Sticks and Tissue No 110 – January 2016

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.

Tony Thorn at Middle Wallop with his Jimmie Allen photo Brian Beacham

From Boycott Beale

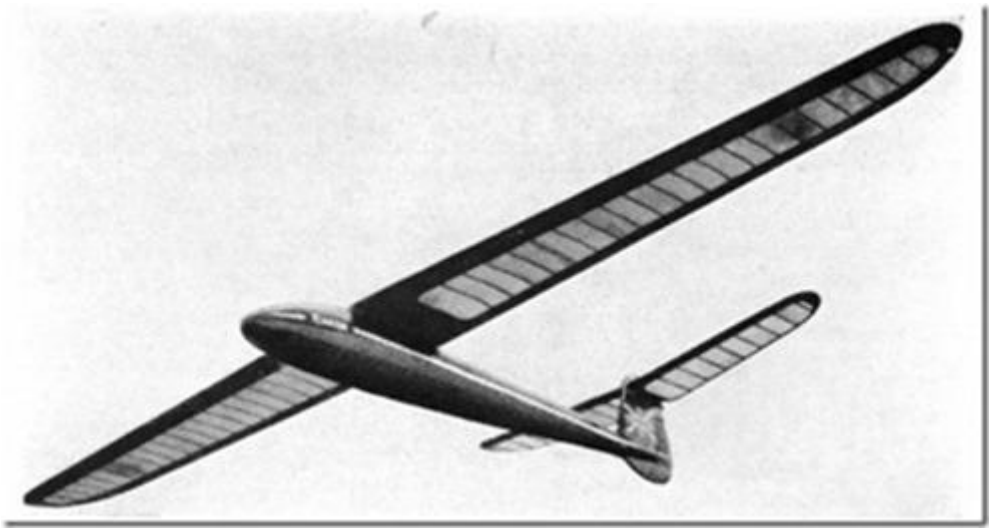
I have had to draw up and make one of my own to fill in time with it is an Abzug S4 Shrimpo at 150% shown he getting its final inspection before testing, just need the time and conditions to gel and we can commit aviation, it is being closely followed down the production line by an enlarged Pee Wee Pal

Old School MAF Coquette 46”

From– Peter Michel

Tony Green, a member of the informal Bangers & Mash club which uses Epsom Downs, spotted an old glider (top picture) hanging from the ceiling at a local junk shop. Keen to know what it was he emailed a picture to me, hoping I might be able to shed some light on the matter. Glad to say I was able to help because I am the proud possessor of Model Sailplanes, a book by that great glider man of the 1930s, Leofric George Temple. There on page 5 is a splendid flying shot of his Cracow II (lower picture) which matches the "mystery model" discovered by Tony. The plan is in the back of the book. The author wrote: "Cracow is 6ft. in span and built entirely of hardwoods. This model is equally suitable for hand- or tow-launching and is an excellent medium-sized machine."

Temple established a reputation as THE glider guru which lasted well into World War II and beyond. But some would question the flying capabilities of his undoubtedly elegant designs. For instance, we Bangers & Mashers were astonished when one of his most famous designs, the Celestial Horseman, actually went inverted on the line. I have never seen a Temple glider, when flown free-flight that is, fully justify the effort put into its complicated construction – although they would all probably go well off the slope, fitted with two-channel RC.



A 63" WINGSPAN SLOPE SOARING FLYING WING WITH POWER CONVERSION (·75 TO 1·5cc; ·049 TO ·099 cu.ins)

CLWYD QUEEN

DESIGNED BY

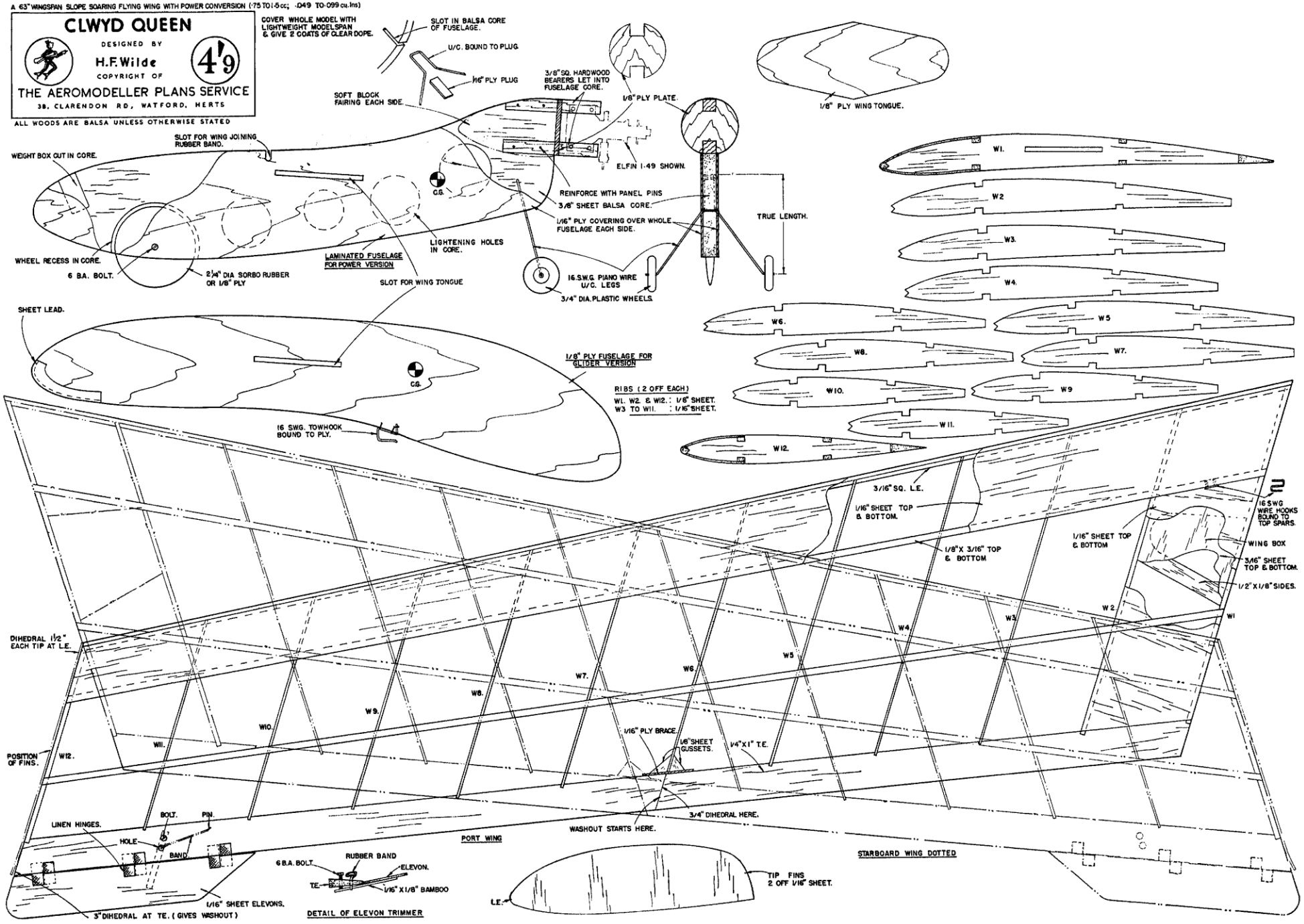
H.F. Wilde

4'9

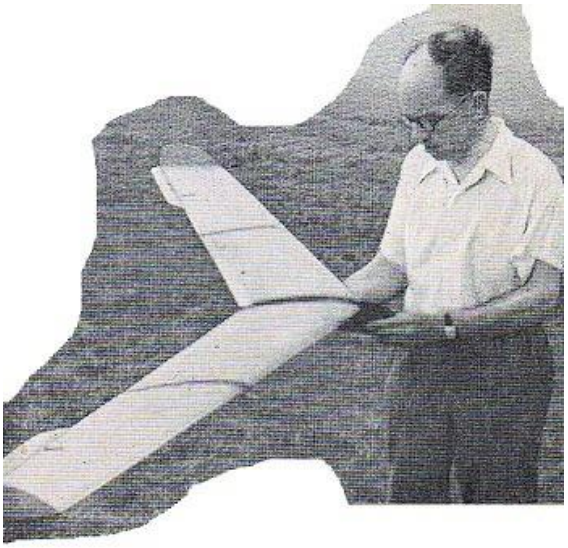
THE AEROMODELLER PLANS SERVICE

38, CLARENDON RD, WATFORD, HERTS

ALL WOODS ARE BALSA UNLESS OTHERWISE STATED



A universal 63in span tailless model that can be either power or glider. British record holder in two classes. by H. F. WILDE from aero modelfrom aero modeller July 1956



With Less construction involved, and definitely less susceptibility to damage, the tailless model is a fascinating subject, particularly when one is presented with a design that holds two British National records. The "Queen" of which no less than three have been lost on the Ciwyd slopes, established a lightweight record of 9:51 in 1954 and a record with F.A.I. wing loading of 3:17 as far back as 1949. In its latest version, as presented here, it can be flown in three forms, either for slope soaring, two-launching or as a power model for up to 1.5 c.c.

