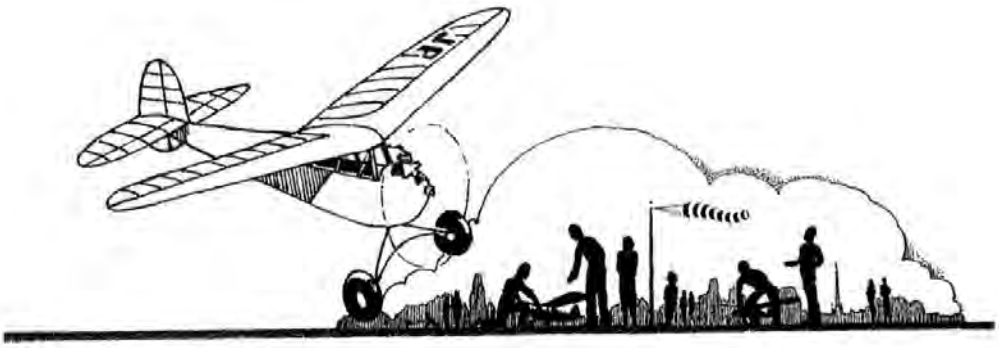


Sticks and Tissue No 72 – November 2012

If you can contribute any articles, wish to make your point of view known etc please send to or phone 01202 625825 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://www.cmac.net.nz

Writings and opinions expressed are the opinion of the writer but not necessarily the compiler/publisher of Sticks and Tissue.

Peter Renggli / Urs Brand photo, Switzerland in September 2012

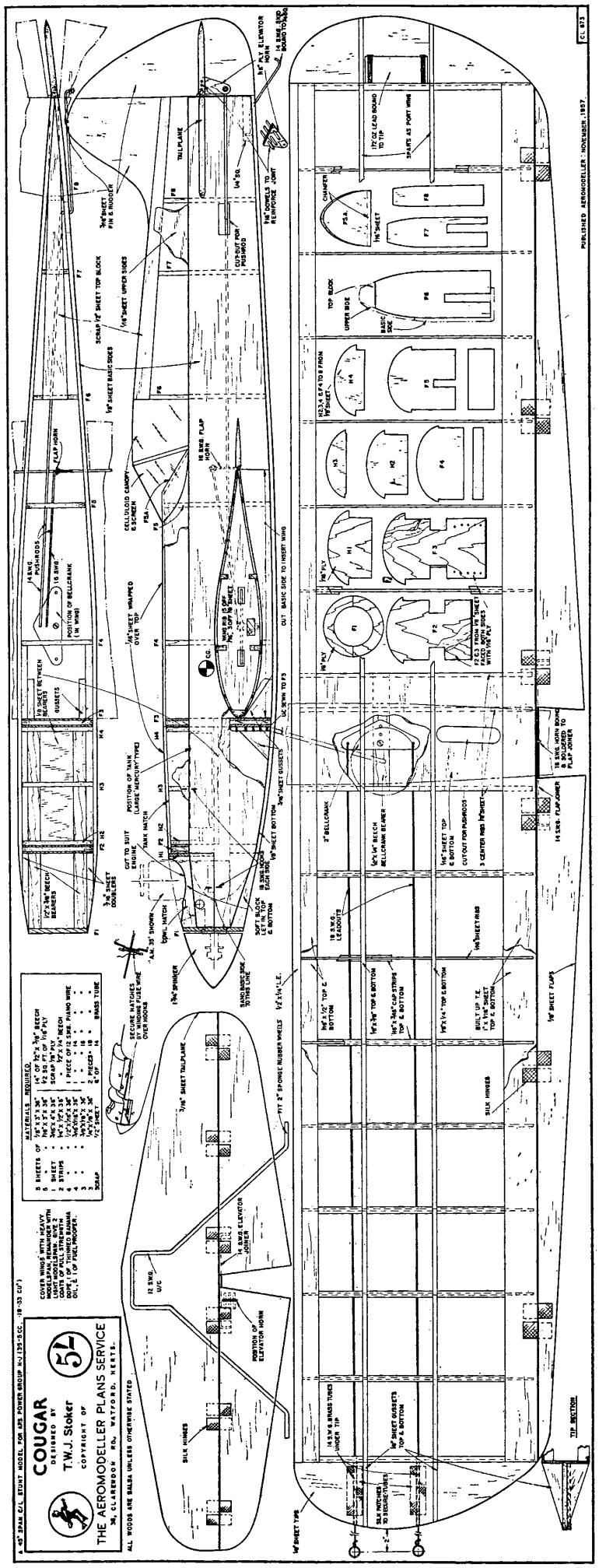
Our visit to Cockllebarrow. Dave Bell and David Turner From David Turner

A couple of years' back, I visited Cocklebarrow, in company of Dave Bell (photo attached) and my two spaniels. We camped ... Dave in his caravan; myself and the dogs in a tent.
Sunday morning dawned and I was up early, with the two dogs. Here's a little tale to relate of that Sunday morning; written at the time.
I've been chortling for days over this incident ... Last weekend, Dave and I went down to Cocklebarrow Farm for a vintage flying meet. He was in his caravan and I was sharing a tent with the two spaniels.
On Sunday morning, I popped into his caravan to find him boiling the kettle. I had the frying pan in my hand and I said to him, "David, let me have a drop of hot water so that I can clean this frying pan."
Well, it must have been the wrong thing to say, because he immediately adopted a bombastic attitude. He began to bluster, "Gimme that frying pan. You make far too much fuss, you old woman. It doesn't need washing, it's only got a bit o' grease on it ... anyway, I want to cook my breakfast in it."
With that, he grabbed the frying pan and barged me out of his way. Fair enough.
I watched him cook up his bacon and eggs and then tuck into them.
What I hadn't told him was the reason that I wanted to wash the frying pan. You see, I had just fed both the spaniels from it.

Some videos that might be of interest to vintage aficianados.
You can see some flying on Beverley' Westwood.
Models include O/Ds... Pee Wee Pal... Bandit... Topsy... Fox... Ivory Gull and a Dragonfly.
http://www.youtube.com/watch?v=eKhMMLmmXHg&list=UU4HLk42VM0CCjglQ2KPcYdA&index=6&feature=plcp
http://www.youtube.com/watch?v=Tzg0NTMVn2w&list=UU4HLk42VM0CCjglQ2KPcYdA&index=1&feature=plcp
http://www.youtube.com/watch?v=6YWYj4TNqkc&list=UU4HLk42VM0CCjglQ2KPcYdA&index=5&feature=plcp
http://www.youtube.com/watch?v=CUhQc6ErzxE&list=UU4HLk42VM0CCjglQ2KPcYdA&index=7&feature=plcp
David Turner in association with Dave Bell

Short Final Anecdote from Jim Newman

In the late 1950s, our Aero Club was changing over (NOT "transitioning", please) from Tiger Moths without radio... to "cabin class", with the addition of a Piper Tri-Pacer and a Cessna 172A, where the flights were made without headsets, by using the overhead speaker.
It came about that an Auster mark 5 (a British-built Taylorcraft), that we had been restoring, was due for test flying and our so Chief Flying Instructor decided the he must make the first flight.
The Auster duly taxied to the far edge of our all-over field, where it sat for five minutes, before returning to the tarmac. The CFI climbed out and stated that he could hardly hear the speaker, and added, "Please do not waste his time until it was fixed!"
Nothing was said..... We just pointed to the earphones hanging behind his head!



Cougar 45 in flapped stunter for 3.5 - 5 cc by T W J Stoker from Aero Modeller November 1957

COUGAR was designed specifically for flying in the 1956 Gold Trophy, but unfor tunately, fuel feed troubles did not allow it to show its full paces. Normally it flies extremely smoothly through the whole stunt schedule at 72 m.p.h. with a K & B 19 in the original. With a little modification the popular Frog 500 or any of the powerful 35 diesels and "19" glow engines would be ideal.

Begin construction with the wing. This is best tackled with the leading and trailing edges packed up. The lower spars and leading edge sheeting are cemented in place after removal from the board. Next the flaps are hinged on with nylon and the bellcrank assembly fitted. The flap push rod is connected and the elevator push rod is cut to the correct length and also fitted to the bellcrank. Lead-outs are heavy Laystrate, and are threaded through holes cut in the ribs and through tubes held in the inboard tip with nylon. Next the centre- section of the wing is sheeted with 1/16 in sheet, and all the ribs capped. Holes will have to be cut in the centre section sheeting to clear the push rod. Finally, 1 1/2 ounces of lead is cemented securely into the outboard tip. Note that the inboard wing panel is two inches longer than the outer panel.

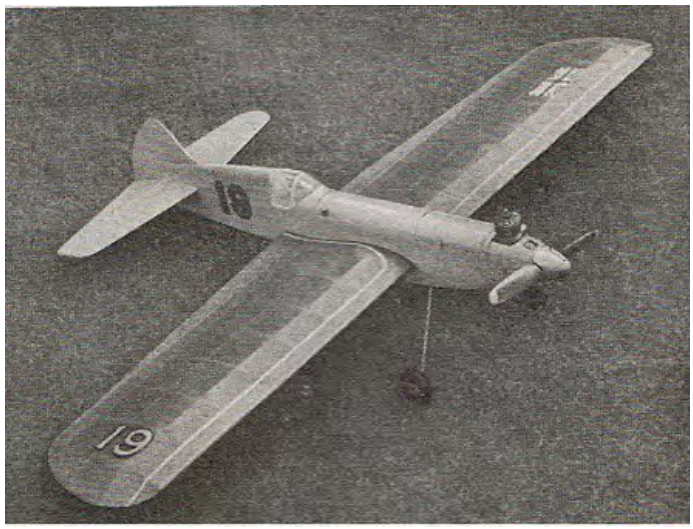
The 1/8-inch sheet fuselage sides and doublers are cut out first and the doublers cemented to the sides.

If a Frog 500 is being used, 1/16-inch ply doublers could be used to allow for the greater width of the Frog crankcase.

Bearers are next cut to length and cemented in place on F1 and F2. F1 should have been previously drilled for the tank feed pipe, and for the undercarriage, which should now be sewn in position and cemented. When this is set the whole assembly is cemented to the fuselage sides, which are drawn together at the tail end and cemented. Next, the rest of the formers are cemented in place.

The curved top in front of and behind the cockpit is of 1/16-inch sheet-soaked in water and then held in place with rubber bands until dry, when it can be cemented in place. The tank box is 1/16-inch sheet, and is made separately on formers H1, H2 and H3.

The wing is added to the fuselage by cutting away the sides immediately below the wing slots. The fuselage formers already have slots cut from the bottom to take the push rod, but the rear fuselage side below the elevator push rod hole will have to be cut away so that it can be accommodated.
When the wing is cemented in place the pieces cut away are replaced and securely cemented. The tailskid and fuselage bottom are now added.



Tail surfaces are now hinged together, the split elevators like the flaps, being joined by wire. The control horn is cemented in place, and the tail-plane slotted into the fuselage and cemented. The elevator push rod is then connected to the elevator horn.
Next, the fin is added and the cowling made from block or 1/2-inch sheet balsa. Both cowling and tank box are held in place with hooks, round which is wrapped fuse wire. The inside of the cockpit is painted (silver on the original) a dashboard and pilot fitted if desired, and a cockpit formed from two pieces of celluloid. Cockpit frames being unsightly, one was not used in the original, and it has not caved in after a full season's flying.
The fuselage and tail surfaces are covered with lightweight Modelspan doped on, and given as many coats of grain-filler as one can afford, sanding between coats. The wings are covered with heavy weight Modelspan, with' one coat of full-strength dope, followed by one of thinned banana oil.
Final finish is much improved by Aerolac. The original had the wing covered with red Modelspan, with a finish of red Aerolac. The rest of the model was pale blue, and the whole fuel-proofed.
Use 56 feet light Laystrate lines. Thinner lines can be used, and the length increased to over 60 feet, ìf desired. A final warning! Do not have the C.G. to the rear of that shown on the plan. The position indicated is perfect for full sensitivity and contest performance.
(This plan appeared in no 19 but at that time I was not including the Aeromodeller write up. Moving models around the other day I relocated my Cougar, powered by an OS25FPS, and thought this is a terrific model flies really nicely why haven't I used it for many years? I suppose we all do that. Spurred me on to include this month. My model was flown by Alan Jupp at the Cabbage Patch Nationals where he did very well in multiple competitions and became Cabbage Patch King. The main problem Alan found was the soldered links between flap and elevator so make sure all is silver soldered. JP)

Ace of Diamonds from Tony Tomlin

Having recently started to build the George Woolls designed Ace of Diamonds design Aeromodeller plan No. U704 published August 1958. Information from modellers who have built this unique design would be appreciated. My version is scaled at 1.75 _1.0 [63"span for R/C].
My main areas of concern are dihedral and rigging angles at the front and rear wings joint.
Tony Tomlin email pjt2.alt2@btinternet.com tel:02086413505

From Brian Austin

Saw the bit on Dave Platts "Skiffler" in part 2 of the 71 issue. This brought back memories of test flying the same on Wanstead Flats in 1956, I was 16 at the time and had just mastered CL flying, so I got to fly it a few times. Nice model it was to fly and beautifully finished in British Racing Green, as all Dave's models were. The original name was "Hienkel" but was changed by the mag to "Skiffler". This no doubt due to Dave at that time getting in to Skiffle music and the German connotations from the not long finished WW2
At about the same time he was to do the Mercury Marvin kit for Henry J, to compliment the AM10 that had just come out, at that time. Great times that seem so far off now and passed so quickly.
Quite a bit in the book that I have just done on Dave & others from that era. b_austin@talktalk.net

Cocklebarrow Farm R/C Vintage 7th October 2012 by Tony Tomlin.

On a lovely day, reminiscent of the halcyon days we fondly remember from our youth, 65 keen fliers gathered for the third, and final, Cocklebarrow R/C vintage event of 2012. The turnout, considering the weather of the previous week, was good with some fliers and friends coming long distances to this popular event. Ken Marsh, the West Essex flier, who is now 87 years young, and whom many will remember from his team race days in the 50s, had made the long journey from Essex to fly his Tomboy Senior. Another welcome visitor was Mike Wittard, the organiser of the Cocklebarrow Farm events before Val and Paul Howkins took over the running some 23 years ago!

There was an interesting selection of models with the flight line always busy. Many Vic Smeed designs were to be seen with a PAAge Boy, Electra, Coquette, Double Delta and around 24 Tomboys, in both 36" and 48" versions, most of which were to be flown in the last round of this years Tomboy R/C competition. Mervyn Tilbury, as always had an interesting collection of models, his Delta 707 and Skyray being very impressive in flight. A pair of Super Scorpions were often flown, the version by Ray Goodenough looking very smart. Of the larger models, Barrie Finneren had his Scram, Dave Dobson was flying a Spook and Nick Skyrme was flying one of the two Falcons.

Possibly one of the most interesting engine/model combinations there, was a 96" span, open pylon old timer brought along and flown by John Strutt. The model had not flown for 20+ years was designed and built by Ken Grant, a long time pal of the late David Boddington. It was fitted with a 5cc diesel that Ken had built from scratch to his own design. This was a front induction throttled engine with the basic crankcase machined from a ¾" iron gas tee fitting. The exhaust stacks were rather like the original ED MKII but 2-3 times longer. The engine, after a couple of minutes ground running to warm up, ran well with an exhaust crackle sounding very much like a petrol engine.

Tomboy 3 Competition

There were 12 entries for this final event of 2012. All had flown in previous Tomboy 3 events and all made the required two, 4 + minutes, preliminary flights to join the mass launch flyoff. As at the last Cocklebarrow event, there was a maximum flight time of 10 minutes, with time penalties for overrunning, this was done in fairness to the many sport fliers at this particular venue. Nick Skyrme, assisted by Mervyn Tibury, were the starters/master timekeepers, [thank you both]. As the start board was lowered, all models got away cleanly.

Out of luck were Derek Etheridge, Ted Tomlin and Steve Roberts, all unable to gain height and landing in under three minutes. Bob Young was next down, spot on 5 minutes, followed by Brian Brundell a few seconds later. With the exception of Stephen Powell, who was out of lift and swiftly descending, the others had all climbed to an estimated 800 feet and were all in close company. The fliers concentrated hard on their models as it was so easy to inadvertently try and fly the wrong model! Sadly, after flying well, James Collis found a hole in the air and was down with just short of 90 seconds remaining on the master time keeper's watch.

At this point the 'high fliers' started to make their descent to try and land on exactly 10 minutes, with the models, in some cases, line astern as the seconds ticked away. Jeff Fellows, last years league winner, was off form and landed with a little under a minute left on the watch. Brian Ball whistled down to land smoothly with 21 seconds left, with John Strutt in 3rd place, 8 seconds after. Tom Airey and Tony Tomlin landed nearly side by side with Tony holding off an extra 2 seconds to land 3 seconds short of the target time to win an exciting flyoff.

1	Tony Tomlin	9min 57secs
2	Tom Airey	9min 55secs
3	John Strutt	9min 47secs
4	Brian Ball	9min 39secs
5	Jeff Fellows	9min 03secs
6	James Collis	8min 38secs
7	Stephen Powell	7min 30secs
8	Brian Brundell	5min 12secs
9	Bob Young	5min
10	Steve Roberts	2min 52secs
11	Ted Tomlin	2min 50secs
12	Derek Etheridge	1min 29secs

Tomboy Senior Competition

The larger Tomboy Senior Class, [48" span Mills 1.3], had 12 entries, with Jim Pool flying in this event for the first time and Ken Marsh having his second try at Cocklebarrow Farm. The 10 minute format was again used and as the start board fell, 10 models climbed swiftly away. Barrie Collis was grounded by a flooded engine and Ken Marsh was in trouble as,

after cutting his hand whilst starting, he wisely curtailed his flight. There was a good deal of lift available and, when their engines cut, all the other models were at eye straining height. The minutes slowly ticked away until Ted Tomlin, Jim Pool and Derek Collin, who had lost the lift, all landed a little after 8 minutes. The remaining models were close and, as the wind had dropped to almost nothing were just literally floating in large circles, not losing height. Very quickly the situation changed, as the fliers, mindful of the 10 minutes rule, were now pushing their models downwards all trying to land spot on 10 minutes, causing a lot of excitement to the many spectators. First to land was Colin Shepherd, 17seconds short of the target time, followed by Andrew Fellows, 8 seconds adrift. John Strutt and Brian Ball were 1 second short and Tony Tomlin and Tom Airey were exactly on 10 minutes. Stephen Powell was just 1 second over the target time and collected a five second penalty. As this unusual situation had not occurred before, with two fliers tying for 1st position, and two tying for 2nd position, it was decided to have a flyoff to enable the final position to be arrived at.

