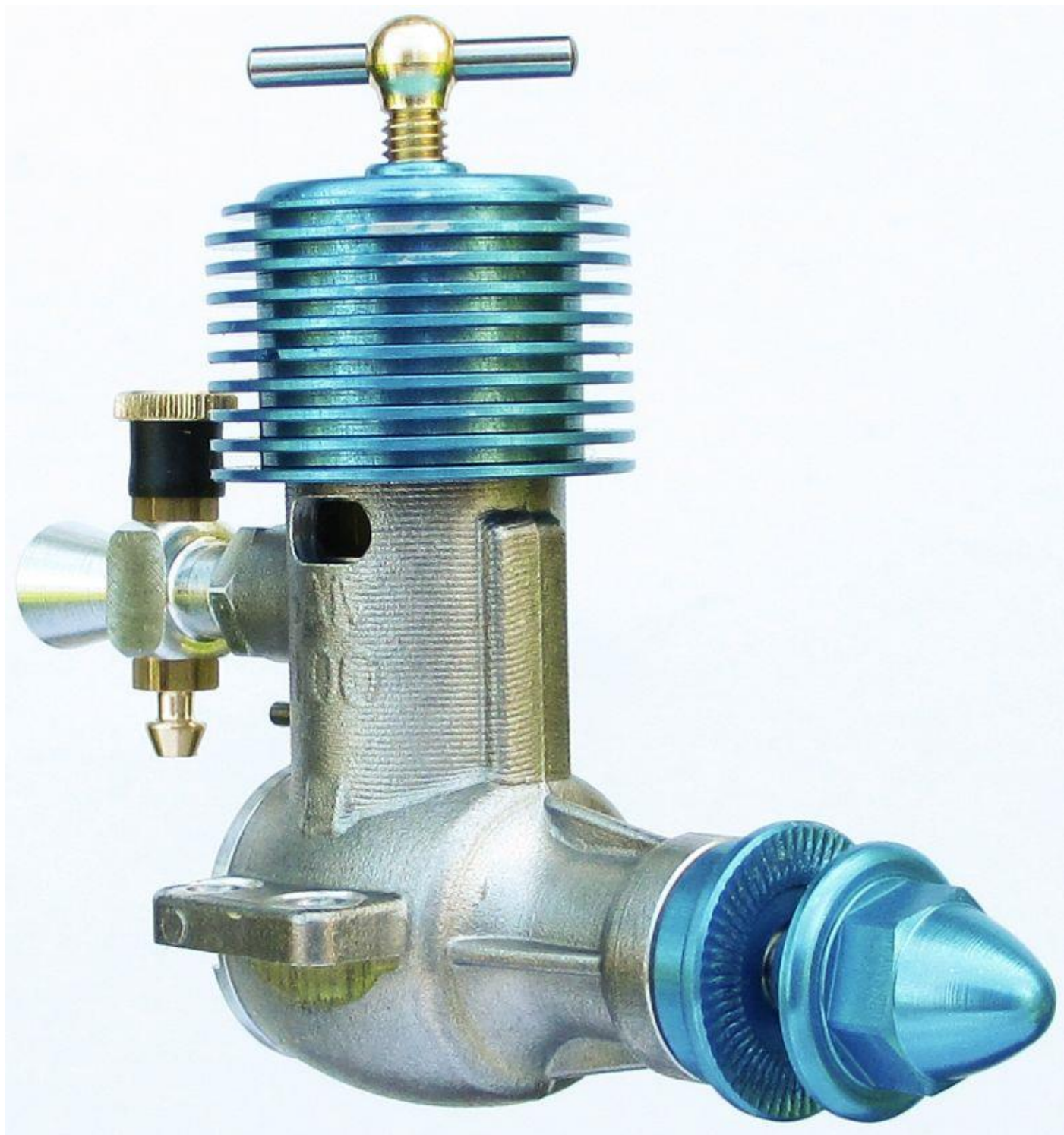


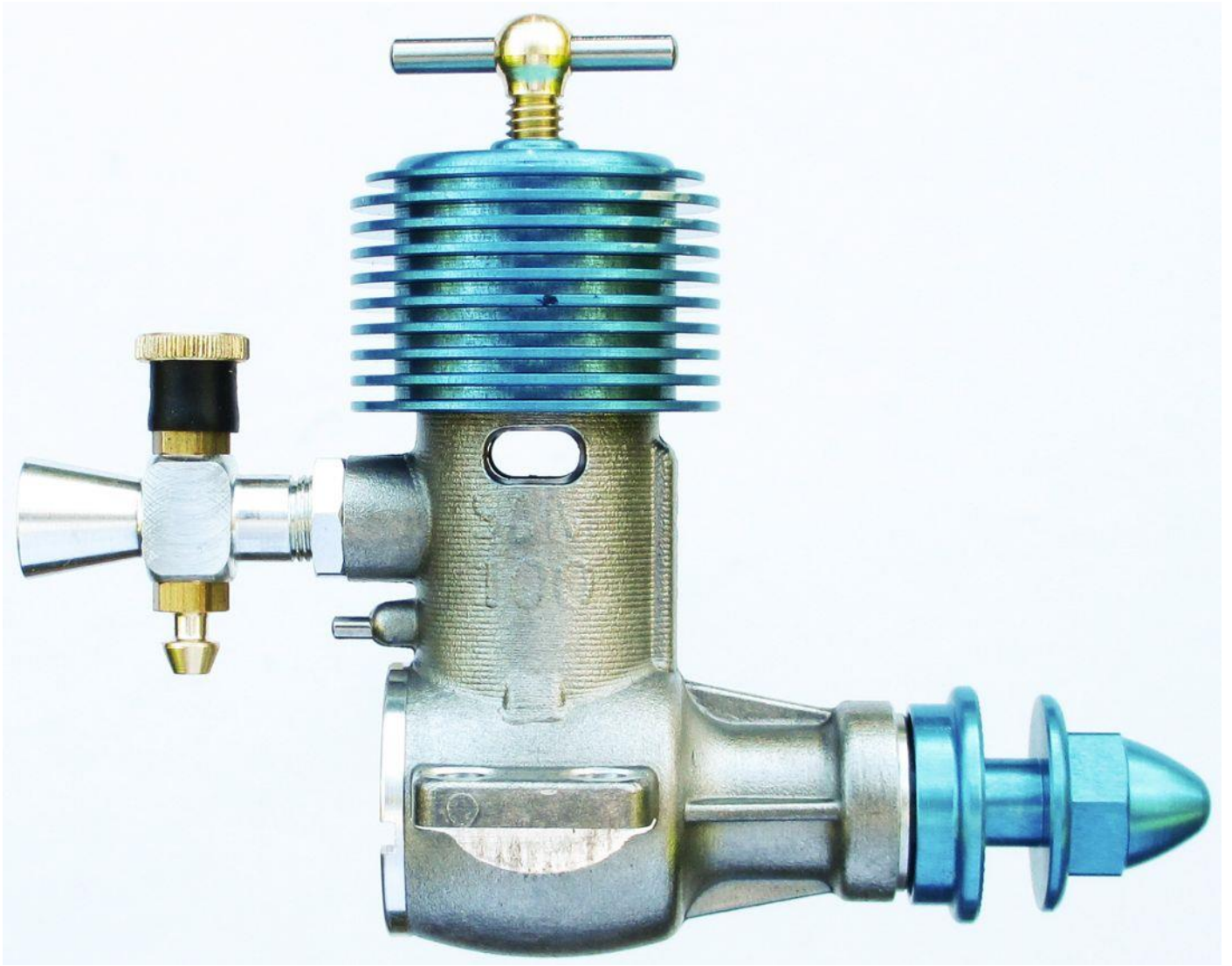


From Bill Wells

### **SAM 100**

A double ball race long stroke engine of just under 1cc, just right for the older free flight or even small control line models.







From Paul Helman, Wilmette. Illinois

### Super Hog

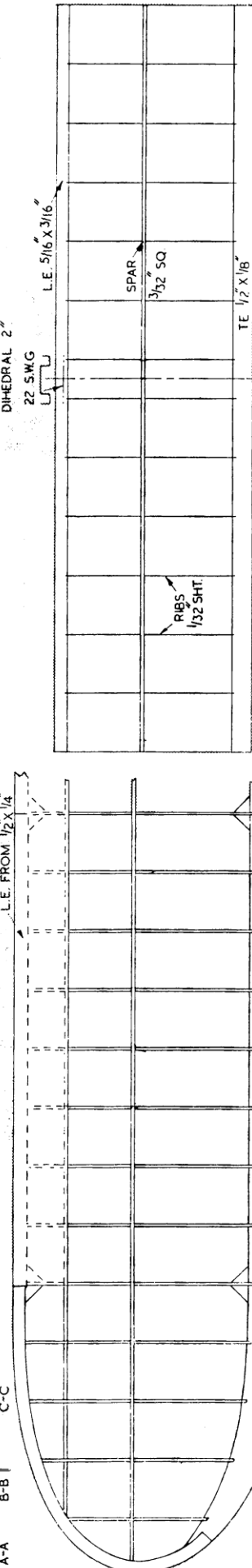
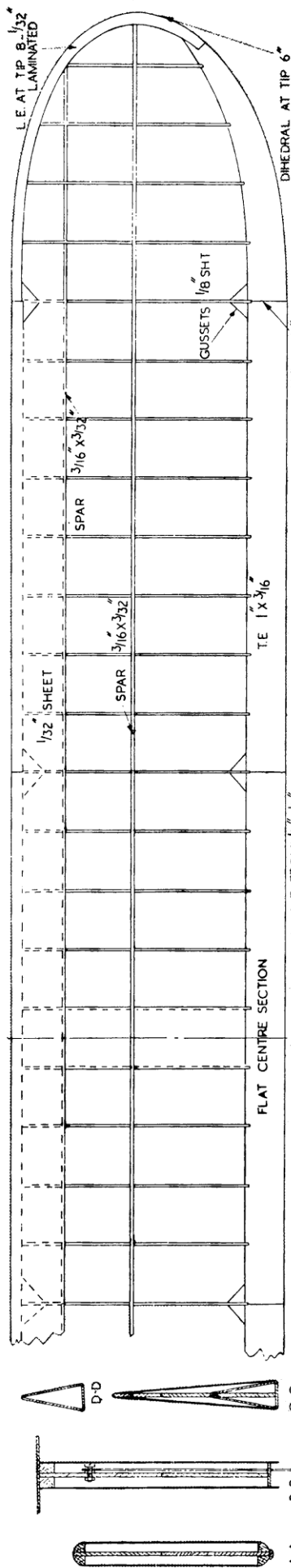
I designed this around the "Air Hog " compressed air flying model airplane. The motor was developed in England for model aircraft but the market was apparently lacking and eventually a styrafoam ready to fly model was created in Chicago then marketed by a Canadian company. The production was actually done in China. At any rate it is similar in design to that Italian product back 35 years ago being light weight out of plastic and over square bore/stroke.

My model with the tank empty comes in at 31 1/2 oz. and has about 120 square inches. I used the good old RAF 32 with a multispar structure. If a source could be found for these motors they would make a nice small field or even indoor competition class. I used that Italian motor in an ABC Robin which would regularly turn in two minute or more flights in calm conditions. Remember air is always available.