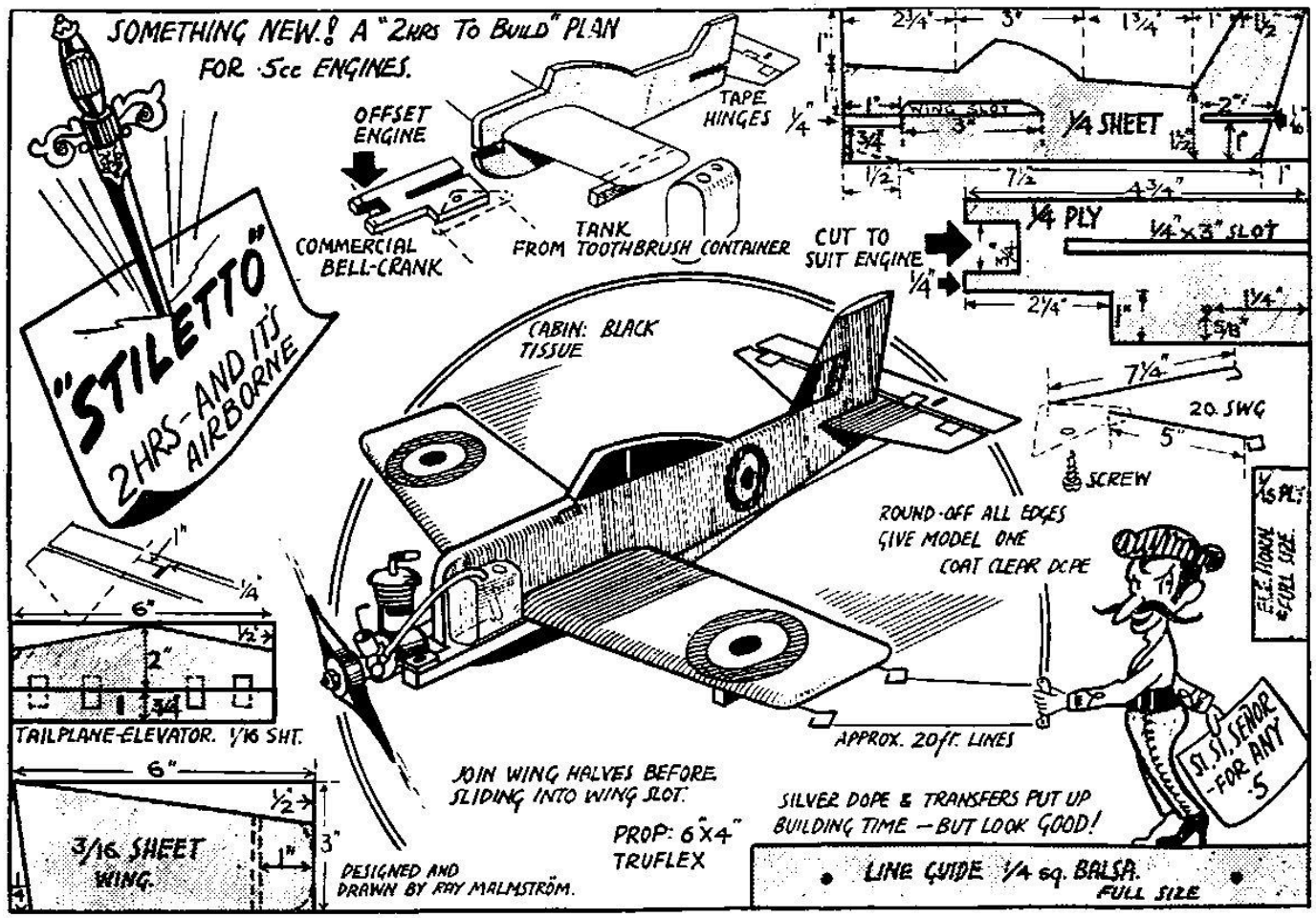
Construction is both simple and inexpensive and naturally enough begins with cutting out the wing ribs which change in section from root to tip. Pin down the two lower spars over the plan, cementing the ribs in place, using packing strips where necessary to provide a wash-out and add the two top spars. Make sure that the root tip is at a slight angle, to allow for dihedral, and the tip rib W.1 2 should be inclined at the same angle to keep the tip fins vertical. Now add the leading edge to the ribs, remove the wing from the plan. Joint the trailing edge at W.6, then fit to follow the lower profile of the ribs at all points. Now pin down wing on the board except for the outer trailing edge portion and insert packing under the trailing edge to obtain the correct wash-out angle before cementing firm linen patches over the trailing edge joints are advised. Attach the leading edge sheeting on the upper surface, remove from the board and build on the underside.

Now make the two wing boxes from hard balsa; pre-cementing or using a slow-drying glue. Before fixing the wings, cheek for alignment with the tongue in place between the two wing panels. Fit the elevons while the box assembly is drying in position, and then finally complete the wing by sheeting the centre bay on both surfaces, then cover with heavyweight Modelspan. The original is covered with yellow tissue to show up amongst the countryside when landing on the slopes of Clwyd.

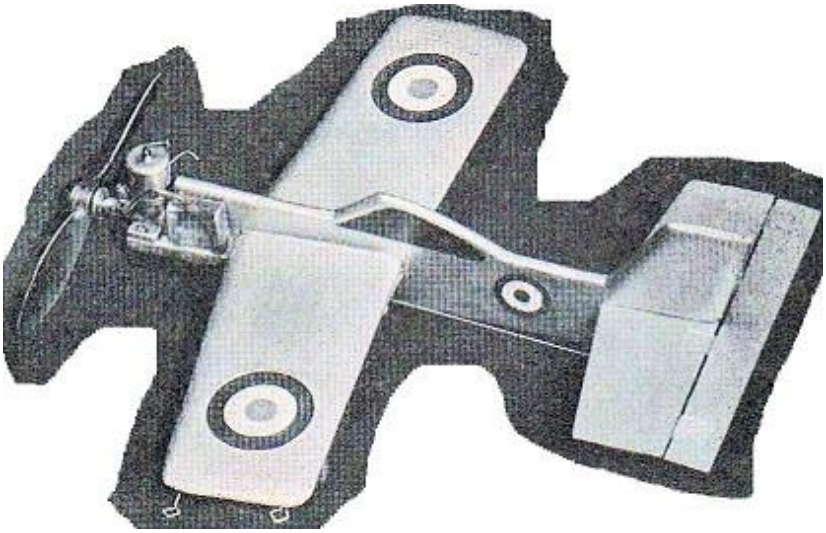
Trim for hand-launch on level ground, the correct position of elevons being with them following the contour of the underside of the wing. If the "Queen" turns right or left, screw down the elevon on the outside of the turn. When a satisfactory glide has been obtained, add an extra ounce of nose weight for flying from a slope. It should sweep away, climbing steadily in the wind. The power version has actually flown with an Elfin 2.49, but more modest power is recommended, at least to start with. For a safe flight pattern use a left hand circuit with the port elevon screwed down half a turn at a time on the trimming bolt to obtain the desired rate of turn.

Karl Gies

I was very sad to hear of the passing of Karl on Dec 21st, as you know he sent in photos of his models most months. Condolonces to his family

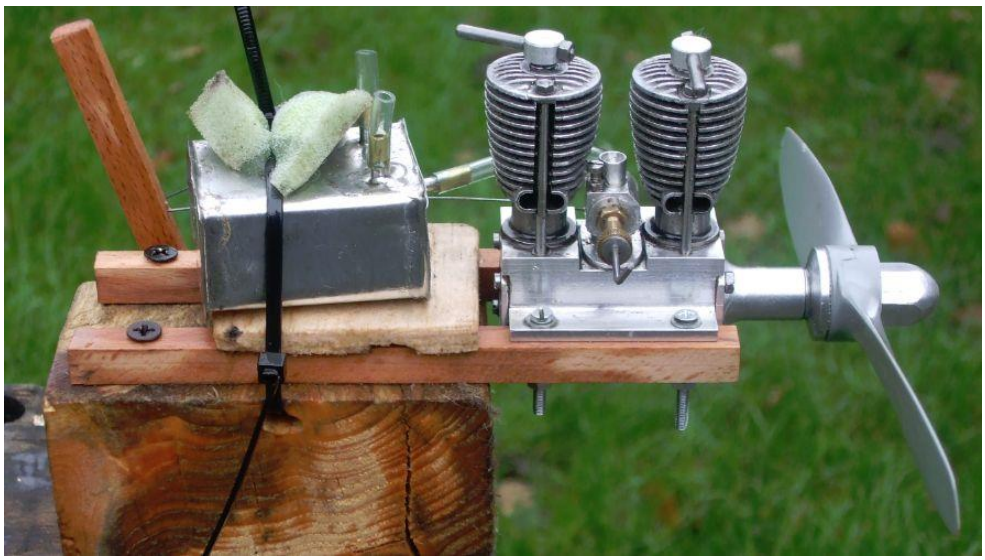


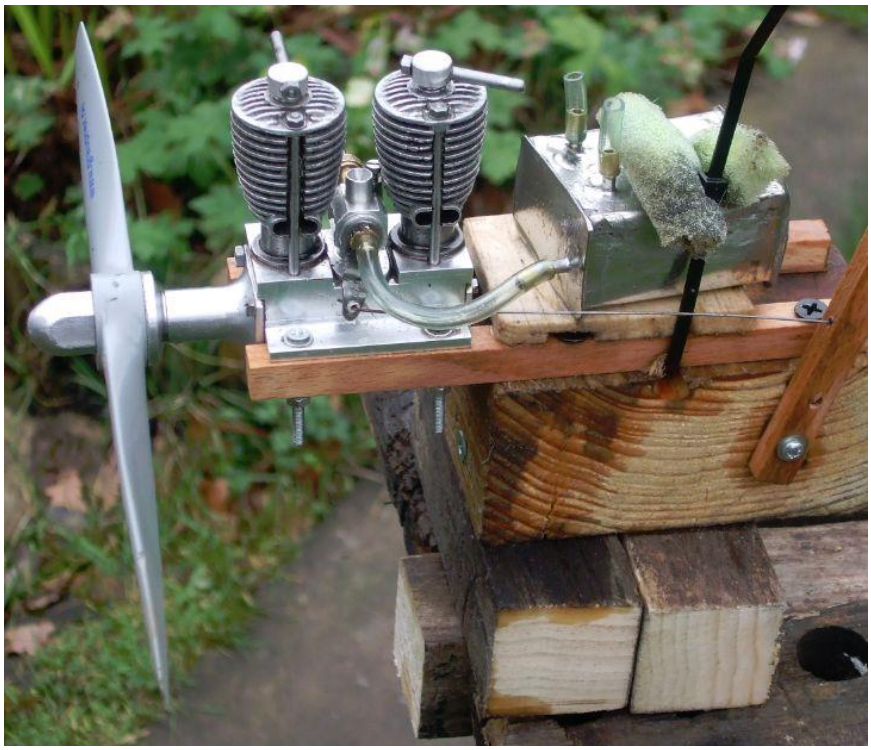
Stiletto by Ray Malmstrom From Aeromodeller July 1956