Results

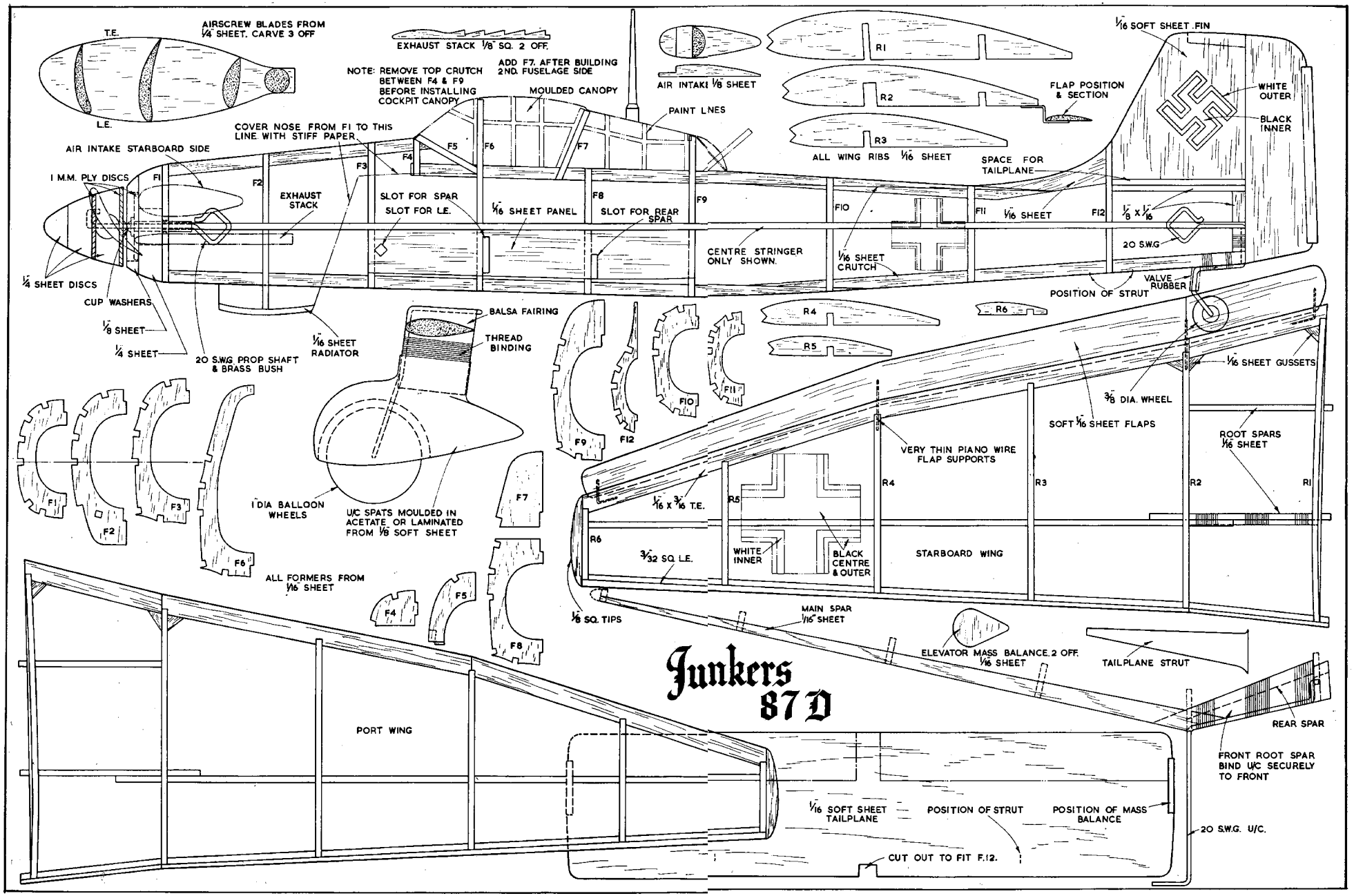
1	Tom Airey	10min 00sec - Flyoff 9min 11secs
2	Tony Tomlin	10min 00secs - Flyoff 5min
3	John Strutt	9min 59secs - Flyoff 9min 37secs
4	Brian Ball	9min 59secs - Flyoff 7min 8secs
5	Stephen Powell	9min 55secs
6	Andrews Fellows	9mins 52secs
7	Colin Shepherd	9mins 43secs
8	Derek Collin	8mins 30secs
9	Ted Tomlin	8mins 25secs
10	Jim Pool	8mins 17secs
11	Ken Marsh	30 secs
12	Barrie Collis	Non Start

Val Howkins presented prizes for the Tomboy events and also Tom Airey was presented with a 'Boddo Mills' 1.3 for winning both the league awards for the Tomboy 3 and Senior classes. This was based as before on a competitors best results on 5 of the 10 planned events. Another award of a 'Boddo' Mills.75 was presented to young James Collis who it was felt had flown with maturity and consistancy throughout the year. Both engines have been generously donated by the Boddingon Family in memory Of David Boddington the originator of the Tomboy competitions. Our thanks to them for their continued interest and support.

Place	Tomboy 3	Points	Tomboy Senior	Points
1	Tom Airey	45	Tom Airey	39
2	John Strutt	37	John Strutt	36
3	Tony Tomlin	36	Tony Tomlin	25
4	Bob Young	27	Peter Rose	24
5	James Collis	23	Barrie Collis	20
6	Paul Netton	21	Stephen Powell	16
7	Stephen Powell / Brian Ball	20	Andrew Fellows	15
8	Jeff Fellows	16	Brian Ball	12
9	Chris Hague	15	Ted Tomlin	11
10	Steve Roberts	14	Chris Bishop	10
11	Chris Bishop	12	Derek Collin / Chris Hague	9
12	John Taylor / Derek Giles	10	Chris Giles	6
13	Brian Brundell	9	Jim Pool /Tony Overton	3
14	Ted Tomlin	7	Ken Marsh / Bill Longley	1
15	Derek Etheridge	5		
16	Derek Collin	4		
17	Richard Farrer	1		

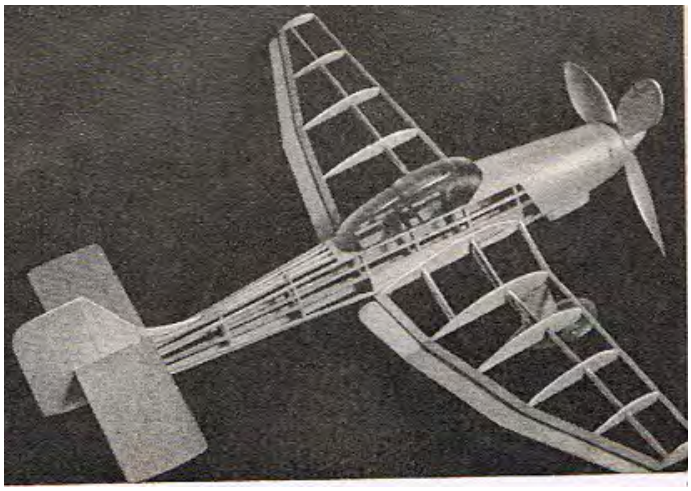

Team Fellowes

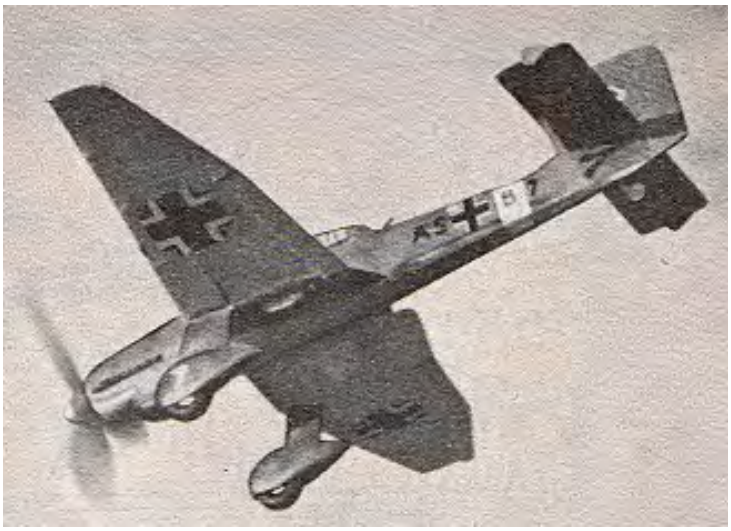

James Collis with Tom Airey


Junkers 87D
AIRSCREW BLADES FROM 1/4" SHEET. CARVE 3 OFF
T.E.
L.E.
EXHAUST STACK 1/8" SQ. 2 OFF.
NOTE: REMOVE TOP CRUTCH BETWEEN F4 & F9 BEFORE INSTALLING COCKPIT CANOPY
ADD F7. AFTER BUILDING 2ND. FUSELAGE SIDE
MOULDED CANOPY
AIR INTAKE 1/8" SHEET
PAINT LINES
R1
R2
R3
ALL WING RIBS 1/16" SHEET
FLAP POSITION & SECTION
1/16 SOFT SHEET FIN
WHITE OUTER
BLACK INNER
COVER NOSE FROM F1 TO THIS LINE WITH STIFF PAPER
AIR INTAKE STARBOARD SIDE
1 M.M. PLY DISCS
F1
F2
F3
F4
F5
F6
F7
F8
F9
F10
F11
F12
EXHAUST STACK
SLOT FOR SPAR
SLOT FOR L.E.
1/16" SHEET PANEL
SLOT FOR REAR SPAR
CENTRE STRINGER ONLY SHOWN.
1/16" SHEET CRUTCH
1/16" SHEET
1/8" x 1/16"
20 S.W.G
SPACE FOR TAILPLANE
VALVE RUBBER
POSITION OF STRUT
1/4" SHEET DISCS
CUP WASHERS
1/8" SHEET
1/4" SHEET
20 S.W.G PROP SHAFT & BRASS BUSH
1/16" SHEET RADIATOR
BALSA FAIRING
THREAD BINDING
R4
R5
R6
1/16" SHEET GUSSETS
3/8" DIA. WHEEL
SOFT 1/16" SHEET FLAPS
VERY THIN PIANO WIRE FLAP SUPPORTS
ROOT SPARS 1/16" SHEET
1" DIA BALLOON WHEELS
U/C SPATS MOULDED IN ACETATE OR LAMINATED FROM 1/8" SOFT SHEET
1/16" x 3/16" T.E.
3/32" SQ. L.E.
WHITE INNER
BLACK CENTRE & OUTER
STARBOARD WING
ALL FORMERS FROM 1/16" SHEET
1/8" SQ. TIPS
MAIN SPAR 1/16" SHEET
ELEVATOR MASS BALANCE. 2 OFF. 1/16" SHEET
TAILPLANE STRUT
REAR SPAR
FRONT ROOT SPAR BIND U/C SECURELY TO FRONT
PORT WING
1/16" SOFT SHEET TAILPLANE
POSITION OF STRUT
POSITION OF MASS BALANCE
20 S.W.G. U/C.
CUT OUT TO FIT F.12.

Junkers Ju87D By J. McHARD A 17-inch span rubber driven F/Scale Model as on the cover. Aero Modeller September 1957

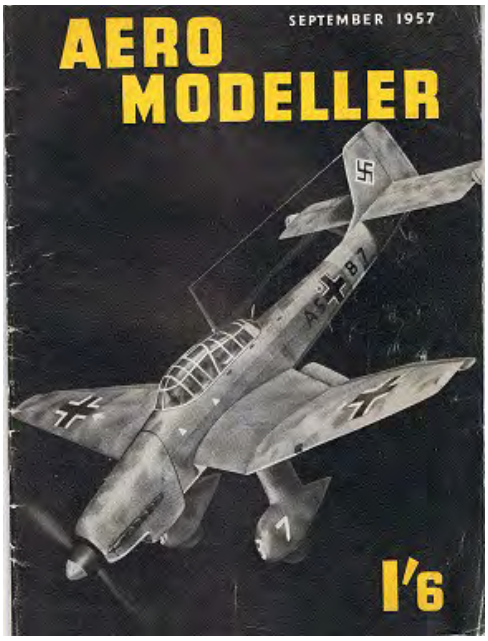
Also available as a 34' span .5 c.c. F/Flight power model and 2.5 c.c. Control line scale model.
During research for the drawings for this month's Aeroplane in Outline, the author became fascinated by the possibility of producing a flying model of the Ju.87D. A diesel powered model was envisaged, but owing to the lack of time and desire to reassure himself of the feasibility of the type as a flying model, a small rubber powered model was first produced. This flew so well that it is here presented as a full size plan. For those who would like to make an enlarged (twice-size) power driven version, die-line prints of a 34 in. span design are also available, price 5/- from A.P.S.
First remove the plan pages from the magazine and cover with thin greaseproof paper and begin con struction with the fuselage. Lay down with 1/8 in. x1/16 in keels and to them cement the left hand halves of the formers except F.7, which is added later. Make sure these are quite upright and add the 1/16 in. square stringers. Fill in between the stringers at the wing root with 1/16 in. sheet and cut the slots for the mainspars and wing leading edge. When thoroughly dry remove this assembly from the plan and bind on the tailwheel strut and rear rubber anchorage hook. Repeat the procedure for the starboard side, cementing formers to left fuselage side. Add stringers and former F.7. Add the noseblock and bend some soft , 1/16 in. sheet around the underside of former F.2, to form the radiator. Cover the nose with cartridge paper as shown in photo of uncovered framework.
Make two wing mainspars from firm 1/16 in. sheet as shown in front view. Don't forget to make one left and one right-hand spar, the root spar being cemented behind the outer spar. Lay the outer spars on the plan and build up the wings from tip to ribs R.2. Note angle of R.2 on spar front view. When dry arrange the root spars flat on the plan with the already assembled parts of wings sticking up in the air, and add the ribs Rl, making certain they are at the correct angle to the spar. Complete the wing by adding root leading and trailing edges and 1/16 in. sheet fillets where indicated. Bend undercarriage wire, one left and one righthand and bind to root spar, cement well. Add wheels. Build up spats from soft sheet laminations and cement and bind to undercarriage wire. Do not cement the undercarriage legs to rib R.2, they must be allowed to travel backwards on impact with the ground to absorb the landing loads. Make up the flaps from 1/16 in. sheet and attach to wing T.E. at the four points shown with thin wire supports (short pieces of control line wire are ideal), cement well. The flaps should be carefully aligned and be about 3/32in. below the wing trailing edge. Cement wings in position so that when sighted, along the wing from tip to tip, the tips come level with the lower edge of the cockpit cover. Make sure the incidence is exactly the same on both wings.





The cockpit cover may be moulded from thin acetate sheet by any of the methoda which have been frequently deacribed in AEROMOnELLER. Alternatively, it may be made up in sections between the formers without too great a loss in realism.
Make up the prop by carving three blades from 1/4 in. sheet balsa as shown on the plan. Build up the spinner

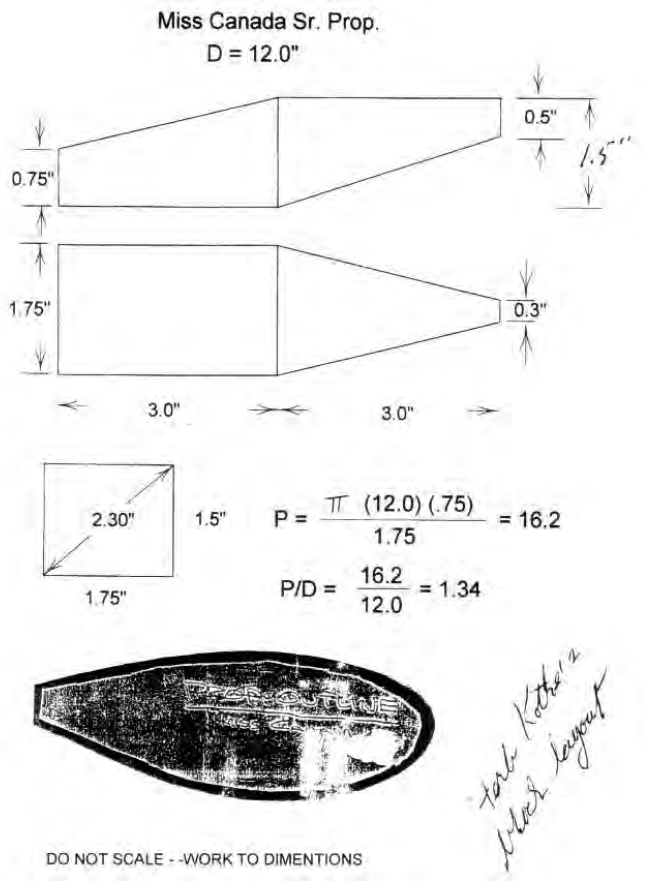
laminations and carefully position three 1/4 in. diameter holes equidistantly around the rear 1/4in. balsa lamination. Cement the blade roots well and carefully position them at the angle shown in the side view.



A 5in. commercial plastic prop could be used, but a certain amount of realism and performance are sacrificed.
The tailplane is simply cut from soft 1/16in. sheet balsa and cemented in place. Exhausts and air intake are cut from scrap balsa and positioned as shown on the plan.
Cover with lightweight Modelspan and give one coat of clear and one of coloured dope. The colour schemes are detailed on the detailed scale plan. Apply transfers as shown on the cover photograph.
One loop (two strands) of 1/4 in. flat rubber will be sufficient to fly the model provided you have kept the weight to a minimum, by selecting your balsa carefully and doping lightly. Balance at wing main spar. Add weights to nose or tail if necessary to achieve this. When a straight level glide is obtained apply 50 turns and gently launch level at the model's flying speed. If a stall results, pack the top of the nose bearing out to tilt the prop down slightly. If the model turns sharply left, adjust the bearing to point slightly right and vice versa.

From Karl Gies PROP CARVING NOTES

Tools:
I have used different types of knives over the years but have settled on the inexpensive snap off blade knives found at any hardware store. They come in two sizes, 18mm and 9mm, and these are the type where the blade slides out. Get both sizes. The small one is handy for tight spots and small props. I have never had a part of segmented blade snap off on balsa. They are razor sharp and the blades flex which is handy when carving under camber into the backs of the prop. The replacement blades are cheap, but by using a steel and occasionally by using a stone and razor strop the blades last me a long time. When I want the blade to be stiff I do not slide it out all the way. There are many different brands, the ones I have now are Stanley.
Update: My favorite is a brand called "Olfa" and I bought one online at www.olfaproducts.com.
A drill press to drill the propeller shaft hole and nose block hole is an absolute must. A bandsaw is indispensable in cutting out prop blocks. Delta makes a good, small 9" bandsaw that has a light on it. It sellsat Ace Hardware locally for $140.00, but I have seen it in discount catalogs as low as $110.00. I have foundit quite helpful to score the lines drawn on the prop block and the band saw blade tends to follow these scored lines much better. My bandsaw came very poorly adjusted. Use the manual and go through and make the proper adjustments before using.