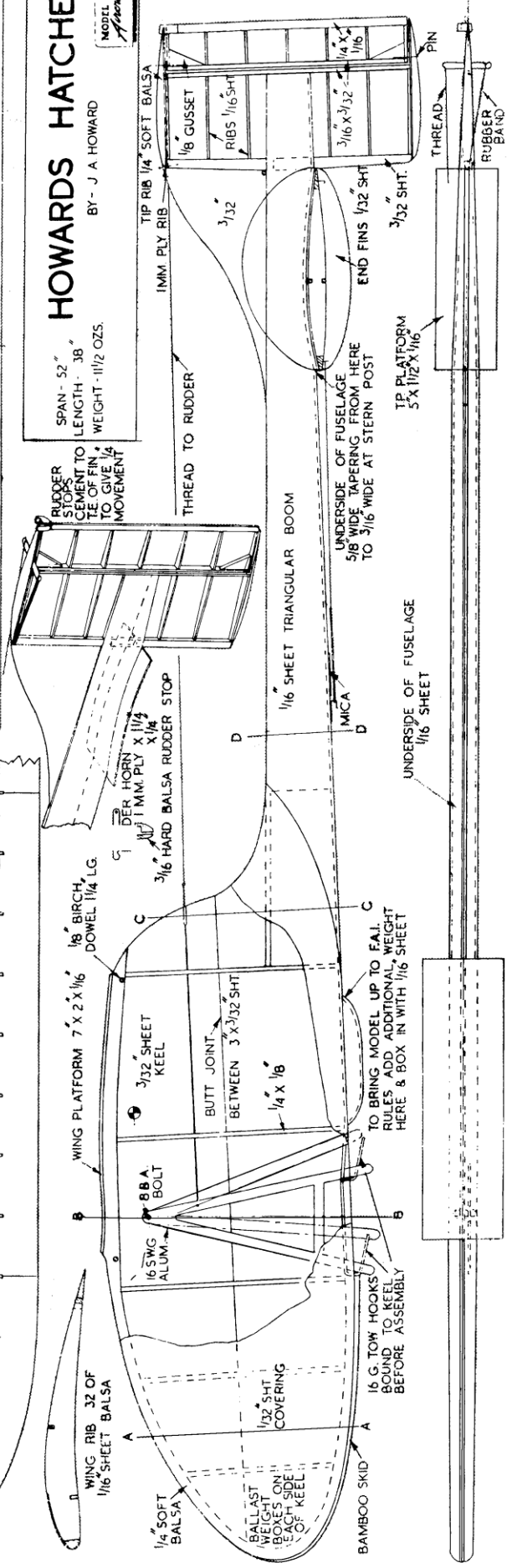


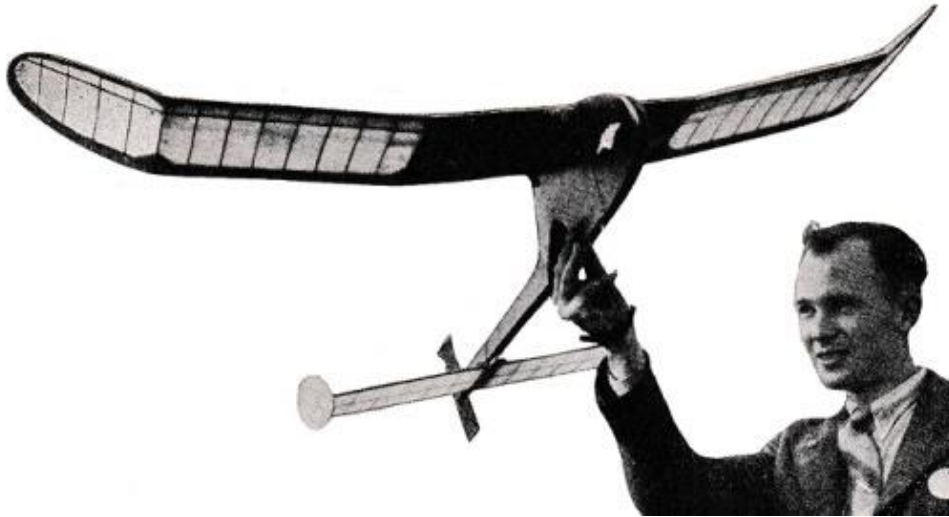






**HOWARDS HATCHET**  
 BY - J A HOWARD  
 MODEL Aircraft  
 SPAN - 52"  
 LENGTH - 38"  
 WEIGHT - 11 1/2 OZS.





Howard's Hatchet 52 in glider by J A Howard from Model Aircraft July 1950

The "Howard Hatchet" is an ideal contest type glider, and although not a large job it stays in sight for at least 5 min. in quite high winds, owing to the tight circle obtained by the use of an auto-rudder. This also enables a dead straight tow-up to be made, and maximum height to be attained before release. A dethermaliser is essential for this model and the one described is very effective and reliable. Hard balsa must be used throughout unless otherwise specified.

**Tailplane**—It is advisable to start with the tailplane, so that when building the fuselage the correct amount of balance weight can be built into the nose. Cover the tailplane before cementing the end fins in place and give it one coat of dope.

**Fuselage**—Commence by building the triangular boom from 1/16in. sheet. Cut the keel from two sheets of 3-in. X 3/32-in. sheet butted together. Bind the 16-gauge wire tow hooks to the lower of the two sheets before cementing them together.

Cut a slot 4 1/2 in. long in the keel so that it can be slid into the boom. Now cement the 1/4-in. sheet outline and 3/4 in. X 1/8 in. half formers in place on each side of the keel. The "A" shaped part, which is cut from 16-gauge aluminium, can now be bolted into place. Smear cement around the nuts to lock them in place. The slots in the underside of the fuselage must be long enough to give about 3/4 in. of movement.

The fin is built up on the fuselage. Cover the fin and rudder before pinning the rudder in position. Install the wire and thread parts of the auto-rudder and check its movement. Attach the completed tailplane in place and add weight to the nose until the model balances at about 0 per cent, chord. The fuselage is then ready for the nose to be covered with 1/32 sheet. Rub the fuselage down with glasspaper and dope on tissue. Give the fin and rudder one coat of dope and the fuselage three.

**Wing**—This is quite orthodox and is in one piece. The laminated L.E. at the tips is made by a method which is probably not widely known. First make a former of deal or thick balsa to the inside shape. The next operation requires very speedy work, so get the former, pins, cement, and the 8 strips, 18 in x 5/8 in x 1/32 in. handy. Quickly cement all the strips together in a pile, firmly pin one end of the pile in place on the former and push the strips round before the cement has had time to set. Then pin the other end in place. When set carefully cut down the middle to make the two tips 5/16 in. X 1/4 in. Cover the wing with Jap tissue and give two coats of clear or coloured dope.

**Dethermaliser**—The tailplane is held in place at the trailing edge by two rubber bands, and at the leading edge by a loop of thread about 6 in. long, which goes over the boom, and through the wire loops on the tailplane. It is kept in tension by a rubber band attached to the bent pin on the under side of the fuselage. The fuse is put through the band which as it burns allows the leading edge of the tailplane to drop between 50 deg.-70 deg. from the horizontal. What happens after that is always interesting. Sometimes the model mushes down at a fairly fast rate, or it may spin, loop or bunt. What ever antics it performs, however, it does come down and is well able to survive the



landing. I use upholsterers, piping cord, which burns at about 0.4 in. per min. for the fuse and I do not treat the cord with saltpetre.

If it is desired to fly the model in FAI. competitions add the additional weight required to the underside of the fuselage and box it in as shown on the plan with 1/16 in. sheet to bring the fuselage cross section area up to the correct size.

Weights :

Wings ... .. 3 ½ oz.

Tailplane ... .. ½ oz

Fuselage (including 2 oz. ballast) ... 7 ½ oz

Total 11 ½ ozs.

## **Summer meeting '24 rubber/CO2 engine powered models, 20.07.2024 from Peter Ziegler**

The weather order from St. Peter has arrived: Sunny and no wind! Ideal conditions for this year's summer meeting. Three women, 19 men and 4 juniors found their way to the "Gheid" in Olten on this hot July 20th! An overwhelming number of participants.