Who's for a crashproof, cheap, easy-to-build control liner that you can assemble from ply and balsa in a couple of hours, ready for a spot of line circulation? Ray Malmstrom's latest masterpiece has a Spanish air about it, but you won't have to dress up like a Toreador to fly it!
For the youngster who wants to get used to control lining without risk of pranging an expensive kit, or for the experienced man who wants to run in his new .5 c.c. diesel, Stiletto is the answer. Simply transfer the dimensions given for the wing, tailpiane and fuselage on to balsa sheet, making the wing joint a firm one in the centre with perhaps a ply brace from panel to panel, and cut the elementary plywood engine mounting plate from an old piece of packing case or anything that looks handy for the job. The tank is a transparent toothbrush container cut down to size with the ends blanked off, and a couple of holes pierced through for the fuel leadand filler. You'll have to buy a small size bellcrank for a few coppers and link up the controls so that the elevator is neutral when the two lead out wires, bent from 20 gauge piano wire, are equal in length at the wingtips. Stiletto flies well on any line length, from 12 to 25 ft., but 25 ft. of fishing line is advised, and even if you do try to stab it into the deck, you will find that, providing a plastic prop is used, there will be no more damage except perhaps a bent wing. which can be put right with a dab of cement. Original Stilettos have been doped silver all over with commercial transfers to boost the appearance.

Photos of Tony Tomlin's twin made by Derek Collin as you can see using Frog cyliners



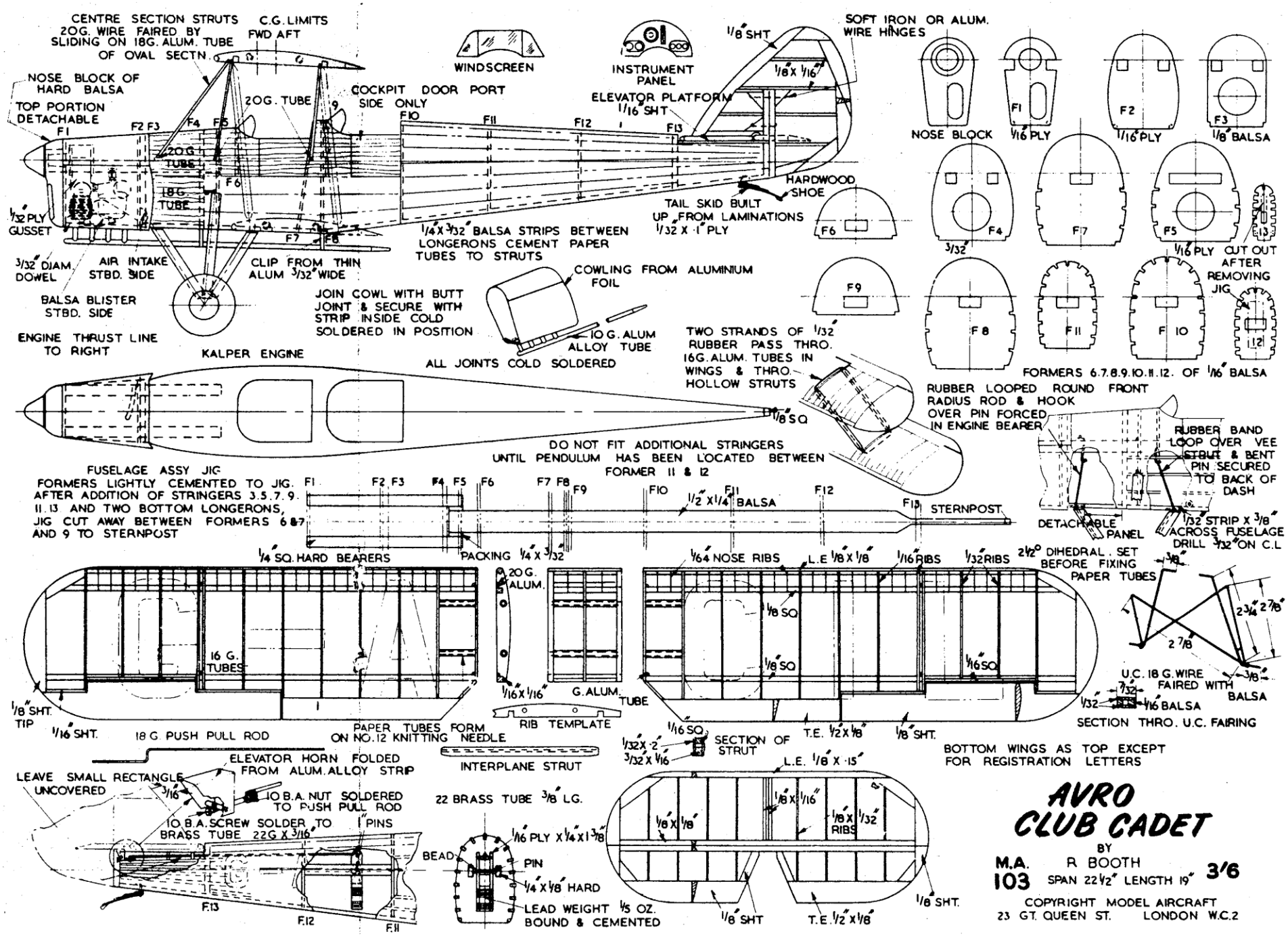


Harry Hundleby designed Sparky nearly ready for covering. Fitted with a Frog 100 twin built by Derek Collin. Span 48".

Photos from Brain beacham

Nomad taken at Middle wallop

John Taylor's Southerner taken at DMFG site


CENTRE SECTION STRUTS 20G. WIRE FAIRED BY SLIDING ON 18G. ALUM. TUBE OF OVAL SECTN.
C.G. LIMITS FWD AFT
NOSE BLOCK OF HARD BALSA
TOP PORTION DETACHABLE
20G. TUBE
COCKPIT DOOR PORT SIDE ONLY
WINDSCREEN
INSTRUMENT PANEL
1/8" SHT
1/8" X 1/16"
ELEVATOR PLATFORM 1/16" SHT
SOFT IRON OR ALUM. WIRE HINGES
NOSE BLOCK
1/16" PLY
1/16" PLY
1/8" BALSA
20G. TUBES
18G. TUBE
1/32" PLY GUSSET
3/32" DIAM. DOWEL
AIR INTAKE STBD. SIDE
BALSA BLISTER STBD. SIDE
ENGINE THRUST LINE TO RIGHT
KALPER ENGINE
CLIP FROM THIN ALUM 3/32" WIDE
1/4" X 3/32" BALSA STRIPS BETWEEN LONGERONS CEMENT PAPER TUBES TO STRUTS
HARDWOOD SHOE
TAIL SKID BUILT UP FROM LAMINATIONS 1/32" X 1" PLY
3/32"
1/16" PLY
CUT OUT AFTER REMOVING JIG
COWLING FROM ALUMINIUM FOIL
JOIN COWL WITH BUTT JOINT & SECURE WITH STRIP INSIDE COLD SOLDERED IN POSITION
10 G. ALUM ALLOY TUBE
ALL JOINTS COLD SOLDERED
TWO STRANDS OF 1/32" RUBBER PASS THRO. 16G. ALUM. TUBES IN WINGS & THRO. HOLLOW STRUTS
FORMERS 6.7.8.9.10.11.12. OF 1/16" BALSA
1/8" SQ
RUBBER LOOPED ROUND FRONT RADIUS ROD & HOOK OVER PIN FORCED IN ENGINE BEARER
RUBBER BAND LOOP OVER VEE STRUT & BENT PIN SECURED TO BACK OF DASH
DO NOT FIT ADDITIONAL STRINGERS UNTIL PENDULUM HAS BEEN LOCATED BETWEEN FORMER 11 & 12
FUSELAGE ASSY JIG
FORMERS LIGHTLY CEMENTED TO JIG. AFTER ADDITION OF STRINGERS 3.5.7.9. 11.13 AND TWO BOTTOM LONGERONS, JIG CUT AWAY BETWEEN FORMERS 6 & 7 AND 9 TO STERNPOST
1/2" X 1/4" BALSA
STERNPOST
DETACHABLE PANEL
1/32" STRIP X 3/8" ACROSS FUSELAGE DRILL 3/32" ON C.L
1/4" SQ. HARD BEARERS
PACKING 1/4" X 3/32"
1/64 NOSE RIBS
L.E. 1/8" X 1/8"
1/16" RIBS
1/32" RIBS
2 1/2° DIHEDRAL. SET BEFORE FIXING PAPER TUBES
3/8"
2 3/4"
2 7/8"
2 7/8"
16 G. TUBES
20 G. ALUM.
1/8" SQ
1/8" SQ
1/16" SQ
1/16" X 1/16"
G. ALUM. TUBE
U.C. 18 G. WIRE FAIRED WITH BALSA
7/32"
1/32"
1/16" BALSA
SECTION THRO. U.C. FAIRING
1/8" SHT. TIP
1/16" SHT.
18 G. PUSH PULL ROD
PAPER TUBES FORM ON NO. 12 KNITTING NEEDLE
RIB TEMPLATE
1/16" SQ
1/32" X 2"
3/32" X 1/16"
SECTION OF STRUT
T.E. 1/2" X 1/8"
1/8" SHT.
BOTTOM WINGS AS TOP EXCEPT FOR REGISTRATION LETTERS
INTERPLANE STRUT
ELEVATOR HORN FOLDED FROM ALUM. ALLOY STRIP
LEAVE SMALL RECTANGLE UNCOVERED
3/16"
10 B.A. NUT SOLDERED TO PUSH PULL RODS
10 B.A. SCREW SOLDER TO BRASS TUBE 22G X 3/16"
1" PINS
22 BRASS TUBE 3/8" LG.
1/16" PLY X 1/4" X 1 3/8"
BEAD
PIN
1/4" X 1/8" HARD
LEAD WEIGHT 1/5 OZ. BOUND & CEMENTED
L.E. 1/8" X .15"
1/8" X 1/16"
1/8" X 1/8"
1/8" X RIBS
1/32"
1/8" SHT
T.E. 1/2" X 1/8"
1/8" SHT.
F.13
F.12
F.11
AVRO CLUB CADET
BY
M.A. 103
R BOOTH
SPAN 22 1/2" LENGTH 19"
3/6
COPYRIGHT MODEL AIRCRAFT
23 GT. QUEEN ST. LONDON W.C.2