I use a small square, torpedo level (small as you can get), a straight edge and of course sandpaper. For getting the same camber in the backs of both blades I use sandpaper wrapped around a CA Kicker

(accelerator) bottle, it has a diameter of about 1 1/8”. Anything from say one inch to one and half inches will do.

Carving:

Start with a small prop say 8” in diameter so you don’t waste a lot of wood if you mess it up.
I have gone more and more to laminating sheet balsa to make my prop blocks.

Always carve the backs of the prop blades first and only carve to about 3/32” or 1/8” from the diagonal reference line drawn on the end of each block. These reference lines are an absolute must but be sure you get them the right direction or you will have a reverse pitch prop. FINISH the backs of the blades entirely before carving the blade fronts. If you play around with the backs after carving the fronts you will change the pitch of the prop.

Pitch is important. Why is pitch important? Most vintage rubber models and rubber scale models were not designed to handle a lot of torque. The rubber way back then did not have a lot of torque compared to the rubber we use today. A low pitch prop does not take much of a bite and rpm’s at high speed with a lot of accompanying torque. This is why I do not like plastic props. Most of them are low pitch props except for the Gizmo Geezer props and these are repitched Peck Props in 8” and 9.5”. They are repitched to a 1.25 p/d ratio. I have enclosed an article on prop pitch for you to read by Fernando Ramos. (this in here from a message I sent to someone. If anyone has Fernando's excellent article in MB in regards to prop pitch would you please scan it and post it. I do not have a scanner.) Until the 1960’s rubber did not have a lot of torque in it. You could wind to breaking point but it still did not have a lot of torque.

Most vintage and scale rubber models need a prop with at least a 1.25 p/d ratio. Most vintage models do their best on a prop with around a 1.37 p/d ratio.The formula for p/d ratio is simple. Multiply the diameter of the prop times pi times the depth at the tip. Take this number and divide it by the width of the blade and divide that result by the diameter. For example, a prop blank 12” long by 1 1/2” wide with the tip depth of . 75 would work out as follows: 12 times 3.14 x .75 = 28.26. 28.26 divided by 1.5 = 18.84 and this is the pitch of the prop. The pitch of 18.84 divided by 12 = 1.57 and this number is the p/d ratio, 1.57.

Now take the bottle with sandpaper wrapped around it and start sanding away. I hold the bottle at a slight angle away from me and sand forward. Every now and then check the tip and see if you are close to the reference line. I also use a straight edge pulling it on the back of the prop from the tip towards the hub to check the under camber. Adjusting the angle you hold the bottle at when sanding will increase or decrease the amount of undercamber. When you are close, start using finer sandpaper until it is at the line. Do not sand past the the diagonal line you marked on the block tip.

Turn the blank over and carve off the front of the blade, which is easier to do. Again do not carve past a felt tip line drawn about 1/8" back on the leading edge. This will be sanded down to and airfoil shape. Look often at the end of the prop blade (and you might draw an airfoil on the tip as a guide), you want an airfoilshape. Don’t carve it too thin, coarse sandpaper is a much safer course to take here.

After you have the blade pretty well finished, take a soft tip pen and draw the shape you want on one blade. Use a finished prop for a guide. Use a sharp knife and cut this away. Now finish sanding the prop, thinning the tips of the blades. Feel a finished prop blade as a guide on how much to sand. When this blade is finished place it on a piece of paper or thin cardboard (like the cardboard that comes in t shirts) and transfer this shape to the other blade.

Next I sand or cut the hub material away from the back of the prop using a larger bottle with sandpaper wrapped around just like Carlos does in the video. Some articles show the prop blank with this hub area sawed out before the prop is carved. Do not do this because you will not get the proper helix in the blade. After doing this you will have to do some shaving and sanding in this area to get it to final shape, just keep looking at a finished prop as a guide. If it does not look like a prop get rid of it. A good guide to go by is go slow and use sandpaper for the final shaping. I carve my prop blades very thin as they are more efficient. See below how I finish them.

When you are sanding to a finish check the balance by slipping a piece of wire or pin in the prop shaft hole to see how the prop balances. Often times one of the blades is much harder balsa than the other blade so you cannot sand it to final balance. Having each blade the same thickness is more important here. I get it to final balance when I dope it. I like to give a prop several thinned down (50/50) coats of dope,sanding with fine sandpaper in between coats and finally doping with extra coats on the lighter blade to balance it out. If one blade is much too heavy for dopiing the other to balance I use the golf club tape, sort of a foil w/sticky backing to balance, placing it on the back of the light blade. The golf pro up at the local course gave it to me.

Don't give up if you blotch it, keep trying and learn from your mistakes. If you mess something up study a finished prop and look over these directions and tips agaon. Once you get the hang of it go on a binge and carve several props, practice, practice, practice.

On prop shaft holes, you can bush them, but plates on the front and back of the prop hubs on the finished prop are the way to go. It is hard to bush a prop shaft and make it really true. When you drill the prop shaft hole drill it one size up from the size of music wire you are going to use for your prop shaft. I use aluminum on small props but on larger props I use brass sheet.

Just do some measuring, cut a piece of metal rectangle, trim one end to make the latch if you are using a free wheeler that is not tensioned and be sure to make the latch in the right direction finished prop and bend the latch end up Use a round file to make a small notch in it. This is a great way to make a non-tensioned free wheeler. It is safer than the swinging latch method and easier to make.This kind of free wheeler automatically locks the prop and is the safest. It is commonly called the "latch" free wheeler.

Caution, when you make the front and rear metal hub plates, first glue the back one on, I use model cement or epoxy. Rough up the metal surface to be glued with rough sandpaper for a better gluing surface. Pre glue it and then glue it again. After the rear plate is on and the glue dry, make some triangles, 30 degree for small props, 45 degree for larger and place them on a soft board with the the backs of the blades positioned so that the the triangles are in the same position on each blade completely touching the back of the blades. This is a jig to hold the prop that it is totally level across the top. Now place the front plate with glue on the hub over the hole and while it is drying take a short piece of music write, long enough so that it will stick up in the air three or four inches and place it in the prop shaft hole. At this point you will still be able to reposition this front hub plate. Use your eye to make sure the wire is exactly perpendicular to the length of the prop and check it with a torpedo level to make sure it is true in both planes, that is looking down the length of the prop (parallel) and perpendicular to the prop. Once you have achieved this leave the prop in the jig until the glued plate is dry. You want a smooth running prop and can only get this by first having the prop balanced and prop shaft in a true, straight through position and not off on an angle. I can achieve this with my eye, but a level is a good check.

Back to prop pitch. I have a small sport rubber model called the "The Island Flyer" which is kitted by R/N Models. I think Penn Valley kits it now. I was out flying it with Clarence Mather, who was on the U.S. Indoor team twice and winner of many rubber events, indoor and outdoor. Clarence used to come up to Montana and fly fish with me. We were out flying and I told him how hard it was to control the "The Island Flyerr" when it was first released. He watched it then looked it over and said the prop had too low of a pitch. He explained that the initial torque was too much for the model to handle. I carved a higher pitch prop and it just transformed the model. I had the same thing happen with a "Miss Canada Senior" which is a terrific model but somewhat squirrelly in the initial power burst and climb. I carved a higher pitch prop from the block layout Herb Kothe gave me, took it to the SAM Champs in '99 and placed third in Commercial Rubber with it.

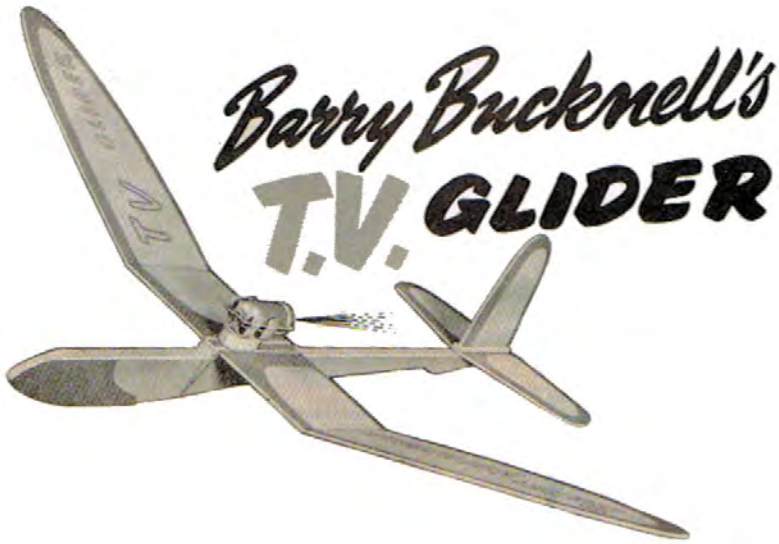
I have gone to covering all my props with light fiber glass cloth and use Z-Poxy Finishing resin, "PT-40" to adhere the fiberglass cloth. The Z-Poxy Finishing Resin has excellent instructions on the box on how to fiberglass things. Before using the fiber glass cloth it must be sized or it is a nightmare to use. Cut off a big hunk of it and hang from a wire clothes hanger or something and spray it with rattle can laquer (I use the cheapest Ace brand) or your wife's hair spray. I add color to the finished prop with Michael's Design Master Floral Spray and dust if off with Krylon clear. This adds very little weight to the prop. I make my prop blades very thin and find that they work better. The cloth and z-poxy add to the prop blades stiffness and durability.

Again, quoting the DannySoar site, the worst prop you carve will probably be better than any plastic prop you ever buy.

Dannysoar's Prop Carving instructions are excellent and here is the site again:

http://www.gryffinaero.com/models/ffpages/tips/propcarve.html

This is an insanely great hobby



From Tom Miller

Can you put me in contact with George Fuller or someone with equal knowledge of Dixielanders?I've built and flown them in different sizes and have not had the problem that I have with this one.This is the full size one that does not want to cooperate. It has a nice fast climb at 70-80 degrees with a slight roll to the right. That's OK, but the instant the engine stops the model goes into a fast, straight as an arrow 45degree dive and hits the ground hard. Here in Arizona, the ground(desert) is like cement, so something breaks. I've tried all the tricks I know but to no avail. The engine is an OS Max .19, the CG is right on the spot shown on the plans, the wing incidence is right per the plans and the trailing edge of the stab is up slightly. I 've found that I must raise the stab on all the Dixies to get a good climb. No one here has an answer so I,m hoping someone in your group can offer some advice.

I forgot to mention that the stab tilt is as shown, parralell with the inner wing panel.

Thank you,

tmiller80@cox.net

Anecdote from Harry Witney

Hi James, have been unable to condense my stories about time as an apprentice st Salisbury Hail but will be able to provide stories about one or two particular incidents, if that is any help.

Mid 1945- The Apprentice school was asked to provide a featurre as part of the annual open day. One of the instructors had a M/Cyclc combination, 500cc single, with the sidecar made from a Mosquito drop tank, which upside down on the chassis and with a hole cutin it and a seat and windscreen, made a very respectable sporty outfit.

The plan was to set it up and do a presentation on the display field “Under radio control”. A cover was made to put over the “cockpit” with a tower built on it which was to represent the receiving end and suitably impressive arials, flashing lightsand other *technical items* such as a T bar, 18 in acrosswith cables connecting to the handlebars via two pulleys on a bracket mounted on the pillion seat. Fairly well concealed were a throttle cable and clutch cable connected to a similar T Bar inside.

The transmitter was installed inside a small l leather suitcase with an impressive array of dials, switches, valves and flashing lights plus an aerial to complete the set up. held in front of the operator via a neck strap.

Before trials began the smallest apprentice was “requested” to conceal himself inside the sidecar, lying on his back and viewing the outside world through a periscope concealed in the lower display.

Trials went well around the Salisbury Hall hangars and the whole set up appeared as scheduled on the day. Announcement was made, the bike started and put into gear by an “engineer” who then stepped off. The outfit set off cautiously onto the field carried out the complete display under Radio control and after a round of applause set off out of the arena.

Very few people thankfully, heard the exclamation “Oh s**t” thevery hot and perspiring apprentice hit the gatepost on the way out.

More photos from Switzerland courtesy of Peter Renggli and Urs Brand

Riedstern 1941

Haslach GM 1951

Tomboy 1950


BE - 59


HB-FCF


DER HALB COM. STARKE
KNILCH
BE - 59


1941


TAXI


TAXI

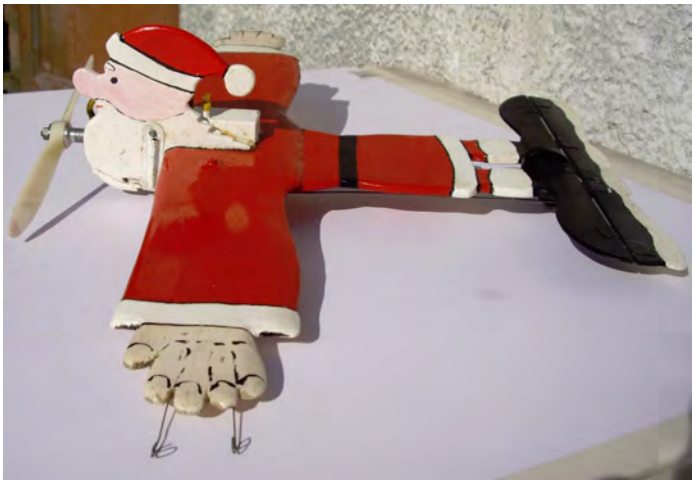

RCCA

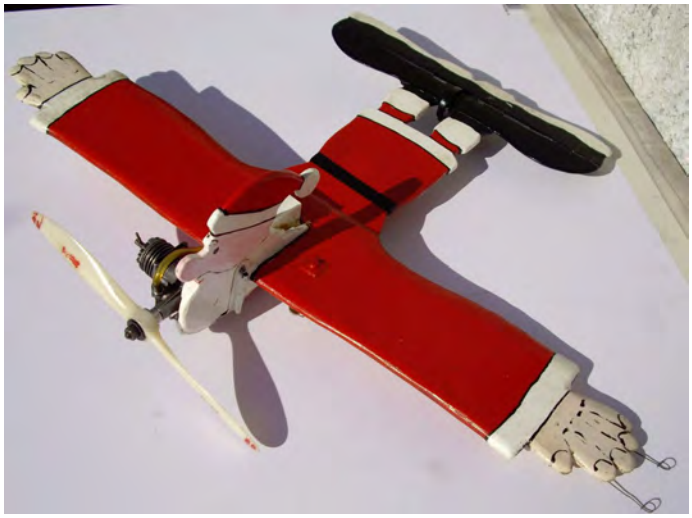
From Bill Wells

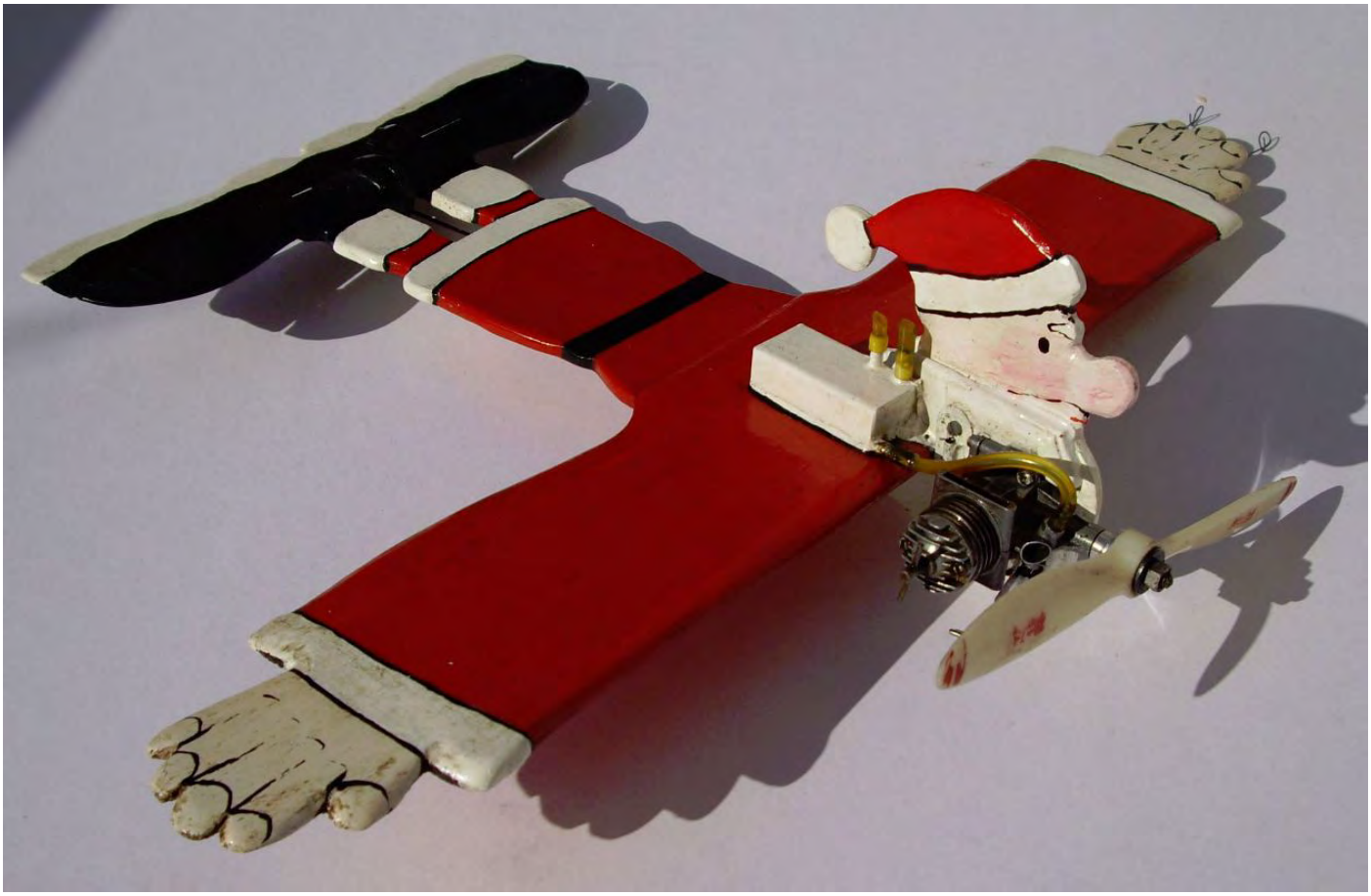
This month I thought a look a novelty models might make a change. Firstly what is the point of them? I suppose it is a change from scale, stunt, team racers, combat or a sport model that makes them appealing or just to see if you can get them to fly! The first of these I built was the Space Patrol Craft from the Eagle Book of Spacecraft Models by Ray Malmström published in 1960 price (42½ P). Quite a bit of money in those days! Anyway this was one of my early models and my success with it was nil. A friend made one and that sort of flew. I powered mine with a DC Merlin but it was uncontrollable in pitch. So I substantially reduced the area of the elevator by cutting ends off of it, the result of this was no control in pitch so the model was shelved by the mid 1960s to re-emerge in 2003. I modified the model to accept a drop off undercarriage borrowed from another model. The model squirreled around on the ground wrecking lines and showed no desire to get airborne. So I remade a full width elevator which showed some promise but I crashed the model when it flew into the circle. During the replacement of the engine bearers I put loads side thrust on and replaced the Merlin with a Frog 100. The side thrust is so great the model tries to crab sideways out of the circle on take off and can trip up on the right wheel. To stop this I just let it start the run by easing off the line tension for the first few feet then the take off is normal. The model flies with a pronounced outer wing down caused by the engine off set. Speeds range from 32.4 to 42.8 mph.