The weather couldn't have been better with sunshine from morning to evening, relatively light winds but hot. The shade was a sought-after and popular object. Those who weren't flying sought it out as soon as possible. A video, photos and report can be found on the website [www.gummimotor.ch](http://www.gummimotor.ch).

There was also the FAC contest, where there was a lot of laughter. It was a great contest and the dominance of the Phantom Flash over the Phantom Flash II Chameleon was enormous, not only in terms of numbers but also in terms of performance. And there was laughter at the mass launches with all their "problems". The models were launched from the starting table and cardboard starting plates on the ground. 14 participants registered for the contest. Several rounds were held. The winner was the model with the longest total flight time. Flight times of 20 seconds or more were counted. And - taking part was more important to everyone than the classification.

Other models were also flown, including those with Co2 propulsion. Flown, recovered and sweated!

Here are a few photos of the event.



Korda 1939 RC-controlled



Phantom Flash II Chamäleon and Phantom Flash

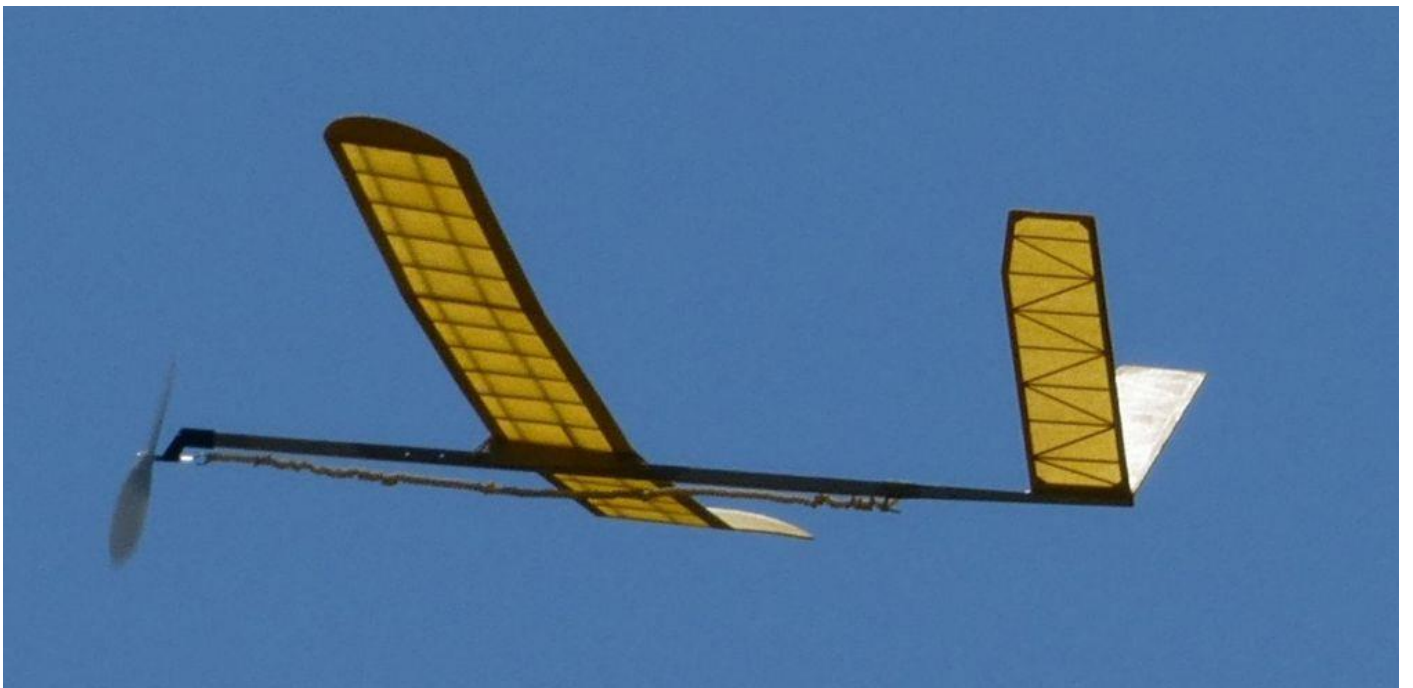


Phantom Flash II in flight





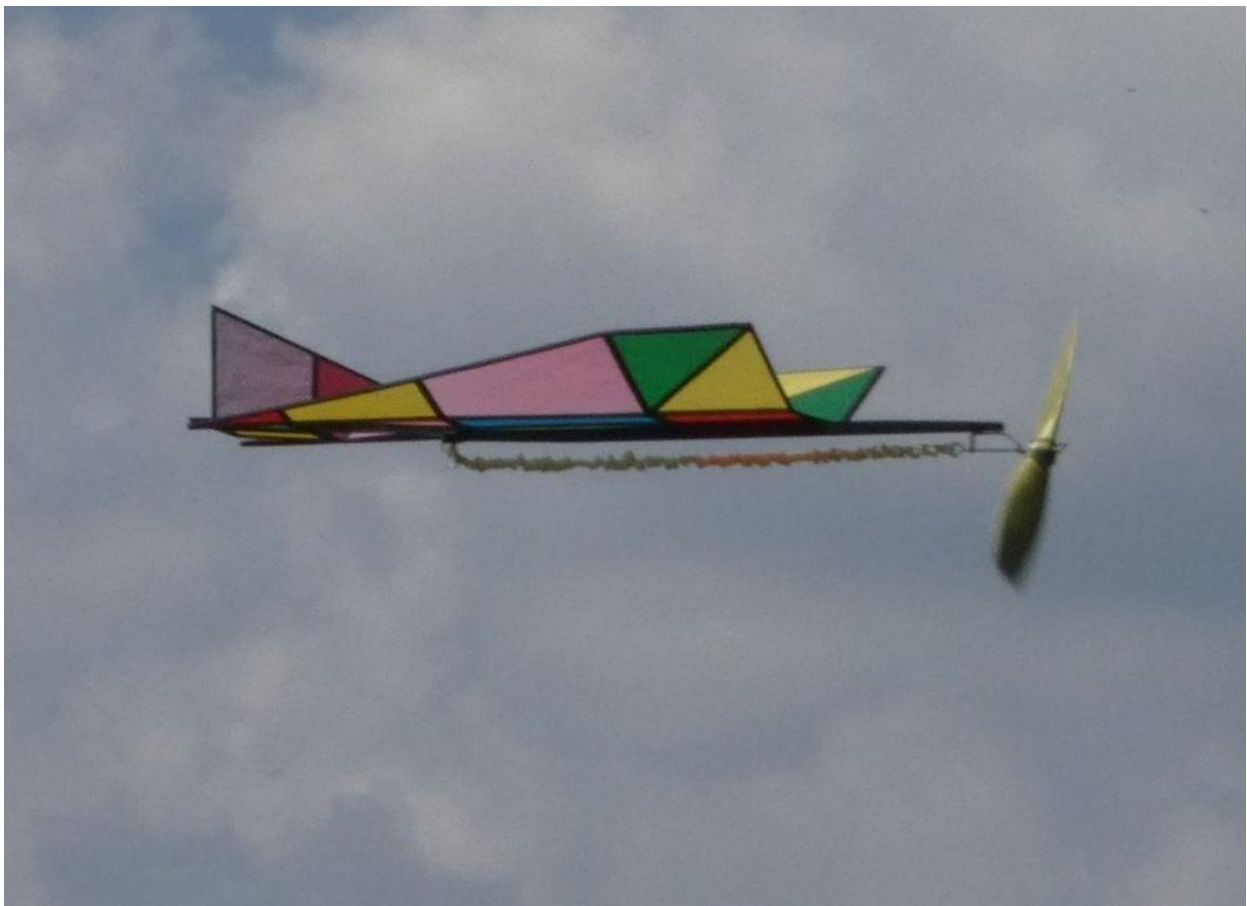
Phantom Flash in flight



Self-built with V-tail