AVRO Club Cadet 22 ½“ span FF model by Ray Booth from Model Aircraft May 1951

The “638” was one of several versions of the Cadet designed and produced by A. V. Roe & Co. Ltd., Manchester, during 1932.
The prototype Cadet—type “ 631 “—was a heavily staggered two-seat biplane fitted with a 7-cylinder Armstrong-Siddeley “Genet Major” 135 h.p. engine, and was very similar in appearance to the standard R.A.F. Trainer of that period, the Avro Tutor (“ 621“), although the “631“ had a much lighter airframe than the Tutor.

Fuselage

Build up the fork-shaped fuselage jig from ½ in. X 1/4 in. balsa, 1/4 in., square hardwood and 3/32 in. X 1/4 in. balsa as shown on the plan. Carefully trace the various former shapes on to thin tracing paper and cement these tracings on to the appropriate material specified on the plans. Cut and slot as indicated.
Lightly cement the formers to the jig and when dry add two bottom longerons and stringers Nos. 3, 5, 7,9 , 11 and 13 (all 1/8 in. X 1/16- in.). Ensure that former No. 7 is inclined at the correct angle before commencing attachment of stringers and longerons. When dry cut away jig between formers Nos. 6 and 7, and No. 9 to stern post. Add nose block and 1/32nd sheet ply gusset under engine bearers.
At this stage it is necessary to construct and fit the pendulum. Commence by cementing the two ¼ in. x 1/8in. members between formers Nos. 11 and 12. Be particularly careful that the balsa used for these two members is really hard. The actual pendulum is extremely simple to assenble. First cut two lengths of 1/16 in. sheet ply 1/4 in. wide X 1 3/8 in. long, radiused at one end. A 1/4 in. cube of hard balsa is used as a distance piece, and a suitable weight (approximately ¡1/5 oz.) is securely bound and cemented between the two lengths of ply. The pivot point of the pendulum is bushed with 22-g. brass tube 3/8in. long. A straight pin 1 in. long locates the pendulum between the two balsa side members, and to maintain free movement fore and aft two glass beads are placed either side of the pendulum. The importance of ensuring that the pendulum is mounted so as to be freely-swinging cannot be over emphasised. The push-pull rod is formed to the shape given on the drawings from 18-g. steel piano wire, a 10-B.A. brass nut is soldered to the end of the short leg and a 3/16- in. length of 22-g. brass tubing to the long (forward) leg. Assemble rod to pendulum before adding remaining stringers (all 1/8in. x 1/16- in.). Bend pins to hook form and fit inside fuselage as shown. Two short lengths of 3/32 in. dia. round dowel are cemented at the bottom of the fuselage between former2 Nos. 1 and 2. Cut elevator platform from 1/16in. sheet and cernent in position, taking care that it is located at the same angle as that shown on the drawing.
The swivelling tail skid is constructed from strips of 1/32 in. ply 0.1 in. wide, laminated and bound together. Two hard balsa strips in. 1/4 X 3/32 in. are cemented across the fuselage between the bottom longerons. Paper tubes—formed around a No. 12 knitting needle—are securely bound and cemented to these strips for attachment of lower wings.
20-g. aluminium tubes are fitted for attachment of centre-sections struts, prior to covering fuselage completely between formers Nos. 3 & 4 with 1/32 in. sheet balsa. The upper portion is also sheeted between formers Nos. 4 to 10 inclusive.
A length of 18-g. brass tubing is fitted to the forward face of former No. 5, and into this tube fits the main undercarriage leg.
Two strips of ply 1/32 in. thick x 3/8 in. wide are fitted to the underside of the fuselage for attachment of front and rear radius rods of the undercarriage

Upper Centre Section Wing

Roll two paper tubes (each 1 7/16 in. long) around a No. 12 knitting needle, and leave to dry thoroughly. Carefully trace off the rib shape (including slots for spars) on to thin tracing paper and cement on to thin tin. Allow to dry and cut out with extreme care, afterwards smooth edges with fine emery cloth or glass paper. Drill two 3/32 in. dia. holes in template at the positions shown on drawing. For the centre section two 1/8in. ribs are required and one 1/16in. The trailing edge portion aft of the rear spar is cut off from these three ribs,

as indicated in Section B-B. 20 g. aluminium tubes are fitted in to the centre section for attachment of struts. These are formed from 20-g. piano wire with the ends bent at right angles for about 1/2 in. When the second bend has been made in the wire, place the strut on a solid surface and flatten the 18-g. tubing on to the 20-g. wire with a pencil.

Wings

For each wing four ribs are required from 1/16in. sheet and eight from 1/32 in. sheet, with twenty riblets from either 1/64 in. or 1/32 in. sheet, depending on individual builders' opinions. The 16-g. aluminium tubes "sandwiched" between the two 1/16in. sheet ribs are for inter-plane strut attachment. The 16-g. tubing cemented to the outboard face of the root rib is to enable the landing and flying "wires" (1/32 in. sq. rubber) to be threaded through the wings after covering. Before cementing wing paper tubes into position, pin down upper centle section on to flat building board. Push 1/32 in. dia. dowels into C/S and plug on mainplane, raising the tip 15/32 in. so as to give 2 1/2 deg. dihedral. With the tip supported, firmly cement paper tubes in wing roots. Leave to dry thoroughly before removing support.

Inlerplane Struts

Each strut is formed from two pieces of 1/32 in. sheet, 0.2 in. wide by 3 19/32 in. long, one piece of 1/16in. square X 3 19/32 in. long and one length of 1/16in. X 3/32 in. X 3 19/32 in. long. Joint as shown on the drawing, leaving hole down centre of strut. and when dry sand to streamlined section.

Undercarriage

The wire undercarriage is formed from 18-g. piano wire to the dimensions given on the drawing.
After shaping, build up the balsa fairings around the wire from 7/32 in. X 1/32 in. strips (either side of leg), 1/16 in. square (forward) and 1/16 in. X 3/32 in. (aft). Cement up and when hardened sand to the section illustrated.

Cowl

Although the prototype model was fitted with a cowl formed from thin (approx. 0.003 in.-0.005 in.) aluminium sheet and an aluminium tube (10-g.) exhaust pipe, a suitable alternative would be thin celluloid with celluloid tubing for the exhaust pipe.

Covering, Colouring and Assembly

Cover entire model with lightweight " Modelspan." Water spray undersides of wings and tailpiane, and when dry give one coat of clear dope. Pin wings and tailplane down on to a flat board and water upper surfaces. Give one coat of clear dope and do not remove pins until dope is thoroughly dry. Tailplane and elevator are joined together after doping by means of tissue paper hinges. The entire machine is finished in silver with the struts, registration letters, and wheel centres coloured red.

The author's machine was powered by the Kalper 0.32 c.c. diesel, and the use of this engine is recommended. However, any of the other small motors up to 0.5 C.C., such as the American K. & B. " Infant," Allbon " Dart," etc., would be a suitable alternative. Irrespective of the type of engine fitted, it is essential that the thrust line is off-set 3 deg. to the right (aircraft viewed from above, looking forward).

Flight tests have shown that the elevator should be set between — 2 to — 4 deg. (i.e., Up) when the aircraft is in normal flying position. The actual angle will depend upon the location of the model's c.g. If, during static tests, the model balances at some point outside the limits shown on the plan, it is necessary to add ballast to suit. For initial ffight trials choose a completely calm day. With the motor running at about half maximum revs., allow the model to attempt a take-off . Carefully watch the direction the machine turns both under power and during the glide, remembering that a STRAIGHT flight under power followed by steep turn during the glide, is best corrected by either increasing or reducing the amount of side thrust, as the case may be. After trimming the author's machine climbed gently to the left, i.e., with the torque, under power, and to the right on the glide. Longitudinal trim can be adjusted by varying the angle of incidence of the elevator.

The writer would like to express his appreciation for the valuable assistance given by the Publicity Department of Messrs. A. V. Roe & Co. Ltd., and also by the late Eddie Riding, for information he supplied just before his tragic death.