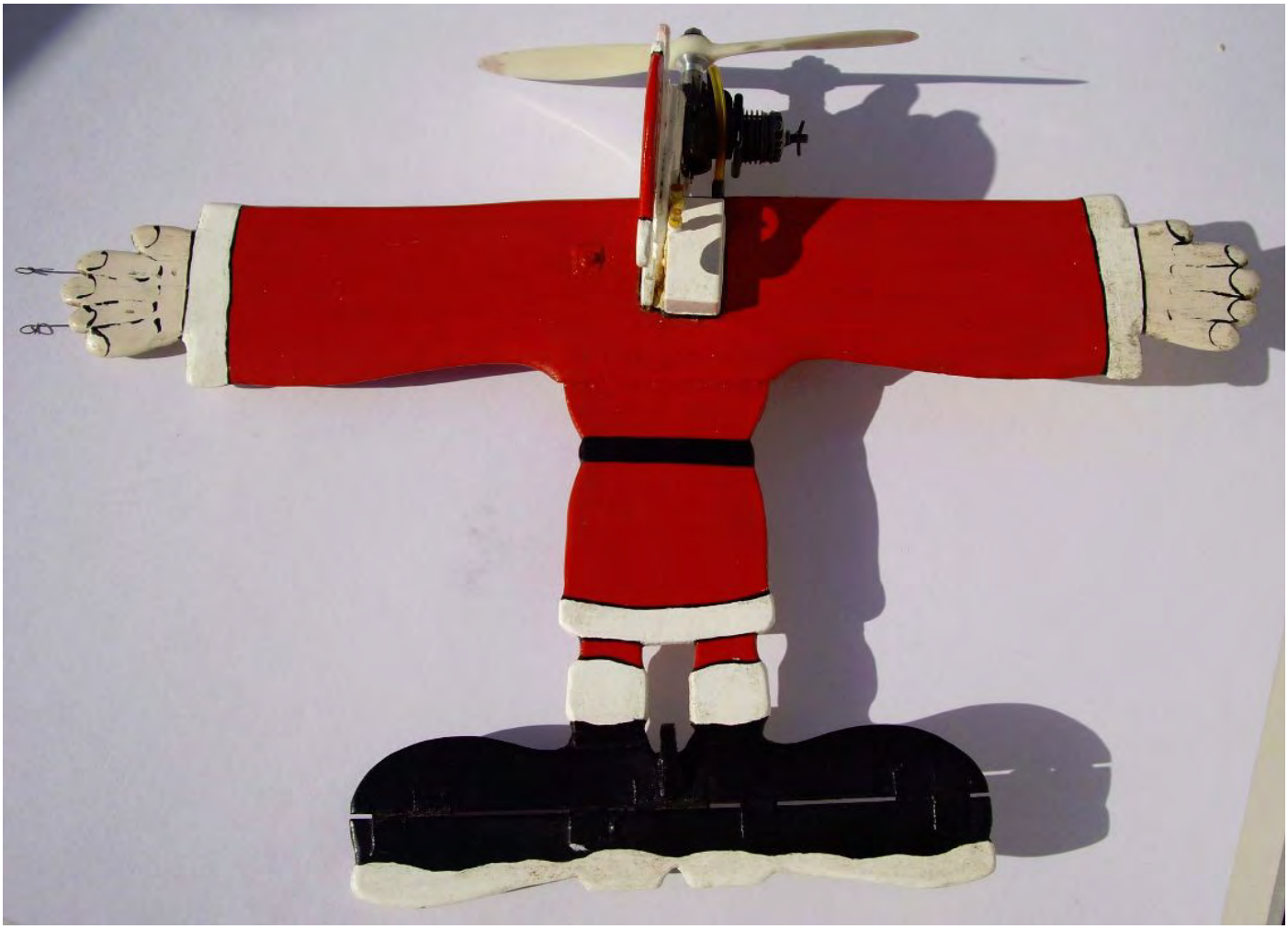
My other quirky model was the Centrifugal Santa a Freebie plan in Aeromodeller for January 1960. This model has quite a bit of engine offset and flies well on 25 or in calm conditions 35 foot lines. My model is powered by a Frog 80 which in the very cold December weather has been known to be very reluctant to start. During these reluctant starts Santa's head usually breaks off. Although the model will fly without the head part, it sort of ruins the idea of a Flying Santa. So this is tip one, should you make a Centrifugal Santa (for the kids of course) laminate a piece of plywood with hard balsa to construct the head. I used a piece of 2mm 5 ply which very effectively stopped any further breakages. Tip two is for self launching using a light weight drop off undercarriage. I wrapped a piece of tin plate around the fuselage having soldered a brass tube either side to support undercarriage wires. In view of my troubles starting a small diesel in the cold a small glow plug engine might be easier to start. Speed ranges from 28.3 to 37.5 mph

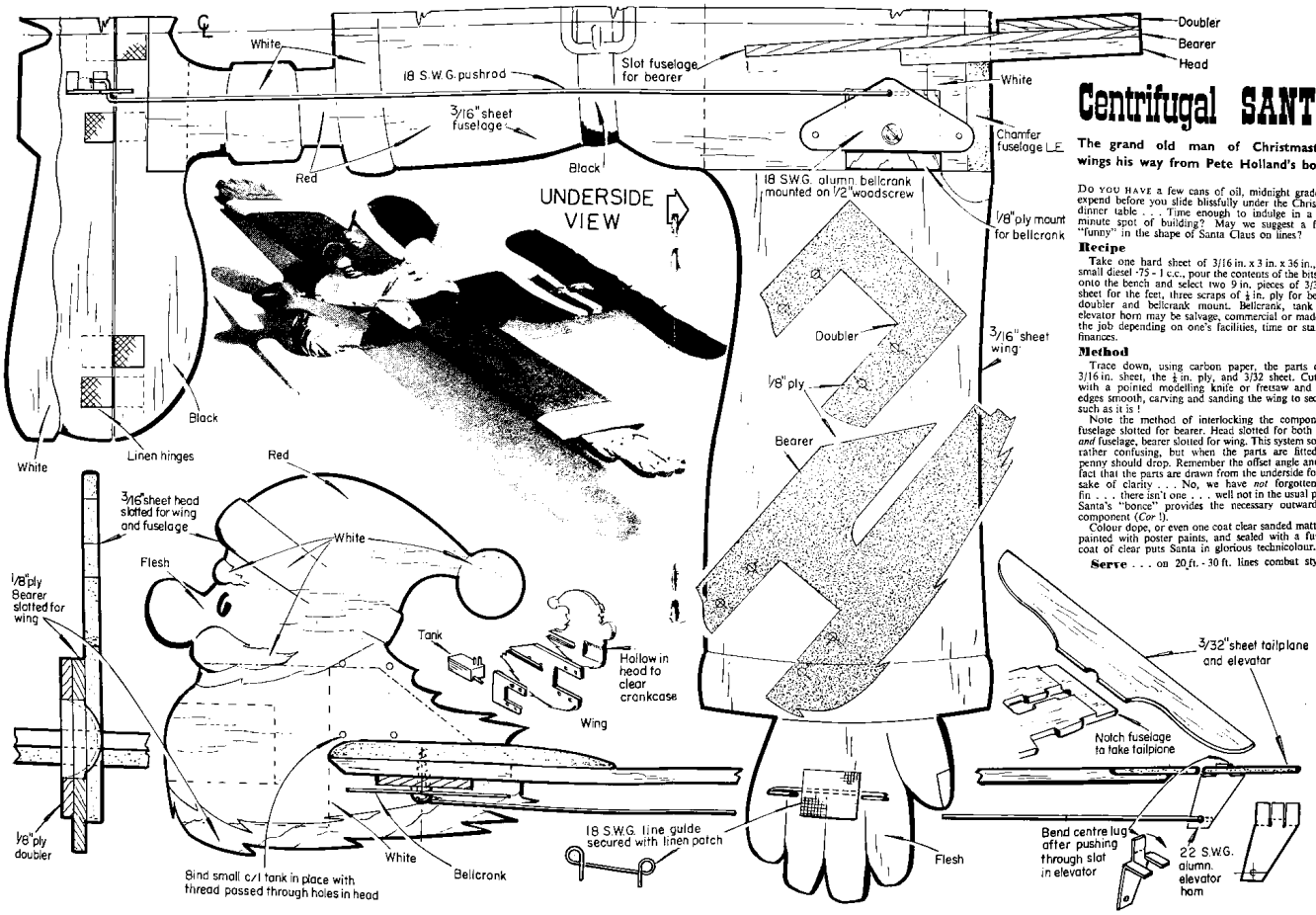
P.S Even more pictures this month but better to have a choice than not. One of the reasons I like Sticks and Tissues is to see pictures of other peoples models.











Centrifugal SANTA

The grand old man of Christmastide wings his way from Pete Holland's board

DO YOU HAVE a few cans of oil, midnight grade, to expend before you slide blissfully under the Christmas dinner table . . . Time enough to indulge in a last-minute spot of building? May we suggest a flying "funny" in the shape of Santa Claus on lines?

Recipe

Take one hard sheet of 3/16 in. x 3 in. x 36 in., one small diesel ·75 - 1 c.c., pour the contents of the bits box onto the bench and select two 9 in. pieces of 3/32 in. sheet for the feet, three scraps of ¼ in. ply for bearer, doubler and bellcrank mount. Bellcrank, tank and elevator horn may be salvage, commercial or made for the job depending on one's facilities, time or state of finances.

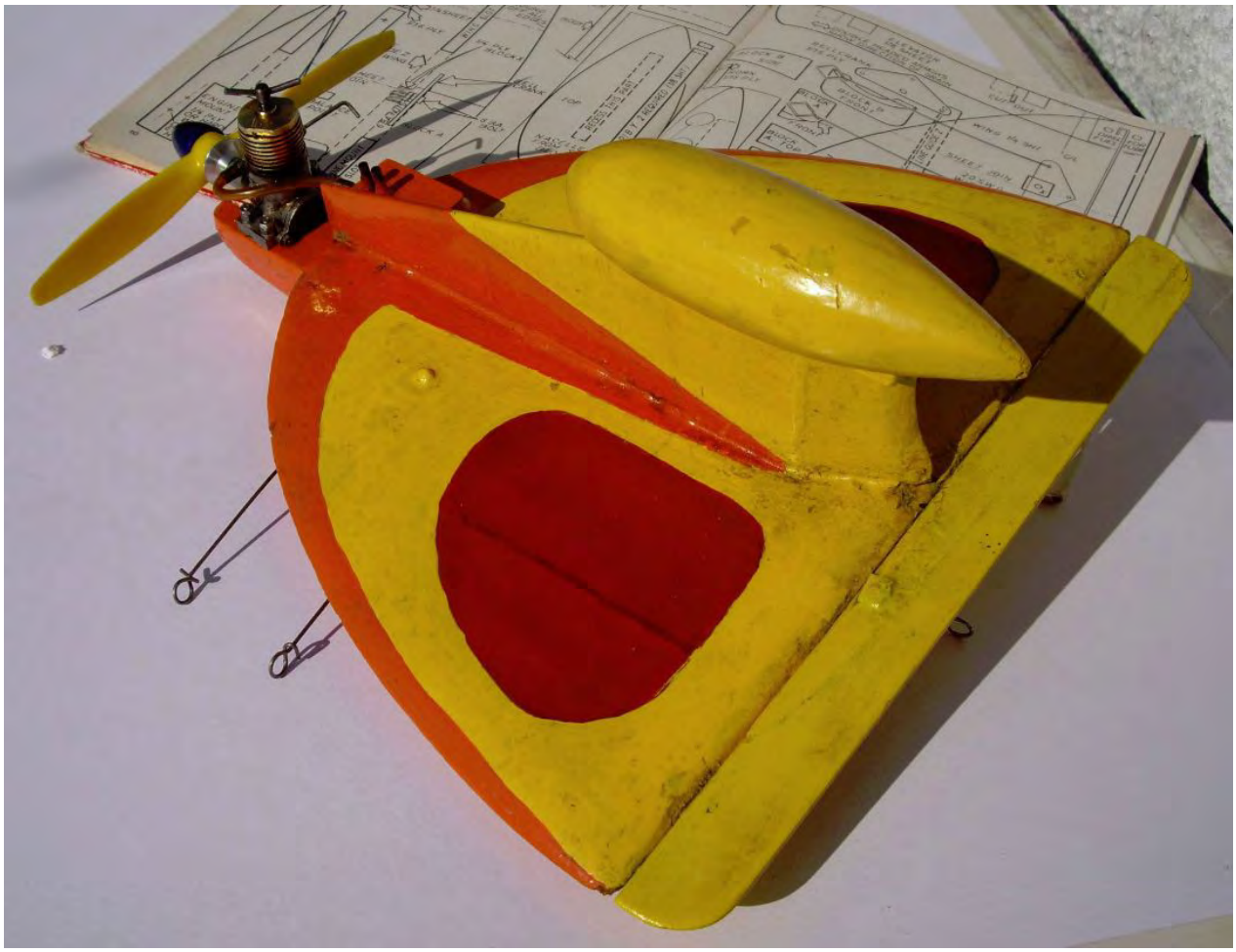
Method

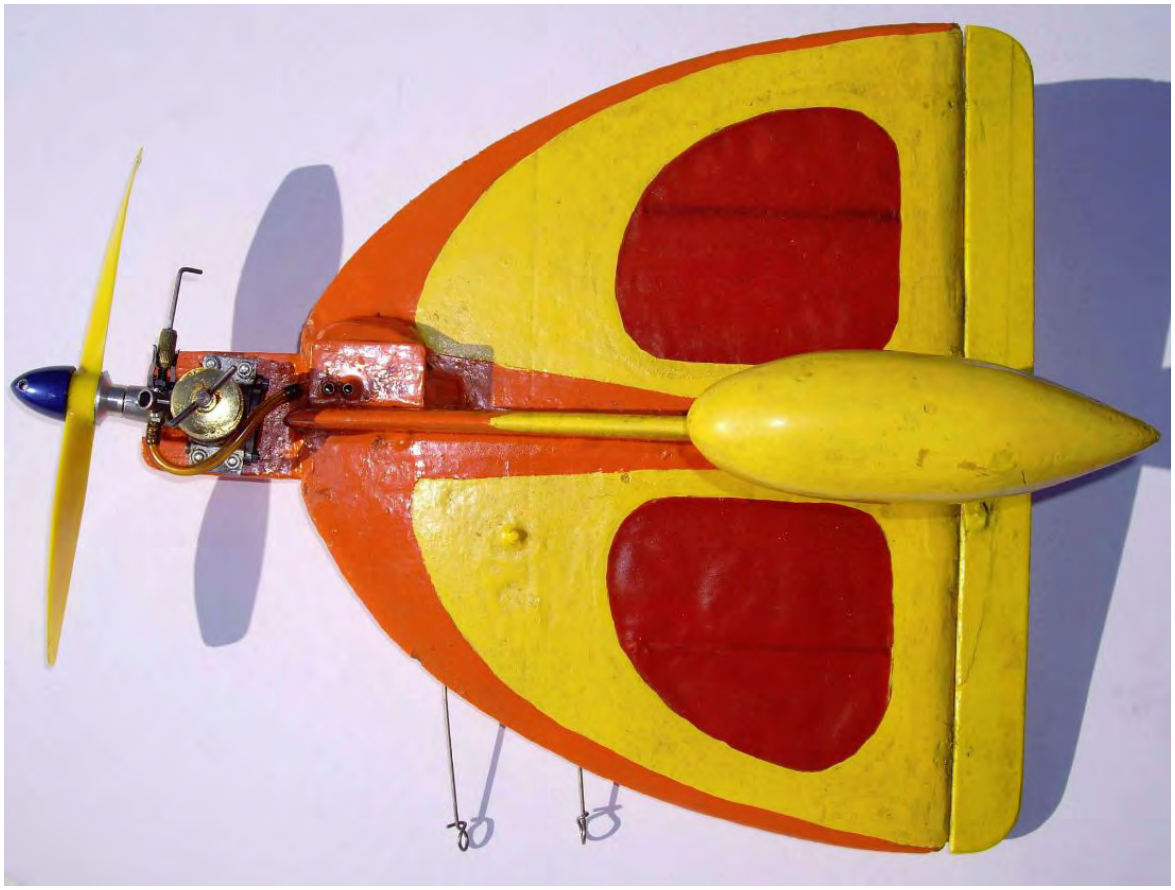
Trace down, using carbon paper, the parts on to 3/16 in. sheet, the ¼ in. ply, and 3/32 sheet. Cut out with a pointed modelling knife or fretsaw and sand edges smooth, carving and sanding the wing to section, such as it is !