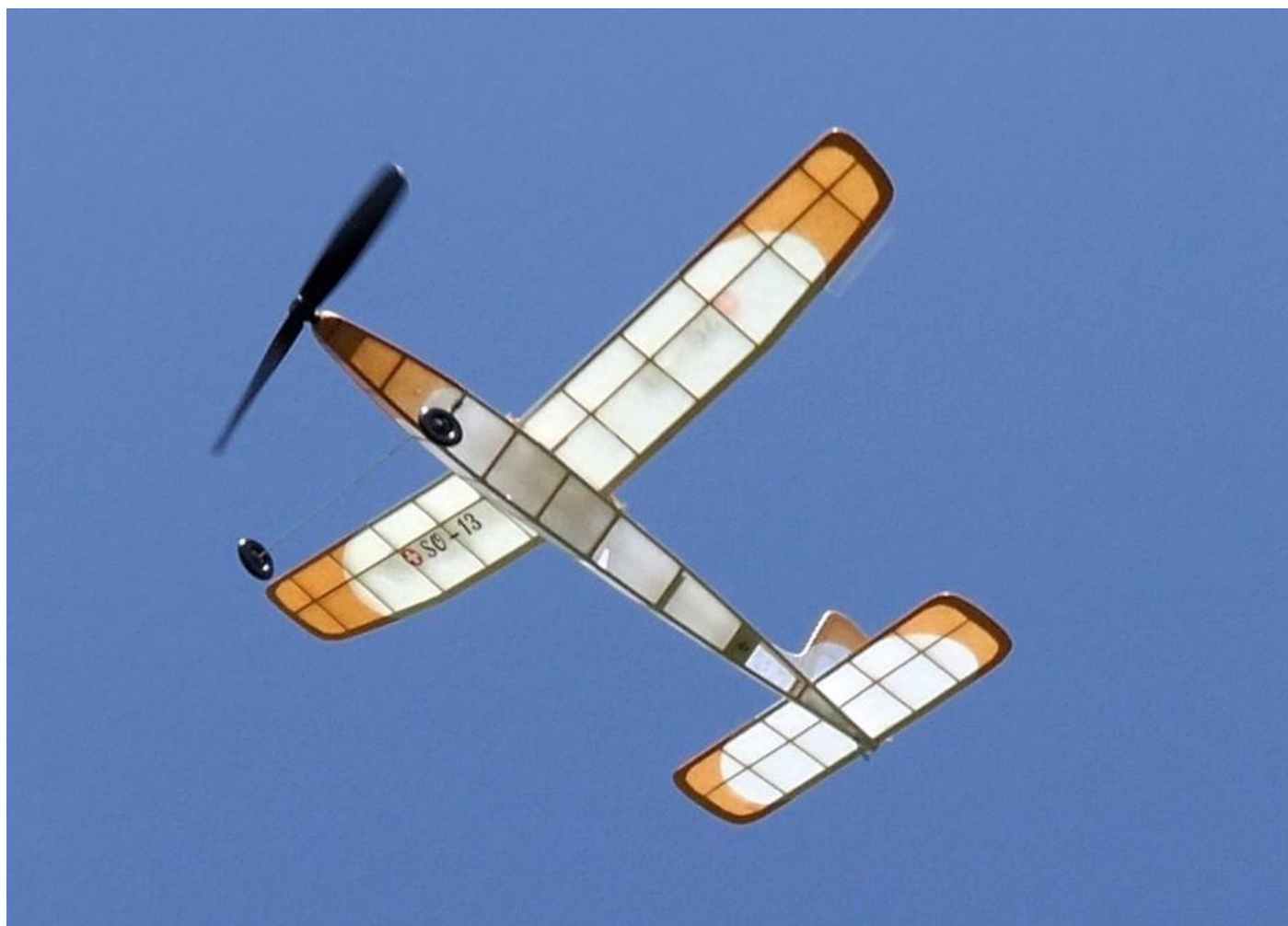


Veron Cadillac from 1960



Stained Glass Window from 1973





Veron Goblin from 1949



Co2 model Topsy



Consequences of the heat



FAC Contest\_Ready for launch





FAC-Contest\_Freigabe



FAC-Contest\_Release



Graupner star from 1953



Handley Page HPR.7 Dart-Herald





KeilKraft Senator from 1950

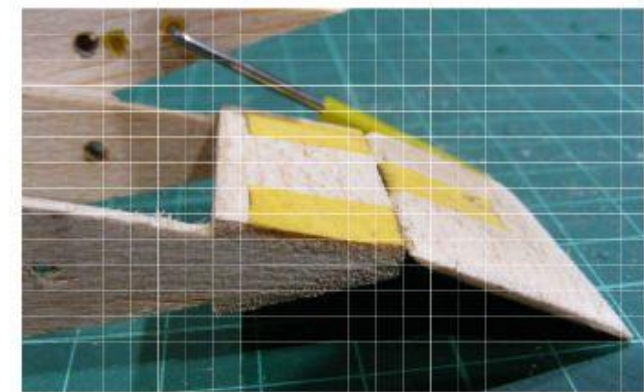
### ANOTHER C/L TO RC CONVERSION

Soon after flying the RASCAL RC as my first twist wing experiment, I was regularly frustrated by poor weather in 2023 and failed to get to any away meetings so that model has not yet been seen in public. With much of my flying upset by conditions that year I pondered where to go for the next project and by chance was offered a plan of the Keil Kraft SPECTRE. The sleek lines and large wing area of this Dave Platt design were immediately attractive and so I chose it as my next 'small' RC project with no changes in size from the original that I had flown in circles all those years ago. A start was made early in 2023 when the basic fuselage box with motor soon came together but had then to be put aside for more important domestic tasks ! I resurrected it much later when the weather started to warm up in April '24 and was pleasantly surprised to find how much had already been done so the first 2024