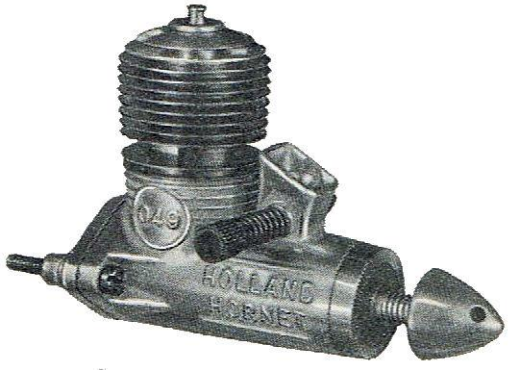
From Adam Chambers

Pics of a Cleveland Viking built from a Belair Kit. 62 inch span, 2.4 llbs auw. Power is a 3 cell powered 300w set up taken from a dead artf foam model and given a new, better life. Battery access is from underneath . 12/6 prop. Covering is natural (no paint) solartex. Looks like tissue and very supple in application and lighter . Just awaiting windscreen material and at least 5 minutes of dry weather to test fly.

Belair

http://belairdigital.co.uk/detail.asp?id=998

Viking - 62" cabin model
Sales price: £55.00 Inc VAT

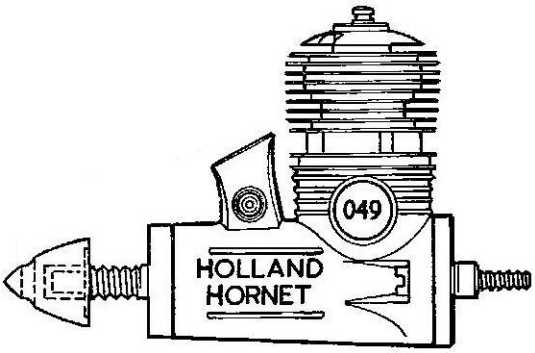


.8 cc Holland Hornet Aero Modeller December 1958

Probably the majority of aeromodellers in this country have come to regard the under 1 c.c. glow motors so widely favoured in America as having a poor power output, when compared with our diesels. The glow motor generally realises its peak performance running very fast and it speeds up very much more in the air than a diesel. Hence static test figures tend to flatter the diesel in terms of measured output.

When one finds a baby glow motor of this size giving a "diesel" performance, therefore, it can be reckoned as exceptionally good. The new Holland "Hornet" comes into this category. As first tried out with the standard head we rated it as just another glow motor, very easy to start and with a fine turn of speed. Then repeating the tests with the same series of propellers, but using the special "hot" head, a very substantial improvement in performance was at once apparent—such an improvement that a peak of around .06 BHP plotted at just under 16,000 r.p.m.

For a start the Holland "Hornet" looks a nice engine— and it is beautifully made and finished. It has a rather unusual barrel-shaped crankcase which, used on the British Elfin looked rather ugly and cumbersome. On the "Hornet" the shape is tapered and the spinner shape also blends ncely into this taper. So it looks right, if a little heavy (which it is). The soft steel cylinder, typical of American practice, means that very thin fins can be used, which again enhance the appearance.



The crankcase casting is bright finished by wet tumbling and there are sonic neat detail design features. On top of that the "Hornet" comes in a "styIed" package, resting in rigid foam material covered by a fully- transparent "lid" in thin clear acetate—complete also with spanner and a beautiful nylon propeller. Many a modeller would buy one just on appearance, and he would not be disappointed with the performance either!

The "Hornet" likes to be reasonably "wet" for starting and starts best with the needle valve opened a turn or two from the running setting. With propeller diameters ranging from 7 inches down to 4x inches it then starts readily with a flick or two and once running the glow plug can be disconnected immediately without

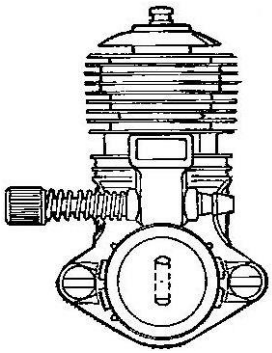
fear of stopping. Because of such excellent starting characteristics, something approaching the ideal engine for a beginner—it is an example of why so many American modellers prefer glow because of their easy starting characteristics.

We found the low speed performance relatively good, too. Using larger diameter propellers to pull the r.p.m. down below 10,000, torque continued to rise slightly, but it was not too happy on high pitch propellers. About the ideal size for sports flying would appear to be the American Tornado 6 x 3 or 6 x 4 moulded nylon propellers, either probably approaching peak r.p.m. in the air. The moulded nylon propeller supplied with the "Hornet" is 5-in. diameter by 4-in, nominal pitch.

This gave around 12,000 static r.p.m. in British autumn weather on standard fuel with nitro added, and in Californian conditions, 18,000 r.p.m. is reached in maker's claims.

The alternative "hot" head has a sharper conical taper and a smaller clearance around the platinum wire element, It also reduces the effective head volume in the approximate ratio of 7 : 5, thereby increasing the compression ratio This increase in compression ratio has a definite effect on starting characteristies. The engine is still easy to start but now has a certain tendency to kick back and generally needs more flicking to get going. The "Hornet" is also less happy running at 10,000 r.p.m. and below with the "hot" head, being effectively too far "advanced" in timing for speeds of this order. But there is a substantial increase in r.p.m. with any particular propeller load and also a marked improvement in torque and power output, the latter now peaking at an appreciably higher figure. With either head the running was most consistent at all speeds

and the engine very easy to handle. Timing is fairly orthodox. The intake opens at around 45 degrees after B.D.C. and closes some 30 degrees after T.D.C. The square-cut port gives sharp cut-off. The transfer opening is approximately 90-95 degrees and the exhaust opening approximately 140 degrees.



Constructionally the "Hornet" features a heat-treated soft steel cylinder which screws into the main crankcase unit and seats without a gasket. Cooling fins are turned integral with the upper cylinder, which is carried on two thick sections above the lower flange. Large diametrically-opposed exhaust ports are cut in this section. Diametrically-opposed transfer ports are cut inside the cylinder, at right angles to the position of the exhausts and terminating in the solid "pillars", giving an appreciable overlap. The cylinder bore is extremely well finished, possibly by lapping since the type of transfer porting would appear to preclude conventional honing (i.e., the stones would tend to catch in the transfer passages).

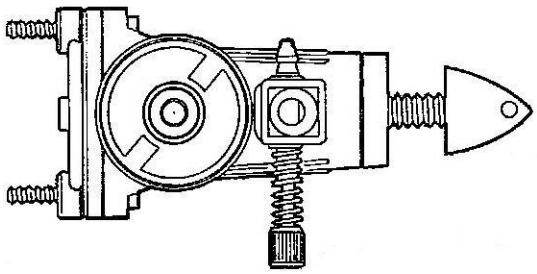
The piston is quite light, machined from steel and hardened. A socket fitting for a ball-shaped little-end on the conrod replaces the conventional gudgeon pin, the central recess in the piston being neatly swaged over to a very good fit.

The connecting rod is turned from light alloy with a relatively narrow neck immediately under the ball end (little-end). The big-end is also small in diameter (.107 in.), but conventional.

The crankshaft appears relatively massive for a glow motor of this size. It is .280 in. in diameter, stepping down to .163 in. at the propeller shaft end (ANF No. 8 thread). The central hole through the shaft to the square port is also large, removing the buik of the metal, so the final weight of the shaft is not excessive (less than 1/4 ounce). The crank web is only 1/2 in. diameter, relatively narrow and machined away in the form of a counter weight. The crankshaft is hardened and ground to finish whilst the intake port appears to have been finished by broaching and has exceptionally clean edges.

The comparatively tiny crankcase casting weighs a little over half an ounce. This is largely because the whole front section is solid. The plain bearmg runs the full length of this solid section and has an oil way (groove) formed along the bottom but not quite extending to the front. The bearing appears to have been finished by a light honing and was very smooth and an excellent fit with the shaft. The only machining operations done on the crankcase casting are facing for the crank web, finishing the bearing, facing the top (where the cylinder flange rests) and threading, apart from a small vertical oilway above the inner end of the bearing which is simply punched. The intake tube, formed integral with the crankcase casting, is square in section, matching the square port cut in the crankshaft, It is, however, fitted with a conventional venturi-shaped restrictor locked in place by the spraybar.

A steel spacing washer is located on the shaft immediately behind the propeller driver, wisely provided with the idea of preventing alloy to alloy contact should the engine be operated as a pusher power plant.



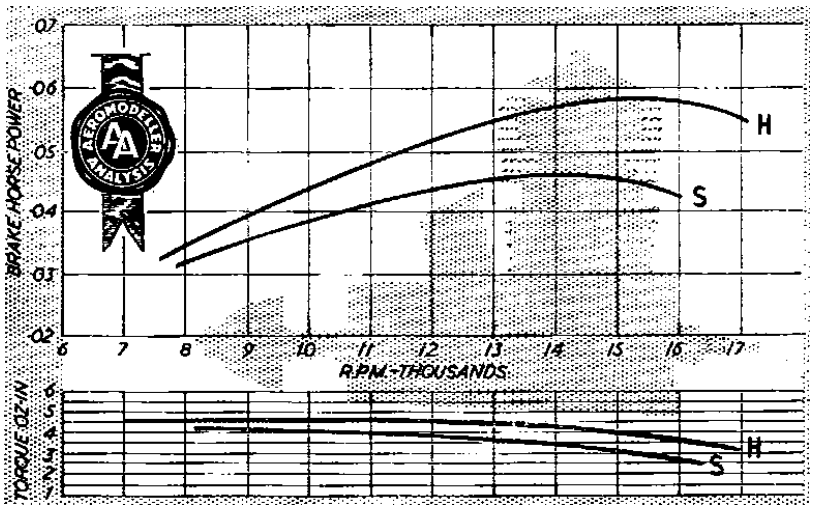
On the standard engine the back end is completed by a cover plate plugging into the crankcase rear and secured with two bolts. An ingenious bar "fix" takes the place of nuts. The idea is that this bar is mounted behind the firewall (front former) of the model, using the central screw provided. Two pipa cast into the front face of the bar lock the bar against the ply. The two engine bolts then simply screw into the tapped holes in each end of the bar. The tank unit supplied as an extra is equally ingenious This has a spigot-shaped end which plugs into the engine crankcase instead of the standard cover. Longer mounting bolts are now required which pass right through the tank—again to locate in the aforementioned bar fixed behind the firewall. The tank is divided into two compartments, the lower one (which carnes an external feed pipe) being shut off (and thus continuing to provide a metered supply governing the engine run) by the operation of a spring loaded plunger by the flight timer.