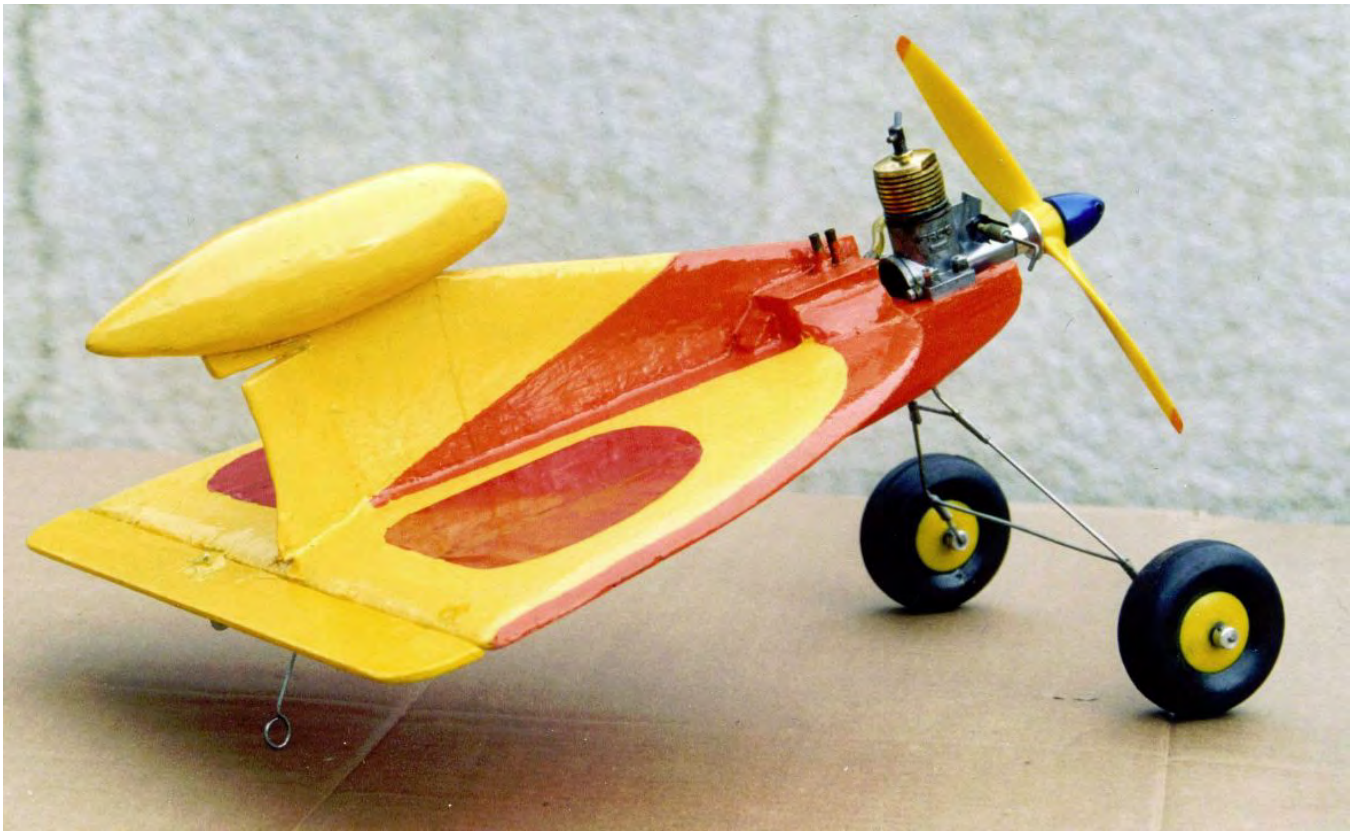
Note the method of interlocking the components: fuselage slotted for bearer. Head slotted for both wing *and* fuselage, bearer slotted for wing. This system sounds rather confusing, but when the parts are fitted the penny should drop. Remember the offset angle and the fact that the parts are drawn from the underside for the sake of clarity . . . No, we have *not* forgotten the fin . . . there isn't one . . . well not in the usual place, Santa's "bonce" provides the necessary outward lift component (*Cor* !).

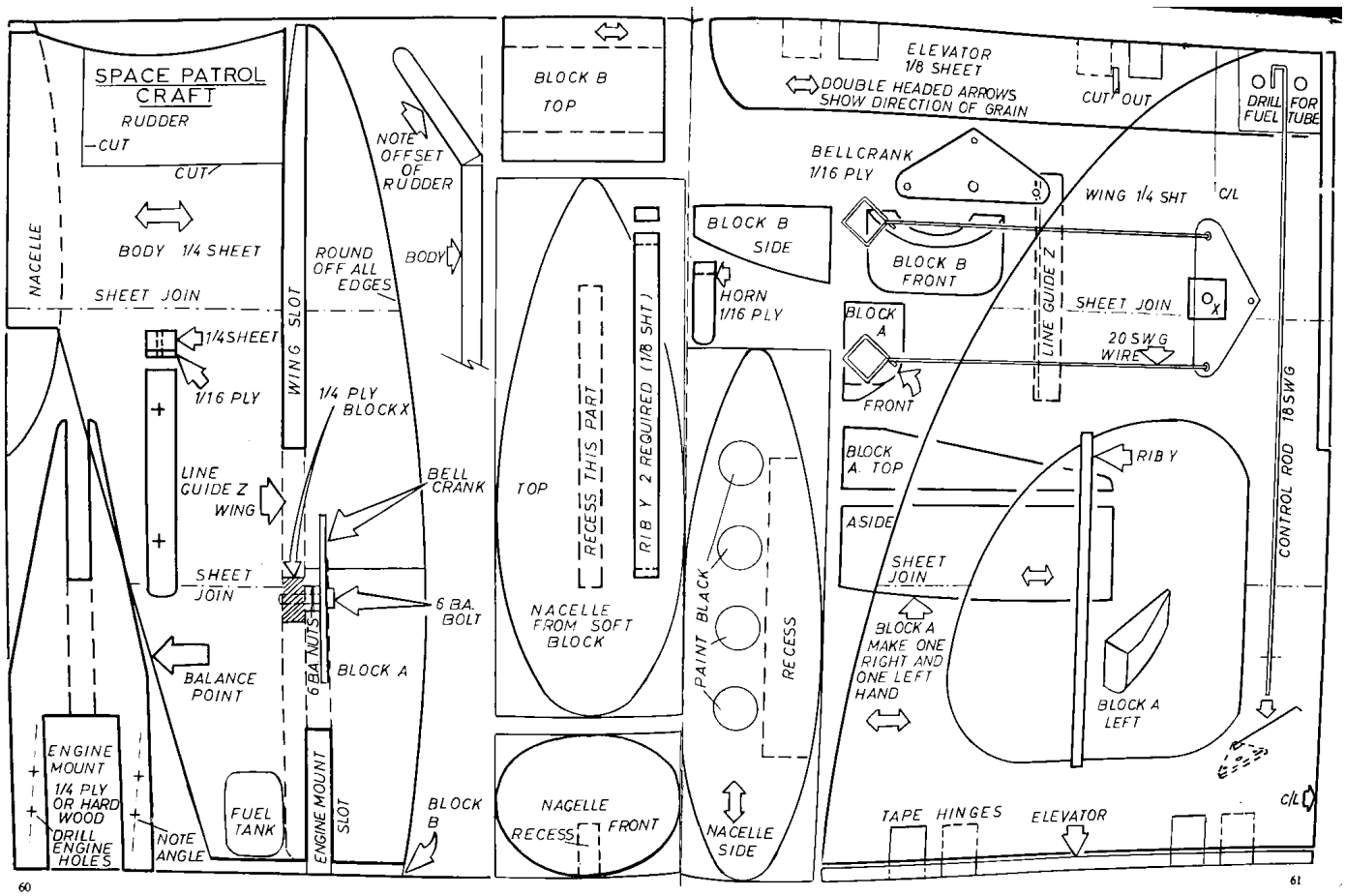
Colour dope, or even one coat clear sanded matt and painted with poster paints, and sealed with a further coat of clear puts Santa in glorious technicolour.

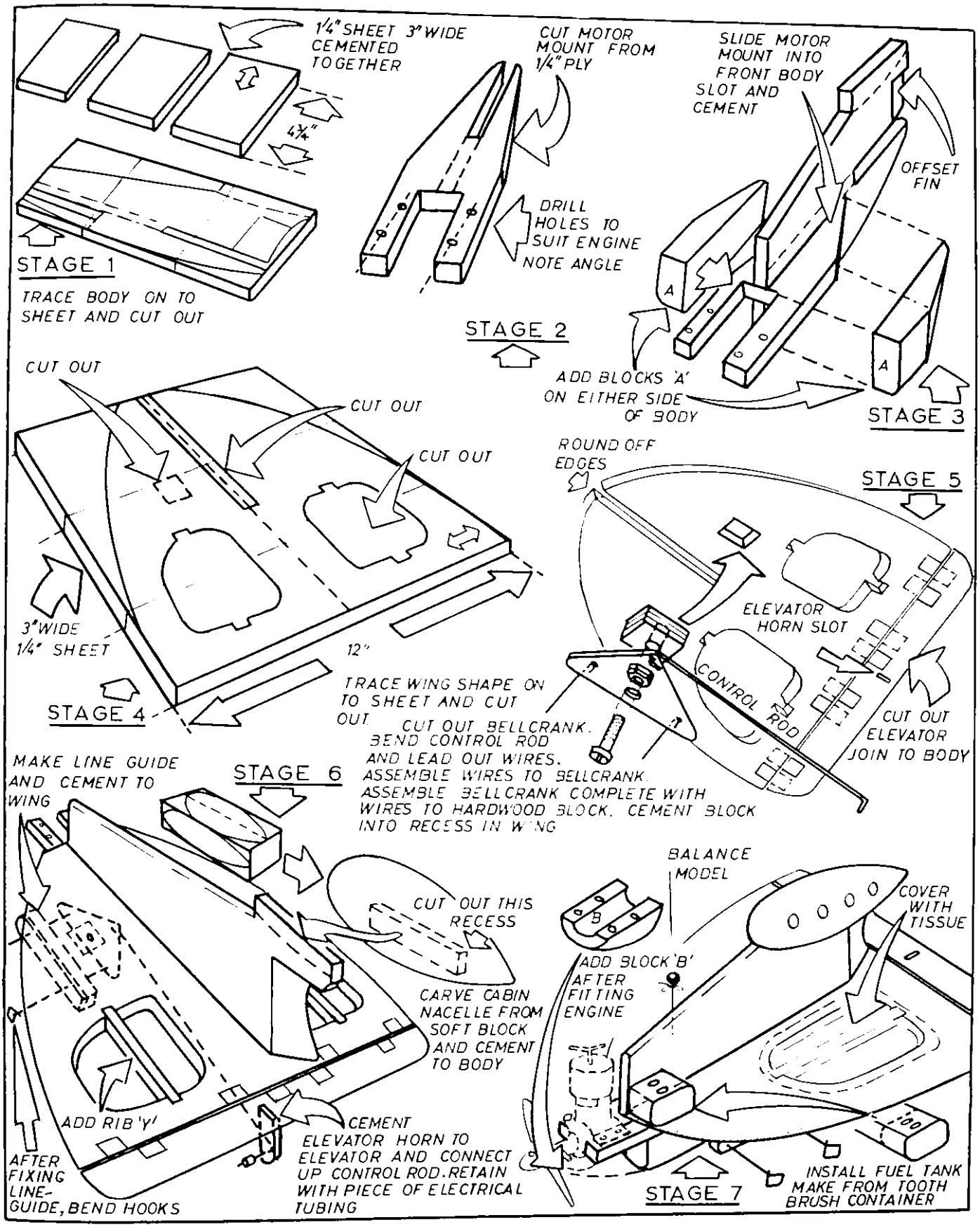
Serve . . . on 20 ft. - 30 ft. lines combat style.

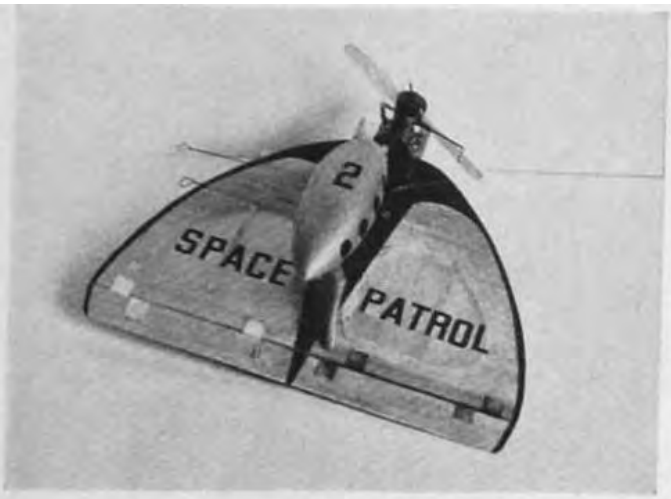


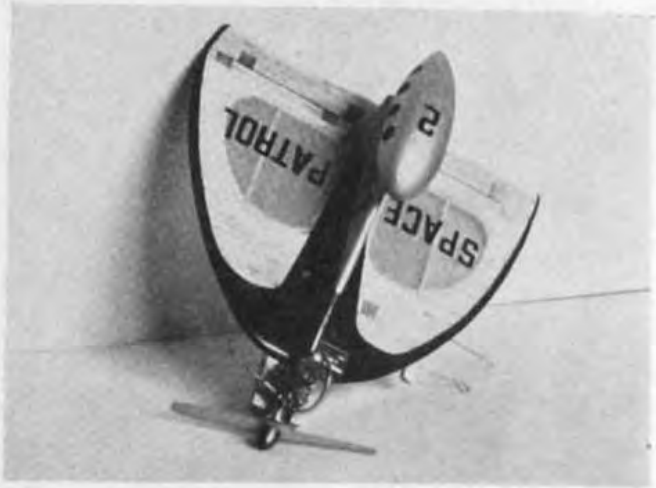


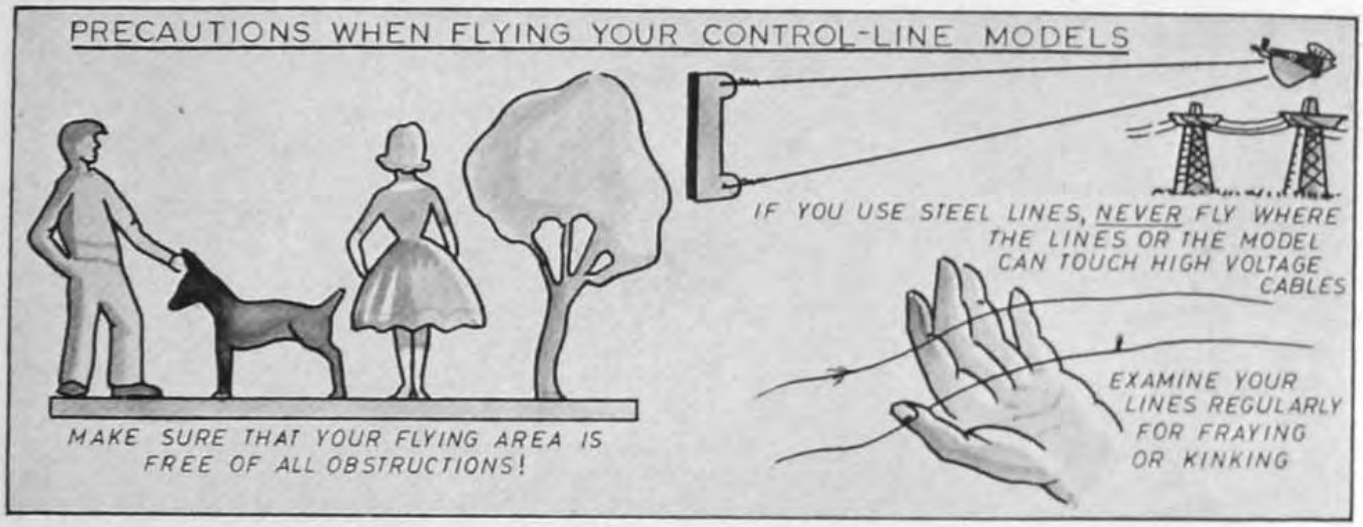


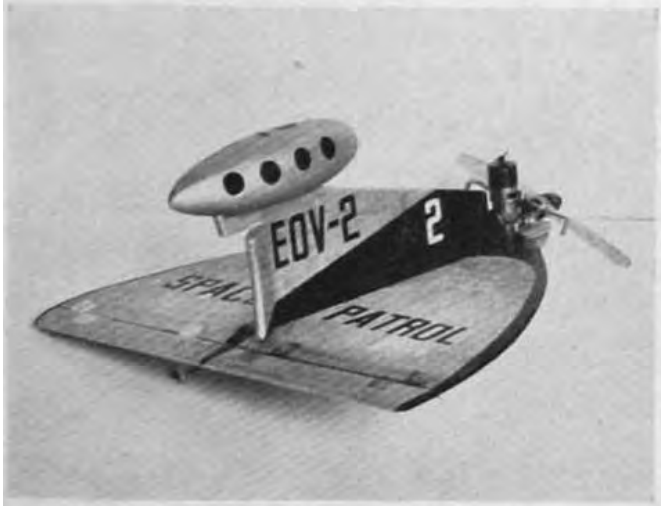

SPACE PATROL CRAFT
RUDDER
CUT
CUT
BODY 1/4 SHEET
SHEET JOIN
NACELLE
1/4 SHEET
1/16 PLY
LINE GUIDE Z
WING
SHEET JOIN
BALANCE POINT
ENGINE MOUNT
1/4 PLY OR HARD WOOD
DRILL ENGINE HOLES
NOTE ANGLE
FUEL TANK
WING SLOT
ROUND OFF ALL EDGES
1/4 PLY BLOCK X
BELL CRANK
6 BA. NUTS
6 BA. BOLT
BLOCK A
ENGINE MOUNT SLOT
NOTE OFFSET OF RUDDER
BODY
BLOCK B
BLOCK B TOP
TOP
RECESS THIS PART
RIB Y 2 REQUIRED (1/8 SHT)
NACELLE FROM SOFT BLOCK
NAGELLE RECESS
FRONT
PAINT BLACK
RECESS
NACELLE SIDE
BLOCK B SIDE
HORN 1/16 PLY
ELEVATOR 1/8 SHEET
DOUBLE HEADED ARROWS SHOW DIRECTION OF GRAIN
CUT OUT
DRILL FOR FUEL TUBE
BELLCRANK 1/16 PLY
WING 1/4 SHT
C/L
BLOCK B FRONT
LINE GUIDE Z
SHEET JOIN
20 SWG WIRE
BLOCK A
FRONT
BLOCK A TOP
ASIDE
SHEET JOIN
BLOCK A MAKE ONE RIGHT AND ONE LEFT HAND
RIB Y
BLOCK A LEFT
CONTROL ROD 18 SWG
C/L
TAPE HINGES
ELEVATOR
60
61


1/4" SHEET 3" WIDE CEMENTED TOGETHER
4 3/4"
STAGE 1
TRACE BODY ON TO SHEET AND CUT OUT
CUT MOTOR MOUNT FROM 1/4" PLY
DRILL HOLES TO SUIT ENGINE NOTE ANGLE
STAGE 2
SLIDE MOTOR MOUNT INTO FRONT BODY SLOT AND CEMENT
OFFSET FIN
A
A
ADD BLOCKS 'A' ON EITHER SIDE OF BODY
STAGE 3
CUT OUT
CUT OUT
CUT OUT
3" WIDE 1/4" SHEET
12"
STAGE 4
ROUND OFF EDGES
STAGE 5
ELEVATOR HORN SLOT
CONTROL ROD
CUT OUT ELEVATOR JOIN TO BODY
TRACE WING SHAPE ON TO SHEET AND CUT OUT
CUT OUT BELLCRANK. BEND CONTROL ROD AND LEAD OUT WIRES. ASSEMBLE WIRES TO BELLCRANK. ASSEMBLE BELLCRANK COMPLETE WITH WIRES TO HARDWOOD BLOCK. CEMENT BLOCK INTO RECESS IN WING
MAKE LINE GUIDE AND CEMENT TO WING
STAGE 6
CUT OUT THIS RECESS
CARVE CABIN NACELLE FROM SOFT BLOCK AND CEMENT TO BODY
ADD RIB 'Y'
AFTER FIXING LINE-GUIDE, BEND HOOKS
CEMENT ELEVATOR HORN TO ELEVATOR AND CONNECT UP CONTROL ROD. RETAIN WITH PIECE OF ELECTRICAL TUBING
BALANCE MODEL
B
ADD BLOCK 'B' AFTER FITTING ENGINE
COVER WITH TISSUE
STAGE 7
INSTALL FUEL TANK MAKE FROM TOOTH BRUSH CONTAINER