Cocklebarrow meet became a realistic target for completion. Basic wing structure was next with the intention of using same method of roll control as on my RASCAL (see **S&T** No 175, and a full article in *Aeromodeller* Feb '23).

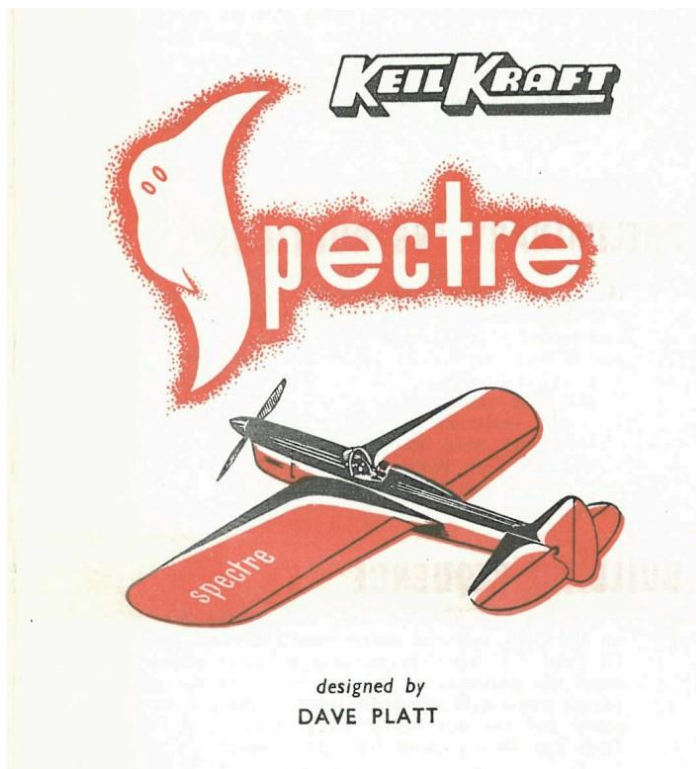
As well as the twist wing system using a 6mm carbon axle between the spars, I intended to rig what had been the CL flaps as geared tabs, whereby they moved in the same direction as the

TE depending on how much gearing was employed. This would have two effects; enhancing the roll power and secondly, potentially acting as an anti-flutter device. Following the success of my RASCAL, I was not too concerned on this last point but I do like a bit of aerodynamic engineering; it would be a novel feature to be fully assessed after the first few flights. To develop this a small test section of the wing root end was quickly assembled [Fig 1] to check the geometry before making any wing or fuselage changes. After some sketching and pondering, the drive solution that evolved was remarkably simple, retaining the



**Fig 1. Test section for Tab drive**

ability to change the proportion of tab deflection if later needed. The next task was to establish the wing drive linkage from the 'Aileron' servo. The partially constructed fuselage with its open top was in an ideal state to finalise the best servo and control run positions [Fig 2] before adding the rear top decking. From previous experience, maximum wing deflection was set at  $\pm 4$  degrees (measured from wing LE to aft edge of the moving tab) with the tab movement set at a low value that could easily be adjusted later.





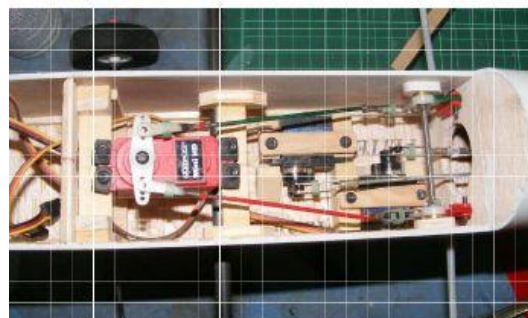
I intended to retain the original SPECTRE outlines but anticipated adverse Yaw so intended to include a Rudder servo this time. Having installed the standard size Roll servo and its drive linkage in the fuz, I was pleasantly surprised to find enough space for two mini servos, lying on their sides [Fig 3], to drive Elevator and Rudder.

Having established the internal equipment layout and installed all control runs, the fuselage top decking and forward hatch were soon completed. Instead of the stringered rear decking, I planked this area for the intended lightweight glasscloth finish on the whole fuselage. After that finish had been applied, rattle can Acrylic paint was masked up for my chosen 'Raspberry Ripple' livery to produce a flyable airframe without the motor cowl and spinner that would be added after a proving flight or two. A wattmeter check showed that the APC 9 x 4.5E prop was drawing a healthy 210 Watts which gave 120Wpp - well within motor and ESC limits and more than enough urge for a maiden flight.

The maiden flight happened on 23rd June in one of the rare calm days. All checks were completed and the throttle opened steadily with no sign of diverting from a nice straight line. Easily airborne and the controls were found to be pleasantly responsive but not twitchy. Roll rate with  $\pm 4$  degrees movement was about the same as the RASCAL. As expected there was quite noticeable adverse Yaw so I was glad to have included a Rudder servo which will eventually have Aileron to Rudder mixing dialled in. After about five minutes 'feeling the air' it was landed to check that all was well. A quick battery test showed 68% still in the 3S 1300 LiPo so another short flight was made. Having satisfied the basics, the model came home again to complete the motor cowl and to add the final cosmetic touches. Addition of the fairing aft of the cockpit does make a huge difference to appearance. I always like to have someone onboard but Snoopy is only a temporary cockpit occupant until I can find something more suitable - perhaps a profile image of Dave Platt himself.