Summarising, a thoroughly likeable little engine which would appear more than capable of holding its own on performance as well as possessing something extra in the way of first class workmanship and eye-appeal. A lot of careful thought has gone into its design and development—and an equal amount of care into its production. This would probably also account for its somewhat higher than average price for an American 049 of approximately 50s. (the equivalent of around 60s. with tax added, in this country).

SPECIFICATION
Displacement: .795 c.c. (.04895 Cu. in.
Bore: .422 in. . Stroke: .350 in.
Bore/strokc ratio: 1:2:1 weight: 2 ozs.
Max. B.H.P.:
(hot head)—.058 at 15.500 r.p.m. (Standard head)—.047at 14,000 r.p.m.
Max. torque: (Hot head)—4.5 ounce-inches at 9,000 r.p.m. (Standard head)—4 ounce-inches at 9.000 r.p.m.
Power rating:
(Hot head)—.0725 b.h.p. per c.c. (Standard head)—.059 b.h.p. per c.c.
Material specification:
Cylinder: leaded machine steel
Piston: carbo-nitrided steel
Con rod: (Ball and socket little-end) test aluminium alloy
Crankcase: light alloy die casting
Crankshaft: carbo-nitrited steel
Bearing: plain; broached and carbide burnished Spravbar: steel
Prop. shaft: American NF No. 8 thread
Cylinder head: aluminium (integral element)
Price $6.95
Manufacturer: Holland Eng. Co., 12929 Saticoy St., North Hollywood. California

Prop RPM figures		
Propellor Dia x pitch	Standard head RPM	Hot head RPM
6 x 4 (Tornado	11,500	12.400
6 x 3 Tornado	12,200	13,200
6 x 4 Frog nylon	11,600	12,600
5 x 3 Trucut	12,800	14,000
6 x 3 Trucut	10,000	11,000
5 x 6 Frog plastic	10,200	11,300
6 x 6 Frog nylon	9,000	9,800

Fuel used : Mercury No 7



From Bryan Passey

I enclose some photographs of my Vickers Viscount control line model.
It was built from a plan that appeared in the Aeromodeller for July 1958,and designed by J M Bodie,an exponent of multi engined control liners at that time. I had already built his Handley Page Halifax,and this model was the natural progression.
My model does differ in a couple of ways to the plan though,The undercarriage is not the bent up piano wire ,and bound to bearers type that you would see on many models (even today) but made from brass tube and silver soldered to a thick brass plate that in turn is screwed to the mounting bearers.This allows the construction of the undercarriage on the bench,so that it is easier to add details and to repair if it gets damaged.I used this system on the Halifax and on the D H Mosquito that I built recently, again from an old Aeromodeller plan.
The model is powered by two A M 2.5cc diesels on the inboard nacelles and two A M 1.5cc diesels on the outboard ones.I haven't dared to weigh it yet as a whole church roof was required up front in the nose wheel bay to achieve the correct C/G.
Car spray was used for the finish,but if I were to build anything of this size again I think proper spraying equipment would be used,and it would be certainly cheaper,and I think the result would be better!
Following this model my next challenge is to be Bill Dennis's Handley Page 0/400 for twin diesel powered free flight.Both Bill and Mike Smith have been most helpful in offering advice,and filling in gaps on the plan that appeared in an American publication entitled R/C Model Builder that I was able obtain.But that's another story for another time .
The Viscount should get it's first outing at our Fly for Fun event at Machrihanish air field in April.You may well ask why wait that long,it's only because the nearest area of tarmac is at Machrihanish and that's a 120mile round trip,the rest of Argyll is up or down or expanses of water!

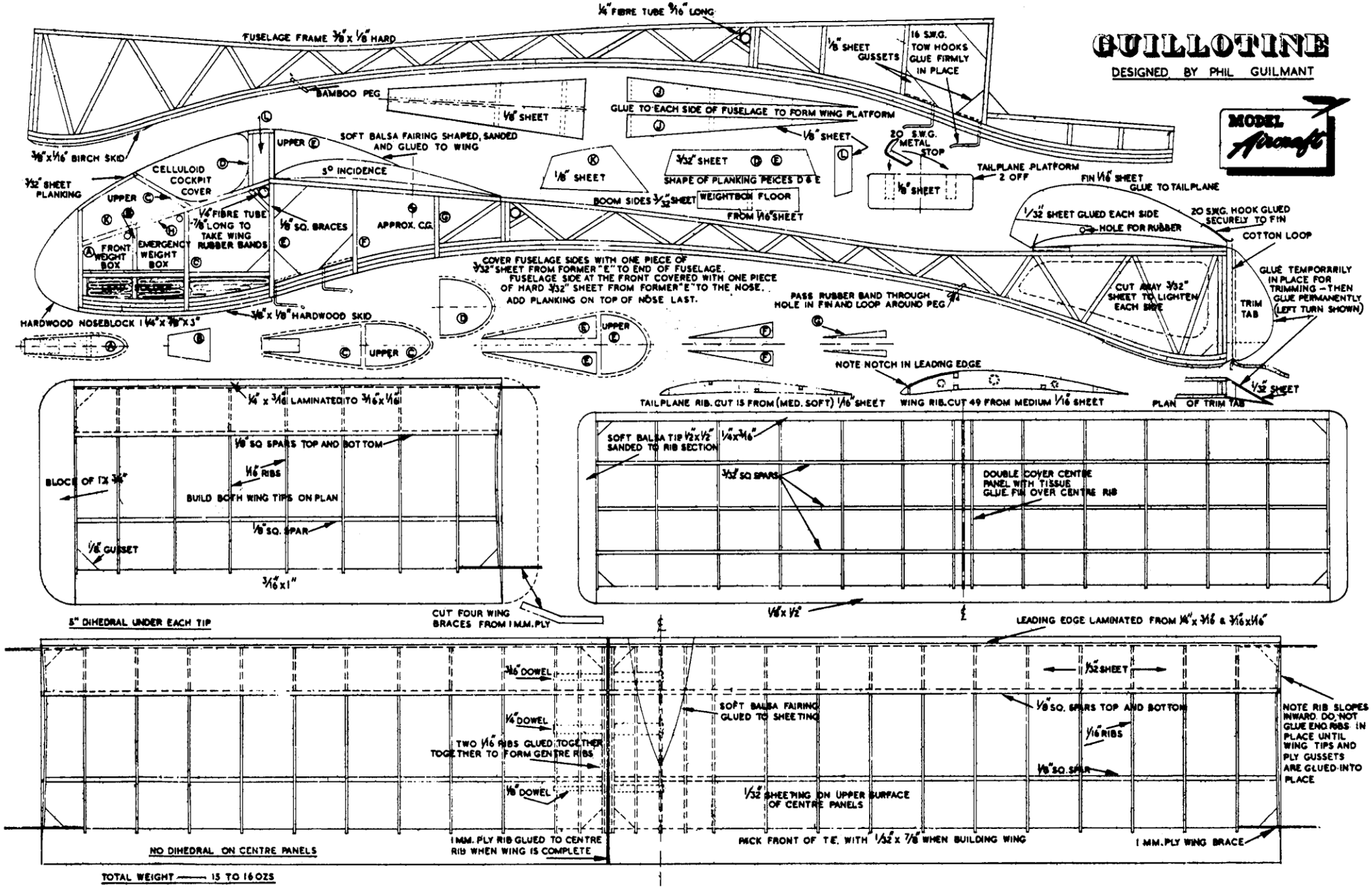

621
CF-THC
VISCOUNT
AIR CANADA


Bugl .15
Mk II
BC

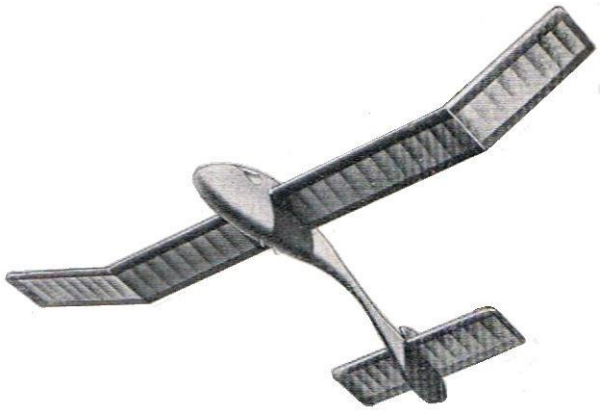
GUILLOTINE

DESIGNED BY PHIL GUILMANT

MODEL Aircraft



Guillotine by Phil Guimant Nordic A2 glider from Model Aircraft March – April 1950



Its high time that aeromodelling drew a deep breath and branched out into new ideas and construction techniques. The introduction of the International Glider Competition for models to the "Nordic" specification gives us all an excellent opportunity for a new approach to glider design. We have a specification, we have a competition, and we all stand an equal chance of getting in the team to visit Sweden. The opportunity now exists for glider development along the lines of the "Wakefield" model. Previously no definite limiting factors existed in glider design, hence there was no means of comparison between models. Now there is such a means of comparison and there exists a golden opportunity for ingenuity in design. The Nordic formula is extremely simple, and individual designers enjoy considerable flexibility.