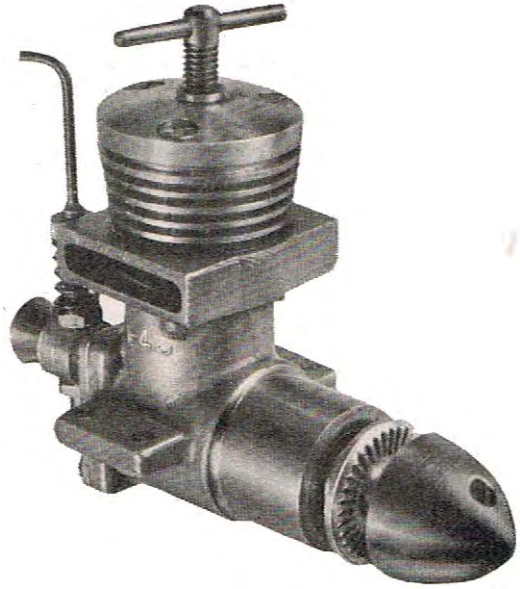


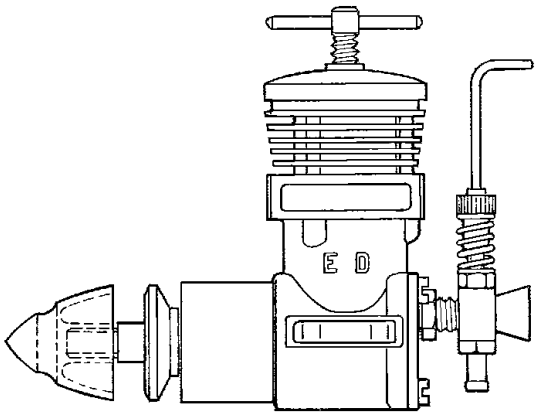


THE VAST REGIONS OF SPACE WILL HAVE TO BE PATROLLED. GET SOME PRACTICE IN WITH THIS EASY-TO-HANDLE MODEL


For vintage speed fans,
two versions of the Micron Racing .60
1st version (1949/50)
FAI World Speed Record holder
in 50/51
MICRON
MOTEURS
2nd version (early fifties)
Note crude changes to castings
in an attempt to remove excess metal.
This engine used at 1953 World Champs
(the Battistella-Davenport bash)
BC

E.D 1.49 Fury "Outstanding handling qualities" is the verdict for the new 1.5 cc ball race reed vlave engine from W Moseley Reviewed by R. H. Warring Aero Modeller ……..





EVERY ONCE IN A WHILE, amongst the dozens of specimens that pass through the test shop each year, there comes an engine which is outstanding in its handling qualities— and a sheer pleasure to put through the range of individual propeller r.p.m. tests, hand-started down to the very smallest diameter sizes, as well as giving no trouble at all on the dynamometer rig. Such an engine was the new E.D. 149 c.c. "Fury", which on handling qualities alone should achieve great popularity.

The engine as received for test had obviously done quite a lot of running at the factory, and was completely "run-in" for us. As supplied new, the "Fury" needs at least one-hour moderate running speed to obtain similar performance. Essentially, of course, the "Fury" is of "racing" layout— virtually scaled down from the well-known 246 diesel with the addition of reed valve induction in place of a rotary disc. This form of induction means that an engine should run equally well in either direction, but there is remarkable absence of "kick" in the "Fury" when hand starting so that on only one occasion hand starting did it actually start backwards. Starting proved virtually instantaneous on any propeller load after giving a finger choke at suction point and backing off the compression slightly. "Choking", incidentally, is an easy way of stopping a reed valve engine. It does not result in flooding, but merely stops the valve from working. The controls are nice to handle, the contra piston fit just right and the needle valve positive in setting.

The needle thread is rather coarse, making adjustment of the mixture a little critical at the higher speeds and if leaned out too much the engine does stop abruptly, but it is quite an easy matter to establish an optimum setting. The "Fury", too, is quite happy running at low speeds and swung a 10 in. x 4 in. Trucut propeller smoothly at 5,000 r.p.m. Actually with this load the compression was backed off to its limit and a somewhat higher r.p.m. figure would possibly have been obtained if it could have been reduced still more. But operation at such low speeds would, of course, not normally be called for. In terms of power output, in fact, the low speed performance is quite modest and the torque curve is a little unusual in showing a peak between 10,000 and 11,000 r.p.m. so that the true potentialities of the "Fury" are only realised at the upper end of the speed range. Peak B.H.P. from the test data was plotted as .1315 at 14,000 r.p.m. Running with propeller loads is still consistent and smooth up to 17,000 r.p.m. and beyond, although there is a marked falling off in power past the peak. About the only criticism that can be levelled against the operation of the "Fury" is a marked "vibration period" within the speed range 9,500 to 10,000 r.p.m. All propeller loads tried which brought the speed to within this range resulted in considerable vibration. In fact, propeller sizes which would have been expected to give, say, 11,000 to 12,000 r.p.m. tended to "stick" in this vibration speed range. This was noted on both wooden and plastic propellers.

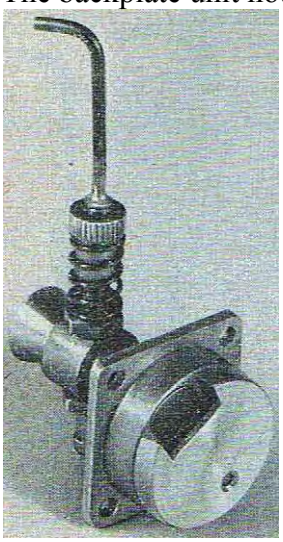
Fuel consumption of the "Fury" appears quite moderate, which should be a particular attraction for S.M.A.E. 1/2A team racing. High pitch propellers are also handled with ease, although the propeller shaft is not really long enough to take any propeller with more than six-inch pitch unless the hub is cut back. Static r.p.m. figures with high pitch propellers are, of course, not a reliable guide for propeller selection because of the greater extent of "unloading" in the air, and consequent increase in operating r.p.m. The "Fury" is not at all fussy about the type of fuel used and showed very little difference in performance on various standard mixtures. The "Fury" has the typical characteristics of a Basil Miles design and E.D. production methods. Size for size it is a much sturdier engine than the 246 with a proportionately more rigid cylinder and appears quite free from the distortion trouble that can be produced on a 246 by tightening down the cylinder bolts

excessively. The crankcase unit is a typical E.D. type casting in magnesium alloy, which gives a robust casting of relatively light weight. The crankcase casting is virtually machined all over, the front "bearing length" also being machined externally—presumably as an initial operation so that the unit can be held in a collet for subsequent working.

The bearing length is cast with generous clearance, leaving only a small "land" area to be finished to shaft size immediately in front of the rear ball race, providing an oil seal. There is some oil leakage from the front of the crankshaft, but certainly nothing excessive. Two FBC ball races are press-fitted into the machined crankcase housings. The two races are of the same bore but different size— the rear race having seven and the front race eight balls—presumably selected to the basis that the rear race is more heavily loaded and so bigger balls are used. The shaft is a sliding fit in the ball races, measured as half-a-thou. down on 1/4-in, diameter. This is solid throughout its length, machined from alloy steel, case hardened and ground to finish. Two areas are cut from the web to produce a counter balance. The shaft has a moderate taper outside the bearing length down to the threaded length. The cylinder is quite conventional, machined with an external flange to seat on the crankcase casting. The lower end of the cylinder is located in the crankcase by three lands, the space between them forming the transfer passages. Transfer ports are cut in the cylinder wall below the flange and so it is possible to vary the effective area according to the circumferential position of the ports and lands when assembled—although the effect is probably negligible. Exhaust ports are cut in the cylinder flange, the area of both exhaust and transfer ports being relatively small. The cylinder is located by the quite substantial turned durai jacket held down by three bolts screwing into the crankcase.

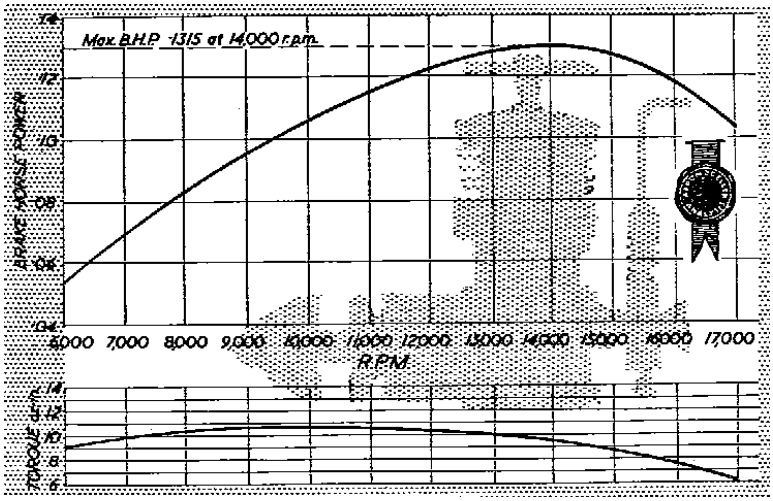
No gasket is used. A cast iron piston is machined with a shallow conical top and central "flat". Wall thickness is generous to provide support for the silver steel gudgeon pin, which is a light press fit. The piston is a nice fit in the cylinder and is almost entirely "free" at the bottom of the cylinder due to the generous relief grinding on the bore. Contra-piston is of cast iron, and again perfectly fitted as previously noted in the handling comments. Connecting rod is machined from steel and hardened and although this produces a tough, light unit, wear rate on the crankpin and gudgeon pin is likely to be high.

The backplate unit housing the reed valve was originally intended for rotary disc induction, and is, in fact, the rear cover from the ED. Bee I c.c. Series II model modified. It has the advantage that a disc valve version of the Fury could be produced if thought necessary. The choke tube on the production model is machined from bar and screws into the backplate, locking with a nut. The centre-line scribed round the spraybar boss seems to be a guide for hand drilling, which again would appear to indicate a modification from an initial production design. The reed valve itself is quite simple and robust. Cut from 3 ½ thou. pen steel it is simply clamped to the inside cover by an aluminium disc with a suitable port opening and chamfer lead, the unit secured by a single screw from the outside. This valve, it may be remarked, works perfectly with complete absence of blowback at any speed. Apart from the criticism concerning the vibration speed range just under 10,000 r.p.m., everything else deserves the highest praise for sound design and good workmanship, and if the performance is not quite in the extreme "racing" class, the pleasant handling characteristics alone will endear it to thousands of aeromodellers throughout the world.



PROPELLER—R.P.M. FIGURES

Propeller dia. x pitch	*r.p.m.*
8 x 3½ (Tiger)	12,000
8 x 4 (Tiger)	10,800
9 x 3 (Tiger)	8,600
6 x 9 (Tiger)	10,000
10 x 4 (Trucut)	5,000
9 x 4 (Trucut)	7,750
8 x 4 (Trucut)	9,800
7 x 3 (Trucut)	15,000
7 x 4 (Trucut)	12,500
7 x 5 (Trucut)	9,800
7 x 6 (Trucut)	8,500
6 x 6 (Trucut)	11,800
7 x 4 (Stant)	11,900
6 x 5 (Stant)	13,900
7 x 6 (Stant)	10,000
8 x 4 (Stant)	10,000
6 x 6 (Stant)	12,700
7 x 4 (Frog nylon)	10,000
6 x 4 (Frog nylon)	16,000



SPECIFICATION
Displacement: 1500 cc (92 cu. in.)
Bore: .500 in. Stroke: .468 in.
Bore/Stroke ratio: 1 : 92
Bare weight: 3 5/8 ounces
Max. torque: 10.7 ounce-ins at 10,400 r.p.m.
Max. B.H.P.: .1315 at 14,000rpm.
Power rating: .0875 B.H.P. per c.c.
Power/weight ratio: .0364 B.H.P. per ounce.
Material Specification:
Crankcase: magnesium alloy pressure die casting
Cylinder: hardened steel
Cylinder jacket: machined from dural
Piston: cast iron Contra-piston: hardened steel Connecting rod: hardened steel
Main bearings: two ball races Induction: reed valve Spraybar: brass
Needle valve: steel, silver soldered (toil spring lock)
Manufacturers:
Electronic Developments (Surrey) Ltd., Island Farm Rd., West Molesey, Surrey.
Price: 3 5s. 0d. plus l4/-. PT. Total £3 19s. 0d.

A 50" Span F.A.I. specification free flight power model. Power 1·5c.c. (A.P.S. Code E & F)

ATLANTIS

DESIGNED BY

L. Piesk.

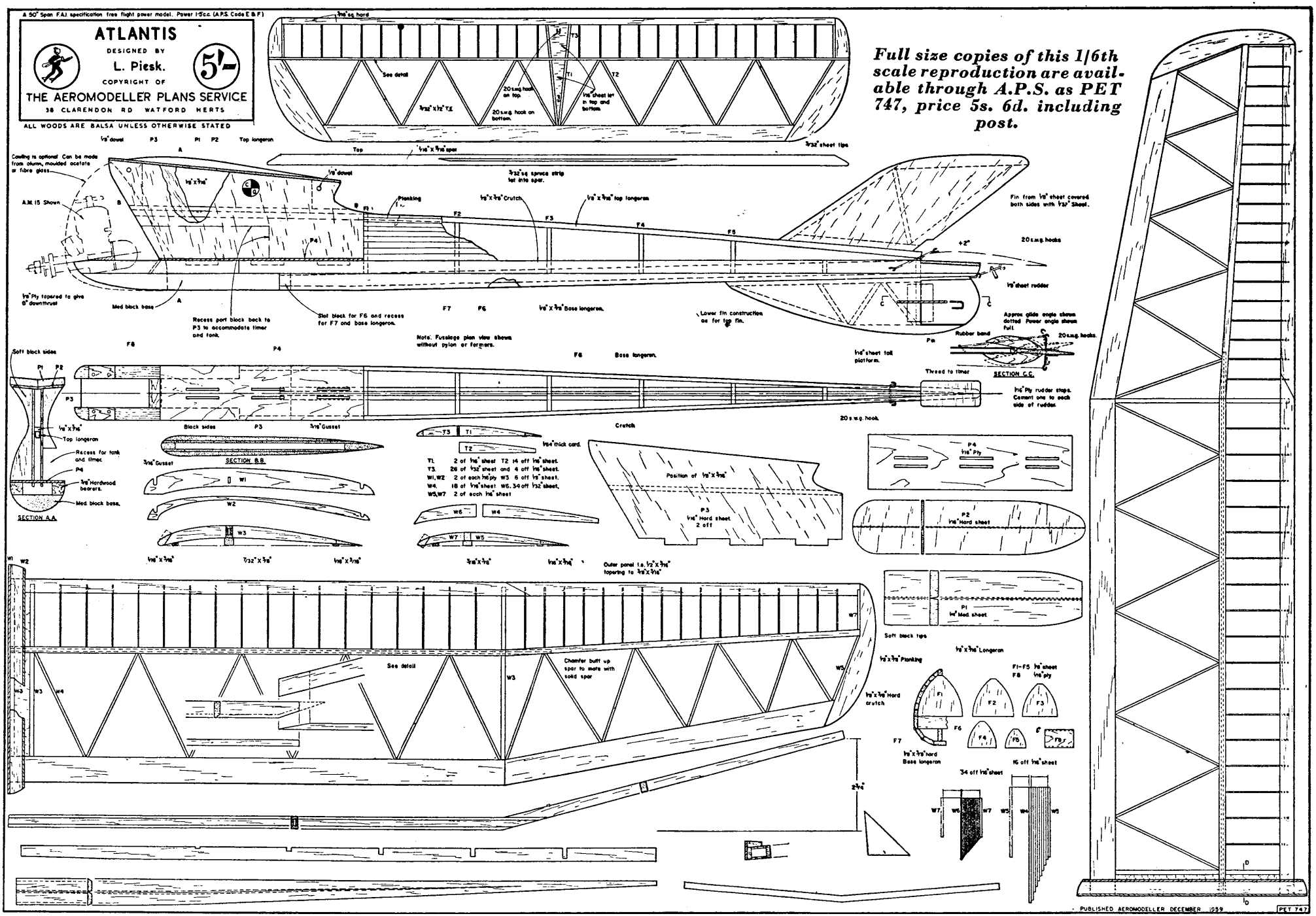
5/-

THE AEROMODELLER PLANS SERVICE

38 CLARENDON RD WATFORD HERTS

ALL WOODS ARE BALSA UNLESS OTHERWISE STATED

Full size copies of this 1/6th scale reproduction are available through A.P.S. as PET 747, price 5s. 6d. including post.

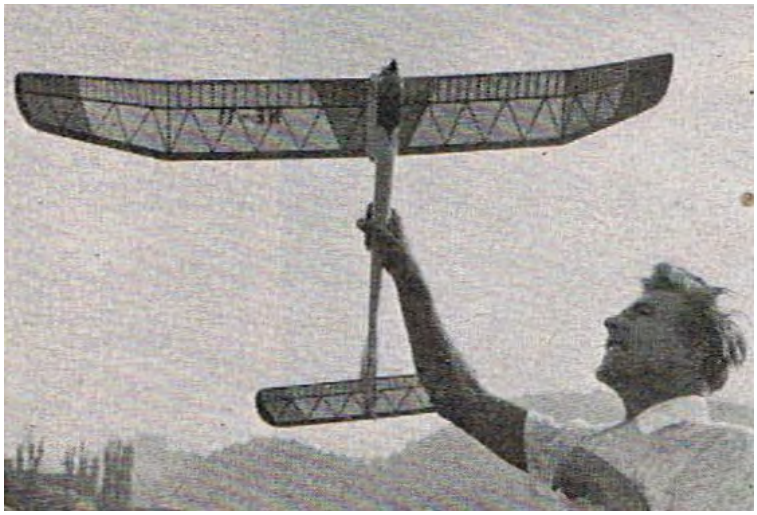


PUBLISHED AEROMODELLER DECEMBER 1959

PET 747

Atlantis for 1.5 cc by Lothar Piesk. Hottest 1.5 cc F.A.I. specification design in Europe!
Aero Modelelr December 1959

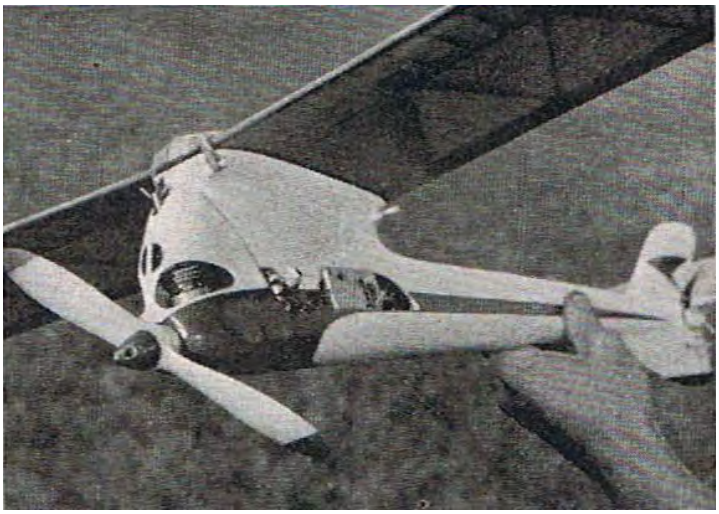
Well known for his series of contest winning 1.5 c.c. power designs, Lothar Piesk of Germany was voted by us as one of those most likely to win the 1958 World Champs. Such was not to be, for his best model was knocked from his hands by a competing design, and smashed beyond repair. However, nine first places in ten contests, with a still air average of 220 to 240 seconds from a fifteen secs, engine run, is the kind of performance that all power modellers will respect , . . so here's the design, the rest is up to you! Lothar started this layout in '56, changing shapes as the design progressed, and like many others, he had just reached the "ultimate" when that formula change came along to increase the weight. "Atlantis", the latest in the Piesk line, is now considered the second "ultimate", and no further design alterations are envisaged. Small in its overall size, still smaller when broken down for transport, and yet capable of knocking all the giants out of competition, it has an incredibly fast rate of climb and a glide that rivals a towline model.