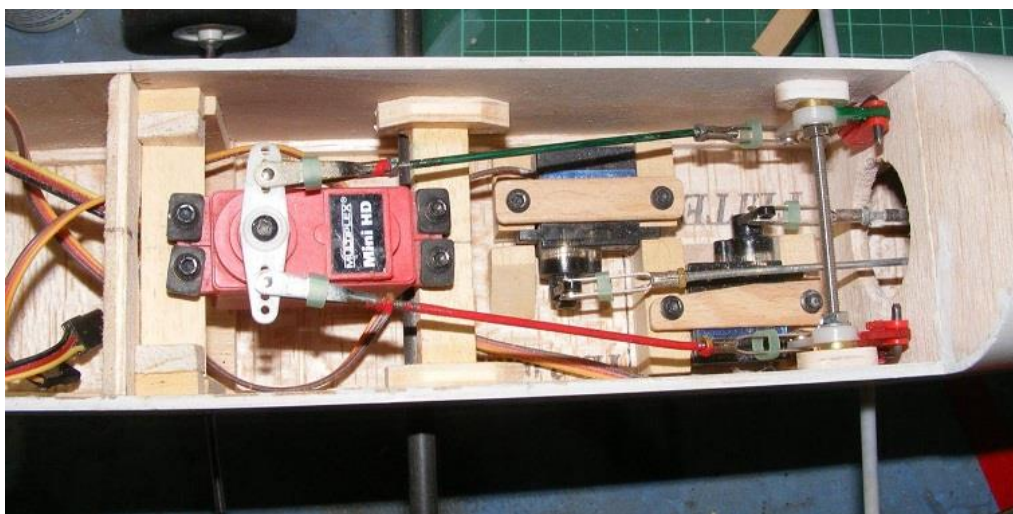
**Fig 2. Control runs completed**

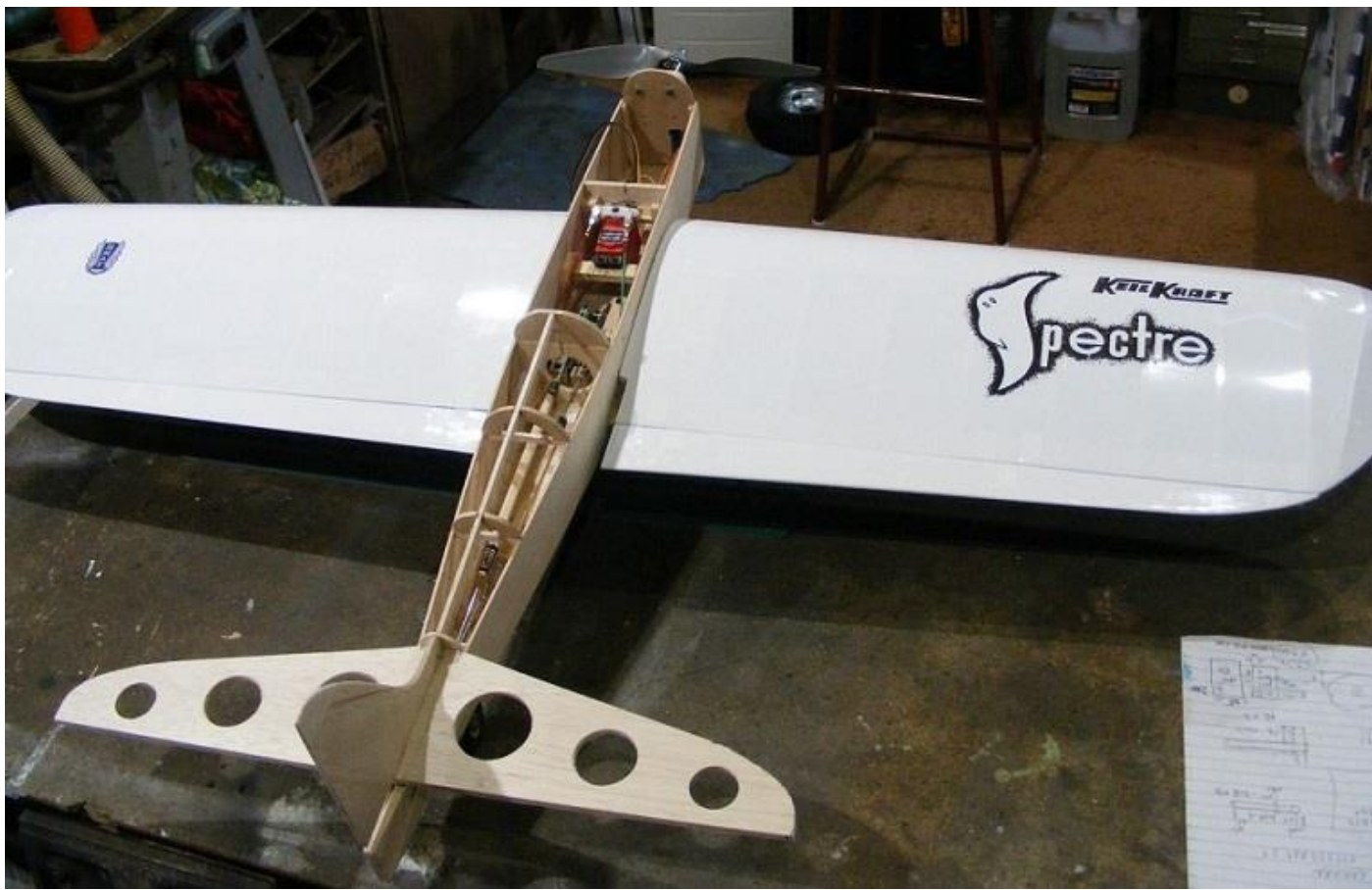


**Fig 3. Servos and linkages**



**Fig 4. Ready for Maiden flight**









### **Original Design**

Control Line Aerobatics Trainer

By: KEIL KRAFT (Dave Platt)

Span: 41"

Weight: 26 oz

Power: 2.5 to 3.5cc diesel

Plan: Outerzone oz 1327

### **This Model**

Span: 41 inches

Avge Chord: 8.5 inches

Wing Area: 2.43 ft<sup>2</sup>

Weight: 28 oz [794 gm]

Loading: 11.6 oz/ft<sup>2</sup>

Motor: Aeolian C2830 1300kv [300W] [180 wpp]

Battery: 3S 1300mAh LiPo

Prop: APC 9x4.5 E [210 W 120 wpp]. 8x4E [150W 86 wpp]

Controls: Ailerons (*twist wing*), Elevators, Throttle, Rudder

Built & flown by 'Spike' Spencer (Salisbury MFC) June 2024

The following photos have been sent to me by Peter Ziegler on behalf of Peter Renggli.