Here, then, is the "Guillotine," a Nordic glider which is a serious attempt to break away from past trends. No wild claims are made for performance. After all, we did not get the Nordie rules until just before Christmas, and the weather has not been at all helpful since. However, the only points about which I am not absolutely sure, is the exact incidence of the tailplane, and the exact position of the c.g. It must be appreciated that the ultimate success of a model in flight depends very largely on these two factors, and only after many experiments can one say—with honesty—which is the best c.g. position and tail incidence

1f I may do some crystal gazing for a moment. I would say that the progress of Nordie design will consist of perfecting the wing and tail incidence relationship together with the c.g. position. development of wing sections, the greater use of the tailplane as a lifting surface, the development of soaring and undulating flight (never to be confused with a slight stall) and finally construction and drag-reduction refinements.

Guillotine" is a deliberate attempt to get some where in this respect, and great care has been taken to eliminate the hazards of rough seather flying, such as tow-line instability, lateral instability, sweeping down-wind and not turning back into wind, and so on.

Remember that Nordic gliders conform to F.A.I. rules, and can be flown in any S.M.A.E. glider competitions.

Construction

Every effort has been taken in the structual design to minimise possible structural failures. The extra trouble taken over such things as the laminated leading edge, are well worth while. If each piece is Cut accurately and assembled accurately, it will prove a simple model to build. Read the building and assembly instructions carefully, you may save yourself having to tear the fuselage or wing apart to put something in!

The fuselage. Do not assume that by virtue of its shape the fuselage is a complicated structure. It is based on the principle of the basic frame," and once this has been built, the rest is simply a matter of gluing things in place. So commence by building the basic frame over the drawing. The inside laminations arc laid first, followed by the outer laminations. The strips need steaming to conform to the shape on plan ; glue the laminations firmly together and wait until the glue is dry before removing the frame for sandpapering.

Do not forget to glue the rear tube firmly in place to house the wing rubber bands. Glue the two halves of formers E, F, G in place either side of the basic fuselage frame. Glue pieces J each side of the top longeron of the basic frame, and glue to them the top edges of formers E, F, G. Now add former upper E. Glue in place former C which straddles the basic frame, making sure it is square and upright. Glue former A to the front of the frame and then glue piece H in position. Add piece K between formers A and upper C. Notice how the various pieces are bevelled to fit snugly in position. For instance, piece H has both ends bevelled, while formers A to G also have the tops bevelled. Now add formers D, upper C (bevel carefully), piece L between formers D and upper E, the weight-box floor, and then former B.

To save using too much lead-shot, fill the spaces below the weight box with lead solder strip. Glue the 1/4in. fibre tube firmly in place, with 1/8 in. Square braces to hold it in position.

One 4 in. sheet of medium 3/32 in. sheet is used to cover one side of the fuselage from former E to the tail. The sheet will have to he held or pinned in place while gluing, especially 2 in. behind former G.

Do not forget to cut out the lightening hole under the tailplane before gluing the sheet in place on the basic frame. It is wise to pre-eut the fuselage roughly to shape before gluing in position.
One piece of 3/32 in. hard sheet is used to cover the front half of the fuselage between formers A and E. Repeat sheeting on other side of fuselage, then plank the top of the nose with soft 3/32 in. sheet. Add celluloid cockpit cover. Make round holes in fuselage sides where tubes are, and sandpaper the whole fuselage carefully. The edges of the boom between the wing and tail may be rounded slightly, and the whole fuselage should be covered with tissue doped on. Add the hardwood nose block and skid. Glue a soft piece of ¼ in. sheet on the wing platform, and sand it to the section of the rib undercamber. This will eliminate the gap. Glue both tailplane platforms firmly in place, making sure they are at 90 deg. To the fuselage side. The fuselage should be given two coats of coloured dope, sanded between coats.
Wing. The wing has a flat centre panel with 5 in. dihedral under each tip. The two wing panels are joined by dowels, with the joint offset from the centre line to obtain a simpler fixture of wing to fuselage. The only possible snag is that the dowels may work loose in time, so it is advisable to fix a small piece of transparent adhesive tape at the join to hold the panels together. This should not be necessary if you make the dowels a tight fit. The dowel tubes are the commercial brown fibre type, and are made to take all standard dowels with a tight fit. By using ply facings to each end rib, a very clean joint is possible. For the benefit of the "doubting Toms," the extra weight of dowels in the port wing is quite negligible and causes no upset in trim. The wing is held on to the wing platform by rubber bands which are drawn through the tubes in the fuselage and linked by a small wire hook This fixing will provide sufficient movement of the wing in a bad landing. When the wing is complete, apart from covering, glue the soft balsa fairing block in place on the centre line of the wing and carve it to the shape shown, continuing the section of former upper E.
The laminated leading edge gives great strength and provides a useful notch for fixing the 1/32 in. sheeting. The finished size after laminating is 1/4in. square with a1/16j in. square notch in one corner.
The tips are very efficient provided care is taken in first carving the block to the airfoil shape, and then streamlining the whole block. No covering is specified on the drawing because of the individual preferences all aeromodellers have, but avoid a heavy - tissue on the tailplane, which must be kept light, and be sure to glue or paste the tissue to the underside of every wing and tail rib. Be sure to cover the tip blocks with tissue in order to get a smooth airflow around the tips. Note that the end ribs of the wing panels are left out until the tips are attached, and note, too, that the sheeting on the leading edge and centre section is not put on until the wing tip panels are fixed. The ply facing ribs are not glued in place until the wing is complete.
Tailpiane and Fin. The same remarks about wing tip blocks apply to the tailplane tip blocks. Remember the tailplane is contributing a lot to the lift and it needs the same care of construction and finish as the wing. Note how the fin is reinforced at the front with two pieces of 1/32 in. sheet. This ensures that the front of the fin which is pulled forward to meet the top of the fuselage when the dethermaliser operates, is strong enough to withstand the constant impacts. Be sure to fix the 20-s.w.g. wire hook firmly to the rear edge of the fin, and bind it with tissue after cementing.
The Dethermaliser
The essential factors of a dethermaliser are as follows. It must be foolproof. The fuse must not be in a position to set light to the model. The tailplane must not be able to drop off after the dethermaliser operates, and a definite stop must be provided which alleviates this. The dethermaliser must bring the model down quickly, definitely and safely. This dethermaliser satisfies all the above requirements and as soon as the dethermaliser operates, the model stall sharply, and comes down like a lift, with its nose into wind in a horizontal attitude.
The two 20-s.w.g. sheet aluminium stops are glued in recesses in the underside of the front tailplane platform and project above the platform about 3/8 in. These stops prevent the tailplane from being pulled forward by the rubber band looped through the fin. Glue tissue across the underside of the front platform to ensure that the two stops do not come out of the recesses. To avoid the dethermaliscr fuse burning the trim-tab, take a tin foil milk bottle top, flatten it, and glue it around the base of the trim-tab. Do not forget to notch the base of the trim-tab to receive the cotton loop, which must be taut when flying.
We have got to send a team across that will win the Nordic competition. The first eliminator is on May 14th, so there is littletimee left. Go to it, and remember that Model Aircraft is always interested to hear whatyou are doing, so write in, and if possible, include photographs.

Photos from Peter Renggli, Urs Brand and Urs Rindisbacher

Heinz Goepfert

John Greising

Karl Meier

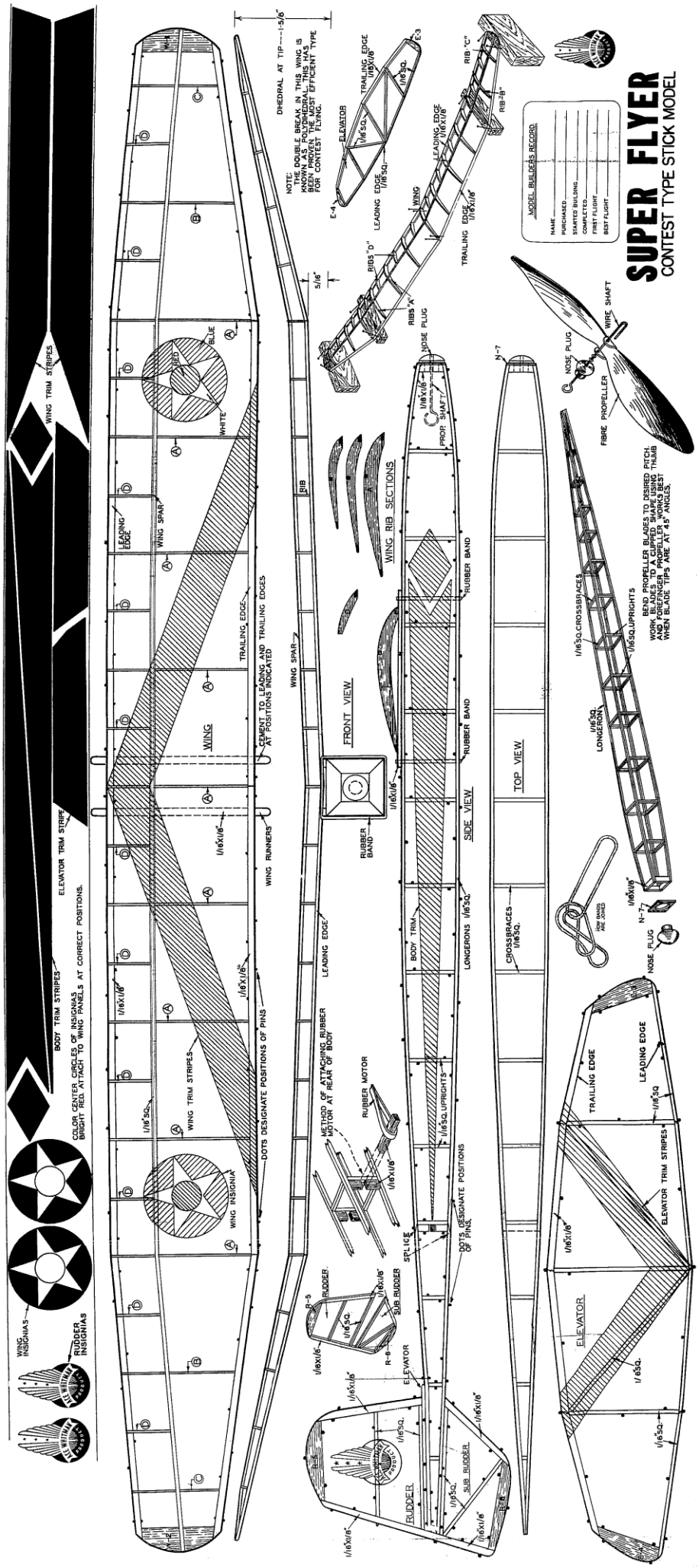
Karl Petz


11


BE-7
10


44
NE-LA 541 B


1942



This plan was kindly sent in ages ago by Frank Schwartz. This plan being rare and only one that Frank has seen.