The fuselage is built over a basic crutch with motor mounts, joined by a ply strengthener P.4. Leave the motor mounts longer than shown and trim later. Soft block and angled firewall can now be added to the motor mounts, and the lower fuselage T-spar and F7 fillers added.

Make up the pylon assembly in stages, checking for correct angle with the dural wing tongue, then cement wing platform and fill-in firmly in place. Now add the top planking strips alternately left and right, beginning at the crutch and working upwards. When the cement is well set, sand the whole fuselage to final shape according to the cross-section shown on the plan. Try to keep the weight as low as possible aft of F2. Final thickness of the planking need not be more than 1/16 in. at the tail.

Add hold-down dowels, tail platform and hooks. Strengthen the dowels with circles of cloth (nylon, silk, linen, gauze, etc.) to prevent them pulling out under tension. Wind a piece of linen or similar material about 1 1/4 in. broad around the fuselage bottom at the firewall to protect this area in landing; the cloth should begin about 3/8 in. above the motor mounts on each side. Keep the fin and rudder parts as light as possible. The underfin has a moveable rudder with limiting stops, rudder direction depending on the power/glide set-up desired by the builder. A timer-operated auto-rudder requires a stop on both sides. Approximate settings are given on the plan. Cement a 1/32 in. x 1/16 in. bamboo strip flat onto the bottom edge of the underfin for protection against damage in landing. Sand the fin parts before cementing to the fuselage.



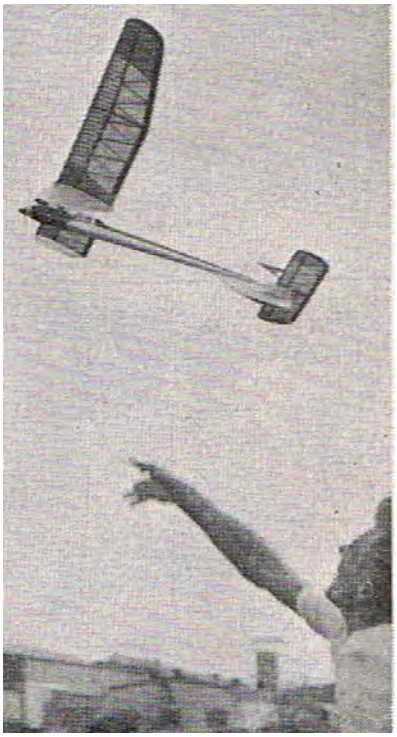
Original wing construction called for two small boards (one for each wing-half), angled to give the proper tip dihedral. The plan was cut and pinned to the boards, followed by the packing shown on the plan. This method ensures greater accuracy while building and the boards can be used later to keep the wing true between contests. However, one such board would be sufficient for building purposes.

The inboard panels of the wing have a box spar to take the dural wing tongue. Bevel the leading edge about 45 degrees on the underside so that it fits snugly on the board. The trailing edge is butt-jointed at the

dihedral break. Pin the mainspar to the packing and join Rib W3 to the spar at the dihedral angle indicated on the plan.

Check for proper alignment by sliding the dural wing tongue through the slot in Rib W3 into the mainspar.
Add the forward half-ribs; when dry, add the leading edge, Pin down the trailing edge, making sure there is
no tension on it to cause warping later. Set in the rear half-ribs, trimming them to the correct angle at the joints. The tip panel is built in similar fashion. Build up root fitting. The two wing-halves should fit snugly together with the tongue in place.

Preparation and construction of the tail are similar to the wing. To prevent the trailing edge warping, give it a slight undercamber by placing a strip of thin card (about 1/64 in. specified on the original) between the front edge and the building board. Waterspray the surfaces after covering, and pin to the building board. When dry, apply 2-3 coats of thinned clear dope, followed by 4-5 coats of normal thickness clear plasticised with a few drops of castor oil. Pin the surfaces down between coats, and allow at least 48 hours after the last coats before removing the surfaces from the board. Weigh all parts, including motor, prop, bolts, etc., and add the required ballast to make up the minimum weight (16 1/4 oz. for F.A.I.); this ballast is about 1-2 oz. Mount wing and tail on the fuselage and move the motor and ballast on the mounts until the CG. is correct, then mount the motor.



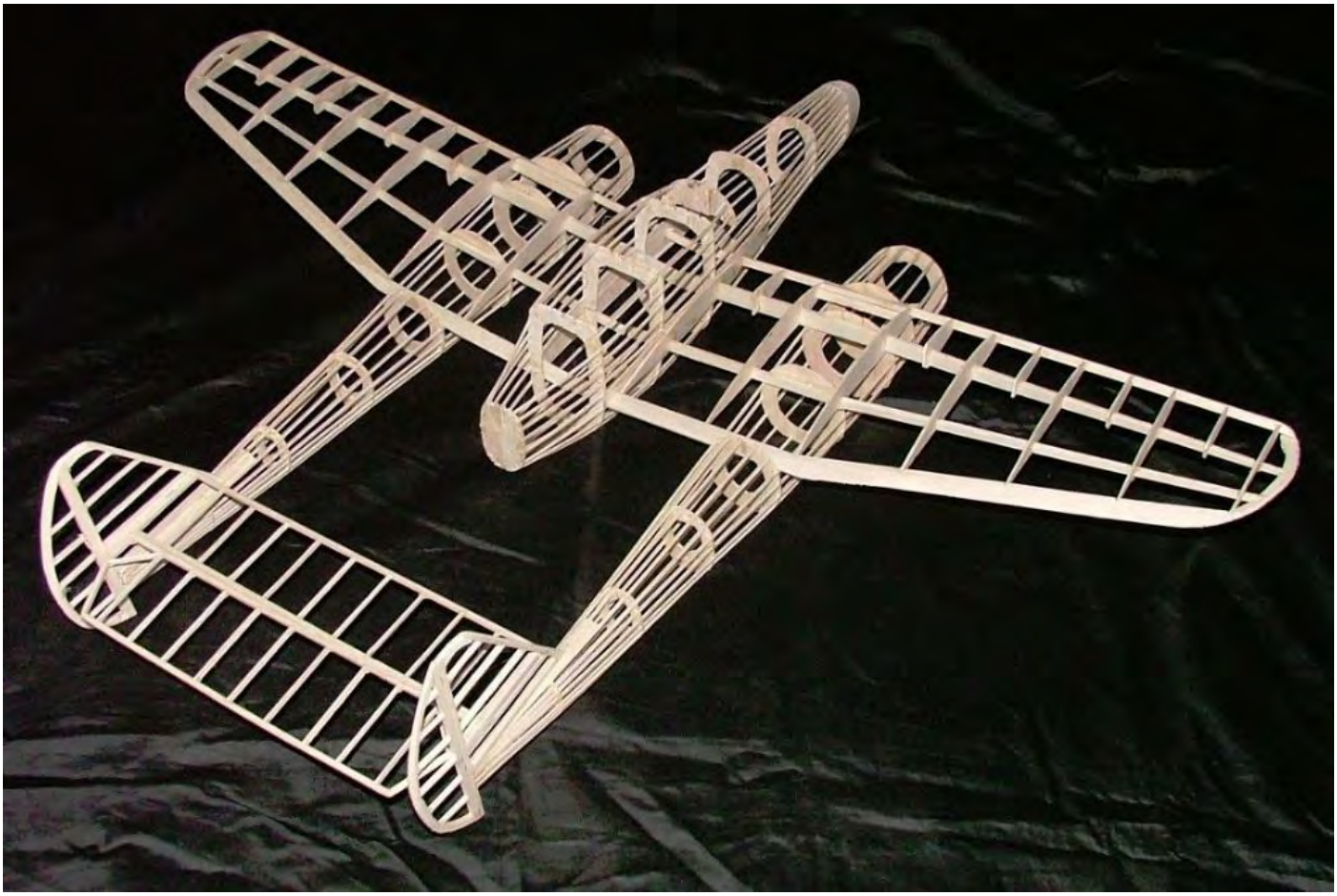
Trimming

After a satisfactory glide (to the right) is arrived at through hand-gliding, try a short flight on low power
with about second seconds motor run. The climb should be slightly to the right. Increase power gradually to full revs., correcting with the rudder to keep the right turn from tightening up. Be careful to make only slight changes in the rudder setting, as its effect is quite powerful at higher speed. Power-stalling is cured with more downthrust; if the climb is too shallow, decrease dowthrust. In wind or strong thermals, this model has a tendency to tighten up to the right in both climb and glide. Slightly more left rudder may be necessary to correct this.
The designer advises that two check flights be made before each flying session, both on about 7 seconds run,
one on half power and one on full. This applies even after the model has been thoroughly adjusted, and is especially recommended after the initial adjusting.

From Bob Pickernell

Hello James. Please find attached a couple of pictures of my latest project, a P61 Black Widow built from the plan of a 1944 Cleveland kit. It was a fairly challenging build as the drawing was not totally clear in places and this is the first model with this type of structure that I have built for quite some time.The design has a common shortcoming from models of the era with components,sub assemblies and covering all appearing to hang out in space with no visible means of support. Moulding the caopies kept me amused for quite a while, I had to make 4 seperate plugs, the rear cone in particular is very deep and resulted in a very

thin component.
Reading between the lines on the plan I could almost suspect the makers did not really expect builders to fly the completed model, Information on such an endeavour is extremely sketchy. How much rubber,CG location and target weight are all still secret!. However, when conditions permit I intend to try. The subject of the model was called "Little Audrey" and flew with the 422 night fighter sqadron USAAF based at Etain, France in 1944.
Regards to all, let's hope for more decent flying weather in 2013.



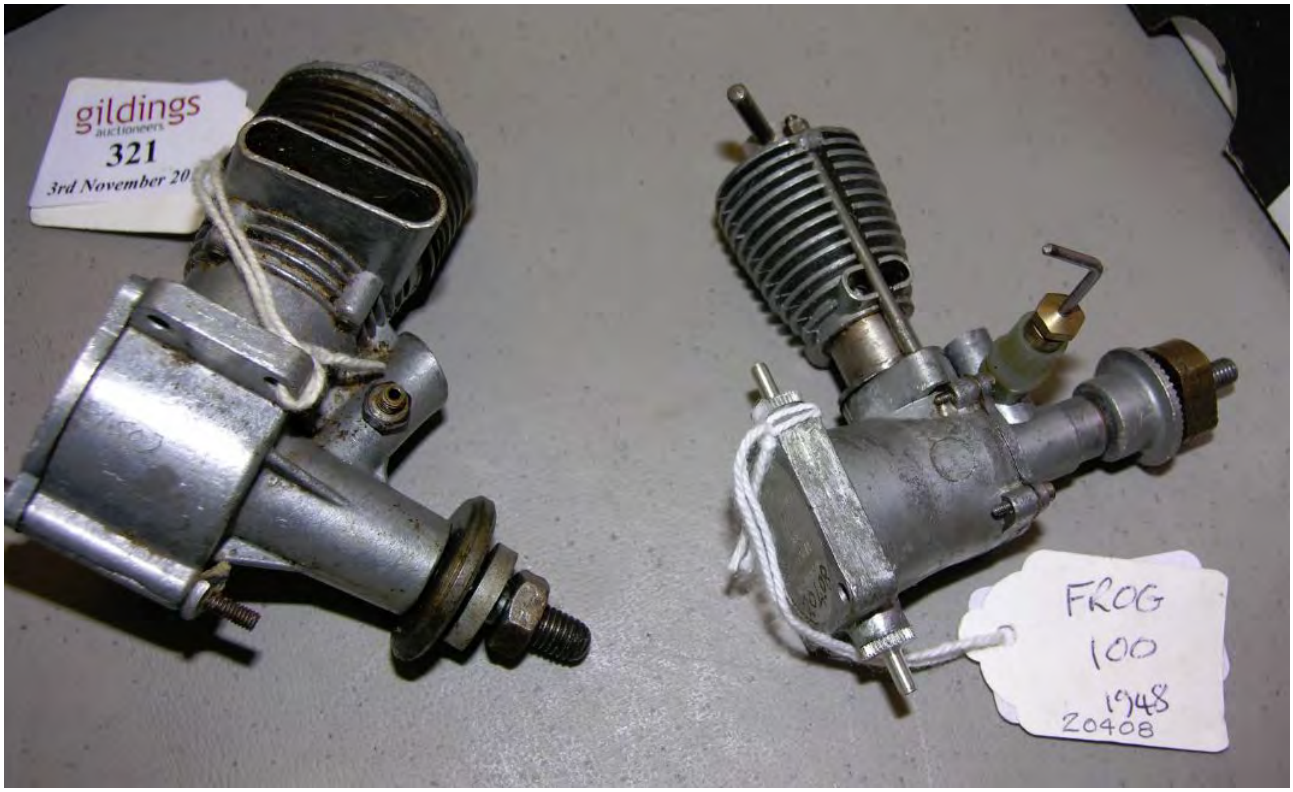
From Dave Day

Further to my last email, here are pictures of my R/c 'Polly 6' with V-tail mod. A little heavy at 22 grm.

More from Karl Gies

One of the reasons I spend a lot of time in my model cave. the white cabinet on the right is full of model plans and totally unorganized. One of the charms of this is that you literally have to look through all of the plans and discover ones that you forgot about or have not looked at for years. cheers, cccnh
(My wife is not impressed and harbors the suspicion that I am a "hoarder.") *Photo next page.*

Roger Cooper went to the Gilding's Auction earlier this month armed with camera here is the result

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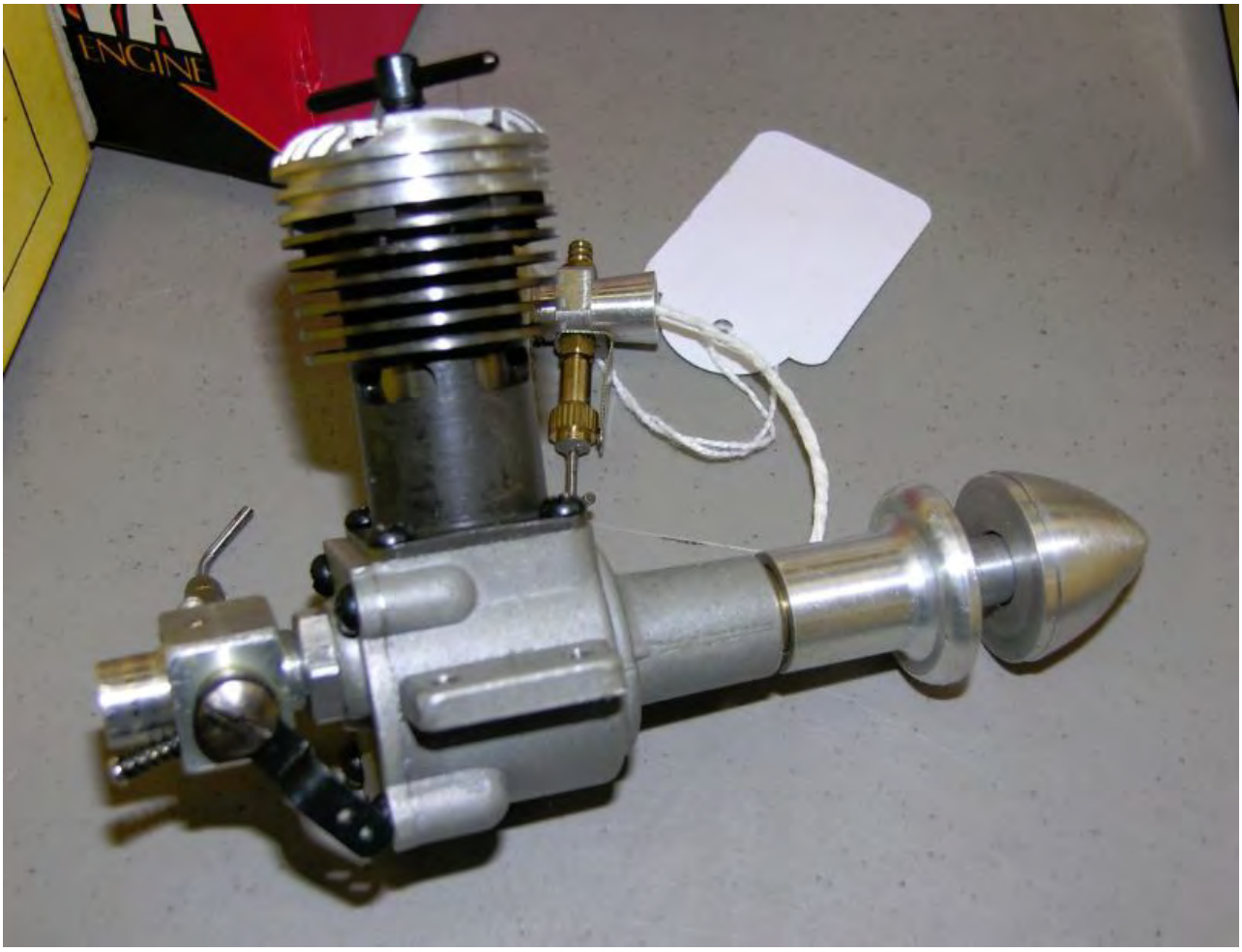
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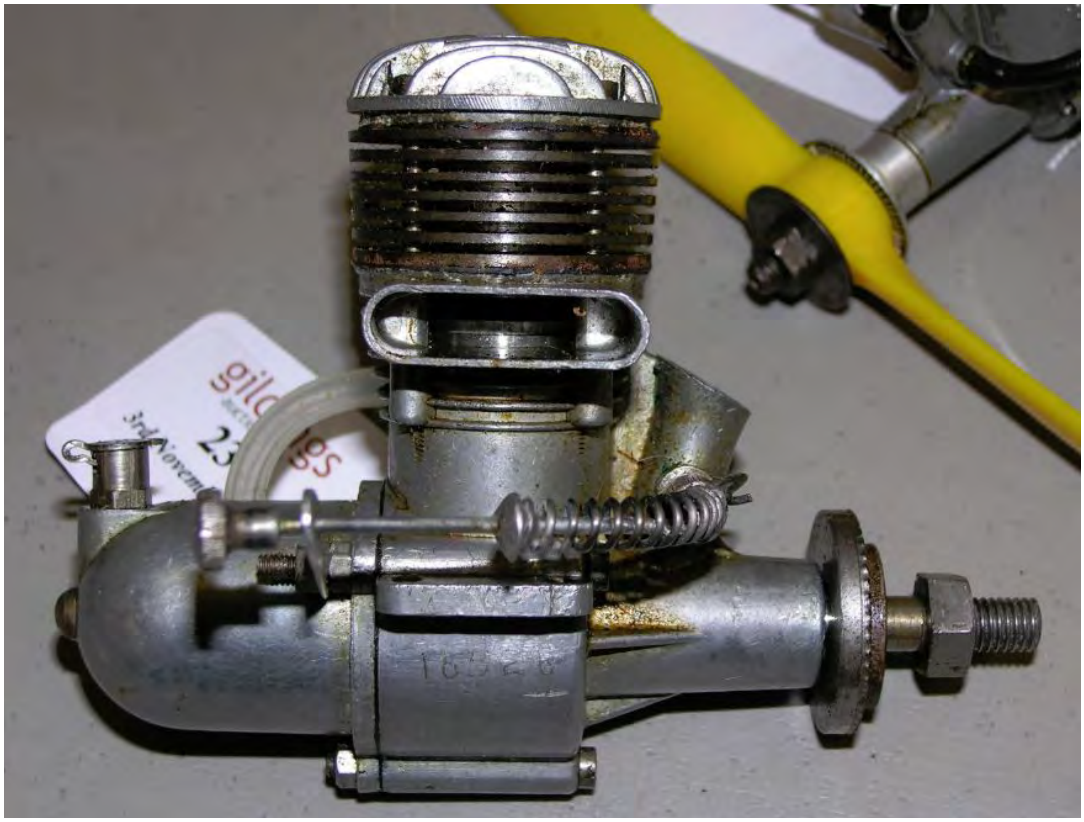