Peter Renggli has organized a small personal meeting with good friends, and has approached me with the request to write a small report for the website of MV Bern. He asked me to send it to you, as he always did after the meetings.

Regretably Peter Renggli is not too well and as a consequence has retired from aeromodelling.

I am and feel sure all readers of S&T are saddened by Peter Z's news. I am equally certain that we all send our best wishes to Peter R and thank him very much for all the effort he has put into sending photos of the glorious MV Bern annual meeting for many years.

Peter's work has been greatly appreciated and brightened our collective day when S&T is emailed out we will miss him and his photos. (James Parry)

### **Small antique model meeting, 16.06.2024**

Peter Ziegler

The invitation arrived unexpectedly by e-mail on 16.04.2024. Consult the agenda - the date is free, I'll be there.

Together with Christian Ott, a former member of MG-Bern, and our rubber motor models in our luggage, we drove to the Gürbetal valley to the airfield of MG-Bern, sorry, MV-Bern.

When we arrived at the airfield, we were warmly welcomed by the comrades present and by the organizer Peter Renggli. Other comrades from the antique scene were eagerly awaited. But the group remained small. Walter Wolf with his wife Hedi and Stan Stembera also arrived.

Together with the "antique pilots" from MV-Bern who were present, this was a more than manageable group, supplemented by the model flying comrades who were indulging in their hobby on this Sunday: Powered flight, glider towing, winch launch, gliding, paras and e-jet. This colorful mix led to interesting conversations across the "sector boundaries".

The two antique gliders (ESSO and Milan) provided plenty of winch action with the old motorized winch, which even enabled the ESSO to make a "stratospheric flight". Stan will not forget this flight in a hurry. The developing thermals really pulled the model up into the air and under the white cloud base the white glider could hardly be seen. Four, six, eight, even ten eyes searched for the model. A brief flash of the covering then showed its position and from then on it was never let out of sight. Steered into the blue sky, the controlled descent then took place from over 800 meters above the ground. I don't know how long the flight took, but I estimate that it lasted over an hour.

Our rubber motor models stayed on the ground due to the vegetation surrounding the site. I attempted two launches with the Veron "Sentinel" with a reduced number of elevators on the string. The two flights were ok, but I decided not to take off again, as the changing wind and thermals would inevitably have led to landings in the surrounding fields.

For Christian and me it was a pleasant day among comrades and friends and we are already looking forward to the antique model flying day in the fall. Thank you dear Peter, thank you MV-Bern!



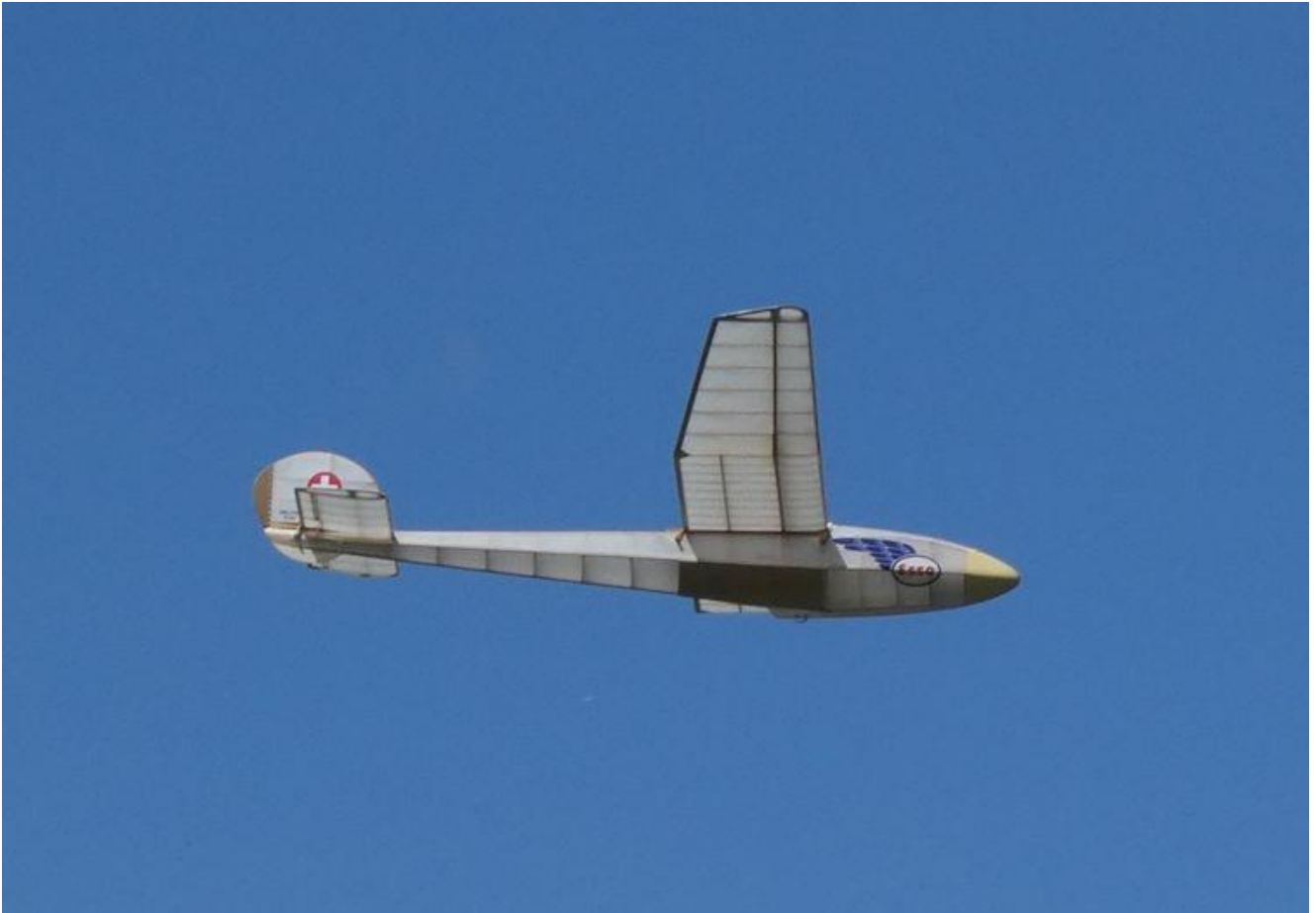






















Ton van Munsteren with photos of the Mayfly 2024 in the Netherlands



That's me Ton van Munsteren