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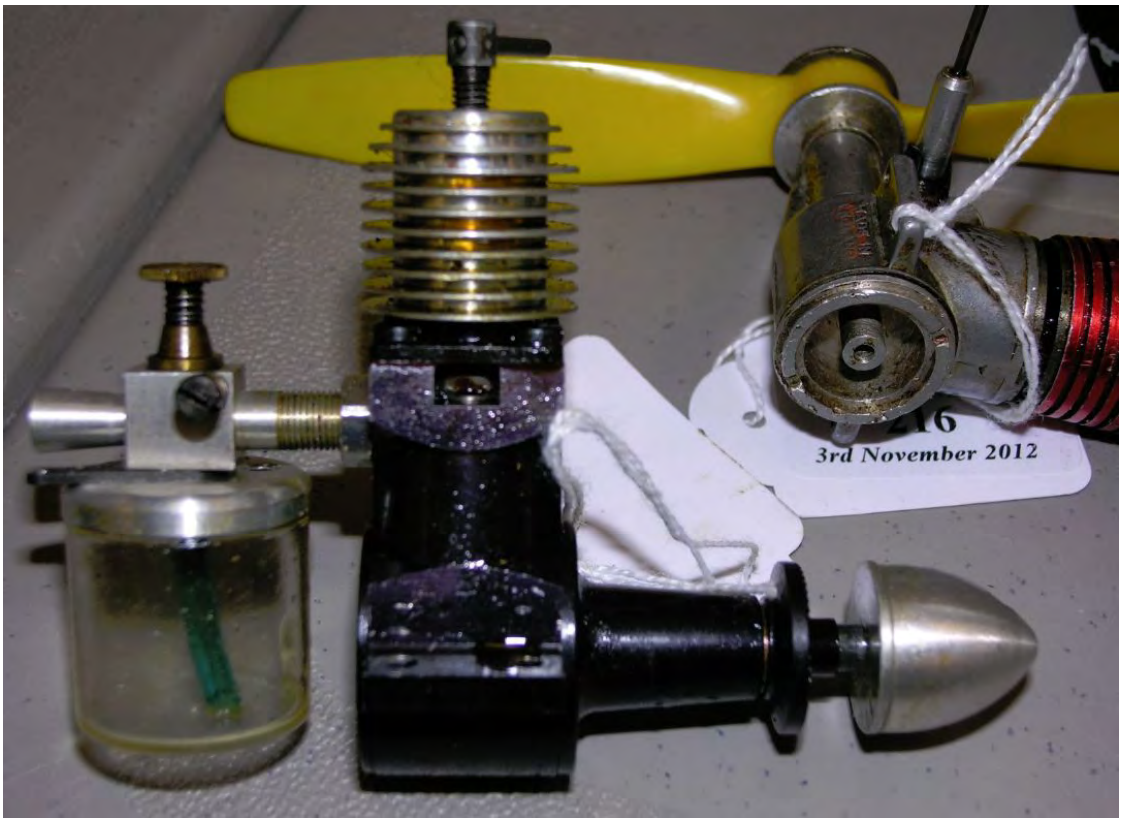
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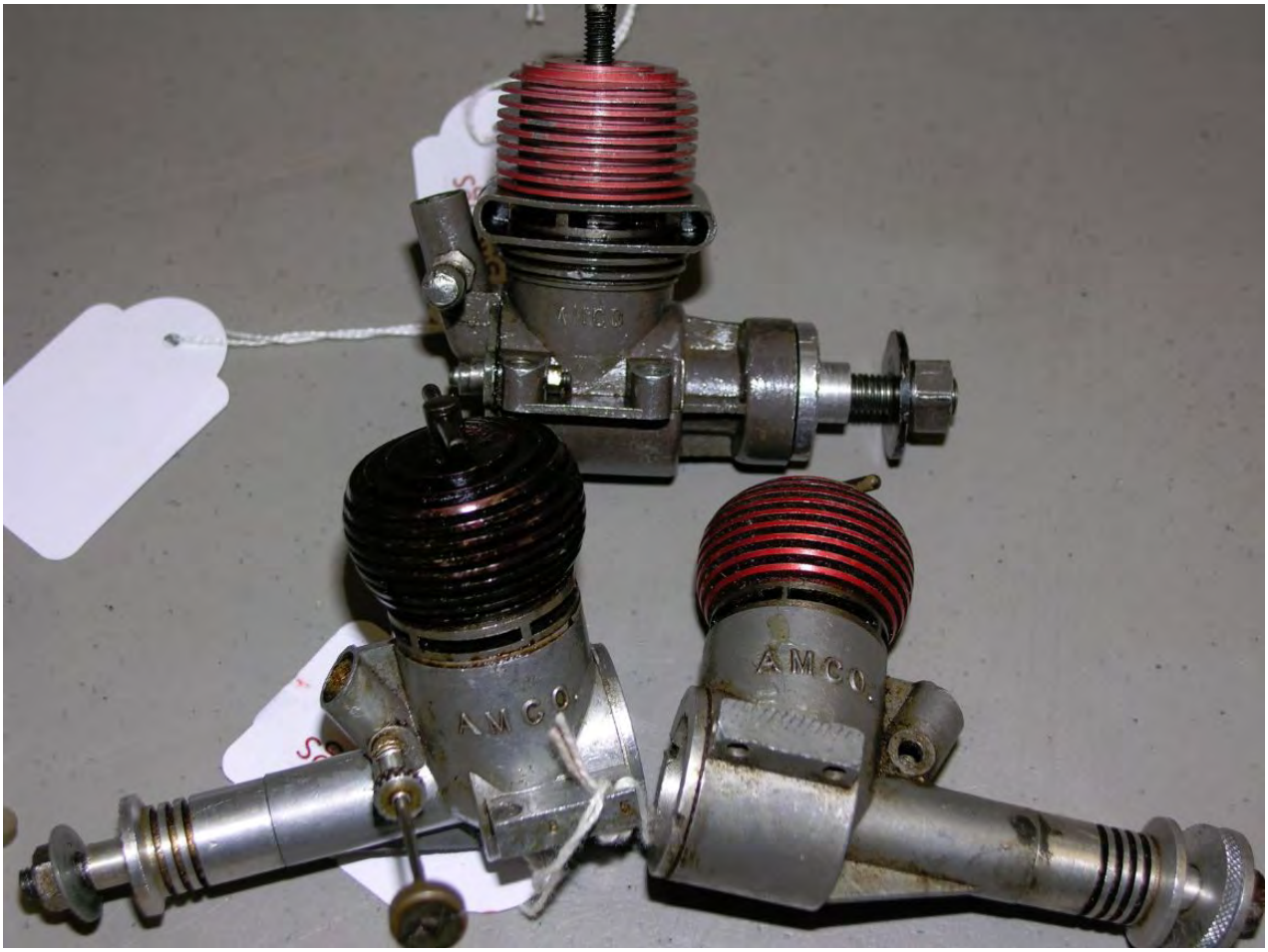
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David Kinsella's Column

Solid Silver

Seen here in action, Raynes Park's 46 in model of a crash tender was much admired at the Model Engineer Exhibition last year. All wood and beefy, a wealth of cast metal fittings too with power aplenty below the hatch, it's great as a static or on the water. Close links wih proper aeroplanes — think construction, power units, personalities, designers and sponsors an ex RAF crew told me that 70mph. could be touched on flat water, way above the accepted speed. Perhaps less well known when compared with the Campbells, Barnato, Segrave and Wood, dashing Miss Joe Carstairs — in later life living on her private island Whale Cay — donated her racing trophies to the Pitsea speed boat museum. Assumed silver plate (a Kaiser donated a vast trophy for Atlantic racing which proved to be basically lead!), Joe's were replicas but solid silver! Originals stolen long ago, she'd ordered replicas — and the jeweller assumed that only solid silver was just good enough. It was this great display which first drew my attention to the artwork of Arthur Benjamins, who later delivered a spiffing picture of Gar Wood's Miss America X (4 12—cylinder aero engines) being chased by lads of the Snow Owl Squadron. Also pictured is Joe racing her Estelle II in Detroit. in 1928.

Bomber Boys

Impressive at the Hilton end of Piccadilly, the Bomber Command Memorial features a returned crew in flying kit waiting far a straggler to land. As huge losses confirm, for many it was a one—way trip, and for some their only trip after training. Old at a mere 20, many were 18 and at least one 15 (thanks to a borrowed birth certificate! It's a fine piece of work for the lads who watched as gallons filled tanks to the brim for the long haul across Belgium and Germany... Bomber Command lost 55,573 men. Guy Gibson VC was only 24.

Our Henry

Arguably the most famous aeromodelling address in London, the four floor of Henry J Nicholls Ltd at 308 Holloway Road, London N7, offered a huge range of goodies detailed on an impressive sheet almost 10x13 inches. A picture of Henry J appeared at the top alongside the HJN winged logo. Above it all was the strapline Sign of Service. Values expressed in shillings and pence, a 10cc Nordec cast 250/- a Keil Kraft Hornet 45/- and a Junior 60 60/- (£I was 20 shillings in those days, I shilling 12 pence - old pence, of course, at 240 to a pound). Buses and trams stopped at the Nag's Head (just 2 minutes from 308) and Henry would talk to you on NORth 5161, the old telephone system then. A keen control liner himself (judgjng Stunt at Old Warden in the 19802) Henry's Mercury range included handles and wire, tanks and bell-cranks, kits and his famous Mercury fuels in a variety of labels at 3 to 4 shillings a bottle and sold throughout the UK. And that was Henry J's in the 1950s, along with Keil Kraft and Veron, approaching the zenith of aeromodelling in the UK.

Bomber War

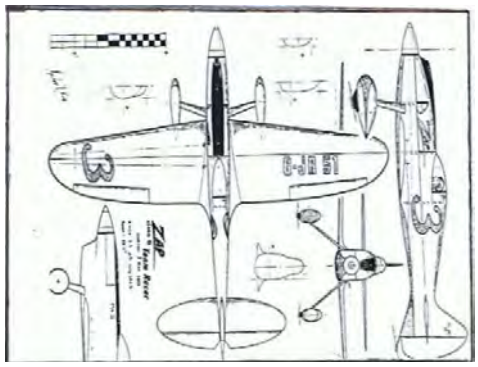
In No Moon Tonight and Journeys Into Night, Australian Dan Charlwood set out just what combat in a Lancaster was all about: intense AA fire over Bremen, close-to attackes by FW190s over Berlin, Kiel, and the Rhur. The Avro Lanc, canvas covered (unlike the B17 and 29), meant that any hole would cause a freezing gale to blow through the fuselage for the rest of the trip. And air—to—air bombing was yet another hazard. Guy Gibson's Enemy Coast Ahead
and Paul Brickhill's work puts you in the mood.

Curious Stuff

These days worth £65,000 or so, the German Enigma coding machine is essential kit for the true enthusiast. An amazing mixture of wheels and wires, much like a typewriter too, the Chiffriermaschinen can still be found - as is so much else. Even in London dealers have been known to sell things they just don't underst and and have never seen before. For example, a spring powered gyroscope stamped with. broad arrows and held in a box was, it transpired, an early guidance system for a torpedo. A broad arrow was an official UK mark.

Another Racer

Good fellow Gordon Rae wrote a valued pice for the latest SAM35 yearbook, starting with his view of the furiously fast De Havilland Hornet, much loved by Eric Melrose 'Winkle' Brown. Many VTRs appear in Gordon's famous book on racers full size and model (a few copies left on 01684 588500) and here's



Gordon's beautiful Class B Zap of 1951 for 3.5cc Amco in long shaft form. Bet the FAST club would have loved it, this proper aeroplane down to its spats and proper cockpit with pilot. A Fleet Air Arm pilot, Captain Brown has written several books, flew as a young man with Udet and has flown a huge number of aeroplanes of diverse types, both piston and jet. He is very much an enthusiast of the Guild of Aviation Artists.

Chateau Bonzo

Despite the picture on page 137 of the yearbook, I drink nothing stronger than ginger beer. Knowing that plonk can cost, I was still disturbed to see a case of a dozen at £5,100. Personally, I'd rather add a bit more and buy an Aster. A drink is a drìnk but an Aster's a joy for life.

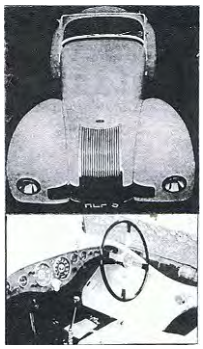
Adieu Dandy?

The glory days of big million sales no more, Dandy shifts less than nine thousand copies a week in 2012. Immortal Eagle, Lion, Hornet and Rover, Boy's Own, Wizard and Victor too, the escape to adventure within the pages of Radio Fun and the rest is of history. Highly collectable though, Eagle and its colour out in front, now a number of hardbacks store the best for us to savour again. When Comics Went To War (Adam Riches, Mainstream, £20) is a treat.

Careful Now

Rockets soared in August when Plymouth held their firework championships. A great display for sure and good for them too, more so when I read that a meeting had banned hot drinks in fear of a court action! And don't be surprised to discover hot taps that run cold. Hot water? Far too risky!

Going Well



Restoration of Allard HLP 5 - rally, trials and hill climb champion – is going well. Built in 1946 and toured around Europe in a sales push by first owner Godfrey Imhof, the JI ran in supercharged form (Nordec blower) as one of the Candidi Provocatores team. Here's a snap of the cockpit and as HLP 5 first appeared in Motor Spart. Only two exist with this bodywork.

Olympic Boon

Easy travelling, stress free shopping, expected crowds everywhere just did not happen in central London. A rare but an enjoyable experience!

Really Big Stuff

Martyn Pressnell's airship repart and old film at the BFI brought home the vastness and majesty of the airship. Big beasties, the sheds at Cardington just managed to hold our R100 and R101, and a climb to the tap. thanks to the MOD let me see the ant-like figures far below and one of these modern Goodyear jobs tiny in one corner. Engines tended in flight, 16ft props turning, rain collected to keep ballast tanks topped up, flights to America referred to as 'sailings'. At 800ft and more, silvery and graceful, our means to connect the Empire, safer gas may have let them fly a little longer Thanks, Martyn.

Good Old Wood

Time spent at a club on the Thames confirmed my faith in the future of wood. Several boats were there, those in wood in the majority by far. Well cared for and regularly painted or varnished, a racing dinghy such as a Merlin Rocket or International 14 will last for years (some 14s date back to the 1920s) and, some say, repairs to wood are easier and long lasting. Uffa Fox was our leading designer either side of the war and here is his National 18 drawn up in 1938. In discussions with Sir John Field Beale, Uffa designed the 20ft Flying Fifteen — one of the first to appear in GRP in I952,

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I've now got one of these hats and have to say they are really good. The peak is a reasonable size and really helps when the sun is in the way (OK I know that doesn't happen often) When I buy something from Peter I get hold of Swiss Fr from the bank and post to him, that's about the easiest way JP

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Black Hawk Models – Phantom Cub

Being the UK dealer for Black Hawk Models (www.densmodelsupplies.co.uk) I regularly correspond with owner Larry Rice and occasionally send him info on our British tastes in model aircraft design. BHM is based in Long Beach, California and specialises in re-manufacturing traditional American balsa kits. One of BHM's specialties is the reproduction of the range of small, Cox 049 powered, solid log fuselage, Walt Musciano Control Line designs that were so popular in the States in the 50's and 60's. These designs were kitted by the Scientific Company and sold in their thousands following the introduction of the Cox 049.

A few weeks ago I had a mysterious e-mail from Larry, informing me that there was a surprise on its way to me and here it is:-

As you can see, Larry has based this design on the Mk 1 Phantom Mite and has called it the Phantom Cub. Typically BHM, It has a solid log fuselage although the mid – section is hollowed and so a tank can be mounted in there. I had a nice little Derek Giles 0.5cc Elfin just waiting for a suitable model and this was perfect.

Larry has asked if there would be any interest in kitting this design for the UK,I have told him that I think it unlikely…but perhaps I'm wrong…if so let me know at den@denandtheartof.co.uk

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