I delayed including as trying to contact anyone who had the copyright but despite emails to company name on the plan was unable to track any copyright holder although I had a reply saying no longer an interest. Hopefully I've not trodden on anyones feet here if I have then apologies, please let me know

Showscene from Dave Bishop of DB Sound.

Over many years of presenting aeroplanes to the general public in this country and in many other parts of the world, it has been my pleasure to see and enjoy the results of all sorts of designs and designers of almost every flying and static models and full size craft that has been invented. For me the year would start at the annual model engineering exhibition held in different large halls in London around Christmas time. It was the place to go and meet up with all of the people that you would see later on at shows with their latest creation. One place that stands out in 1949 was at Dorland Hall in London and hanging up on one of the walls was a huge Westland Lysander built by a Mr DA Russell. There was a card explaining that this aeroplane would be a radio controlled flying model powered by a 4 cylinder spark ignition engine. Soon after in 1951 at the Festival of Britain exhibition, so many visitors saw a Bristol Brabazon control line model being flown by Peter Holland with assistance from Albert Briggs. These two would be involved with aeromodelling in a big way in the years to come. Later on at shows it was a joy to see the superbly designed and built models of Dennis Bryant complete with such beautiful details that it was almost a pity to cover up such wonderful skeletal work with nylon and dope. I met and made a lifetime friend of David Boddington at Sywell airshow a few years later and saw so many of some 500 aeroplanes that he designed and flew at so many places. Dudley Paterson of Flair Products was another popular and prodigious designer in the West Country who owned of a factory where he designed and produced so many aeroplanes that sold by the thousand. He came with his team to the 1981 Schneider Trophy 50th anniversary seaplane event at Spithead near Southampton with three Shorts Crusaders racers and stopped the show with his solo aerobatic flying.

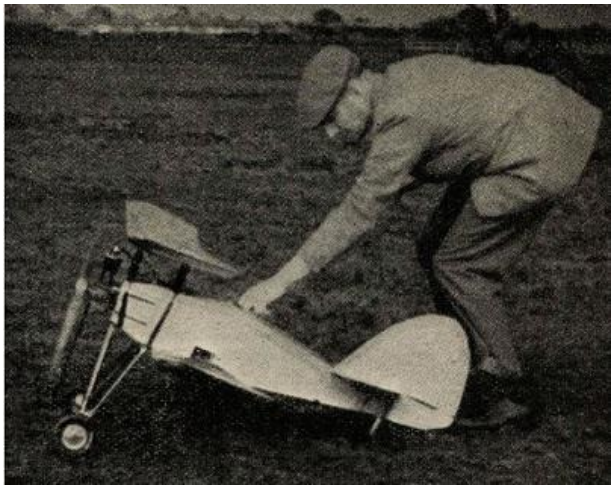
At the very beginning of my aeroplane/aeromodelling lifetime, the people that stand out in my memory, along with their models, are; Ron Warring, Captain (then) Bowden, followed in later years by Mick Charles, Chris Foss, Roy Scott, Ken Binks, Pete Cock, Howard Boys, Ron Moulton, David Hughes, Tony van Geffen, David Butcher, Bill Dean, David Rawlings, Arthur Searle, Jane Stephenson, Ken Sheppard, Mike Reynolds, Roy Lever, Dave Johnson, Tony Stephenson, James Parry, Jo Koullen, Ron Tullet, Maynard Hill, Derek Foxwell, Leon Cole, John Carpenter, Dave Fullard, Bill Giles and Tony Nijhuis. The list goes on and on, with so many others, I consider, has made our hobby (obsession?) such a wonderful pastime. I have hundreds of pictures taken over so many years on the hard drive of my computer and I have attached a few to our editor James Parry, in the hope that he can find space for the next edition of Sticks & Tissue. All the best, Dave Bishop.

The control line Bristol Brabazon at the Festival of Britain in 1951 with Peter Holland assisted by Albert Briggs.

Brian Rice's "Racer" winner at Old Warden many years ago.

Calshott in 1981 and Dave Boddington.

Chris Foss and his wife Jane at the K2 BMFA indoor event at Crawley. The next indoor at the K2 will be next week on February 7 from 11am.



Colonel Bowden with his Kanga design.

Low fly with his scratch built Concorde by with a young Andrew Johnson from the Liverpool club at the Family Model & Craft show at Plumpton Racecourse many years ago in the mid 1980's.

Dave Stephens does a very low fly past in his full size home built Mustang at the Southern Model show at Hop Farm run by the Croydon club.

David Wright from the Liverpool club does a winning flight with his Evans Jaguar in perfect weather. David was the first successful person to fly a radio controlled Spitfire model from France to England

Dave Watts of Southern Model Fuels does a low "fly by" in his home built Europa, full size aeroplane at one South east show.

Dudley Pattison ad his Crusader at Spithead in 1981.

The superb Red Arrows duo of Steve and Matt Bishop along with some of the full size Red Arrows pilots at Dunsfold.

Don Coe from Croydon with his winning Tiger Moth at Old Warden.

The annual Golden Cross radio controlled event in the 1960's.

Hanno Prettner, Jo Koullen, Philip Avonds at London Derry Northern Island. All show stoppers.

Part of the team of the Dawn Patrol with their Nieuport at the Southern Model show at Hop Farm run by the Croydon club.

From Geoff Goldsmith

Happy new year etc, lets hope for god flying weather, I am having a clear out and have a number of airframes and engines if required. can you add these on the next S&T please

All models are in a good but not new condition and must be collected from Dorking unless otherwise agreed
Geoff Goldsmith
geoffgg1@btinternet.com
01306 881000

Tom boy with tuned Mills 75 offers above £50
Tom boy with Banks 0.5cc elfin sensible offers
Junior 60 OS 20 four stroke available if required, airframe £25
Scaled up Debutante for Saito 45 engine available if required, airframe £25
Diamond Demon for Mills 1.3 airframe £15 with servos

Stentorian Bipe covered but unpainted airframe £9 yes 9
Senator covered tissue on mylar £7

Mills 75p new and never run, in box with original factory paperwork showing settings, sensible three figure offers for this collectors item where
will you find another?
Milford Mite as reported on by Dick Roberts in SAM 35 Speaks sensible three figure offers for this collectors item.
I have other small diesels so call me for details.

Control line at Wimborne MAC

10 April Sunday

9 October Sunday

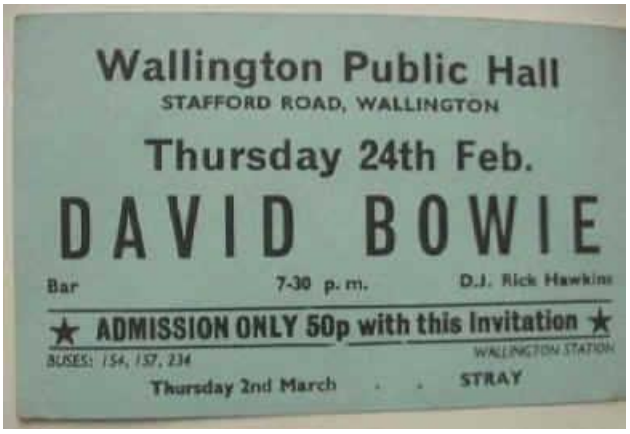
Cockelebarrow

The dates for Cocklebarrow have been confirmed as 10th July; 21st August and 2nd October.

From Gray North Cotswolds MAC Fly for fun

Good to hear from you, hope you've had a good Xmas. Many thanks from me and my clubmates for an excellent year's worth of S&T's. Keep up the good work!
Good timing with your mail-just before Xmas, the North Cotswold MAC held our AGM and we fixed the date for the Fly For Fun 2016.
It will be held on the weekend of August 13th and 14th at Far Heath Farm.
As we've done for the past two shows, we'll be holding two informal events within the main show. On the Saturday, we'll be welcoming anything designed by the great Vic Smeed, while on the Sunday, there will be a one design event for Sid King's Cotswold Novice trainer.

My son found this on the Internet – It brought back memories 50p seemed a lot at the time. 1972 was a long time ago. I was still a teenager!



From Gerard York

Dear Mr Parry, as an enthusiastic reader of Sticks & Tissue, may I recommend a relatively new publication to your world wide readership?
It is the quarterly magazine, "The Aviation Historian" edited by John Stroud and managed by Mick Oakey long time editor of Aeroplane Monthly.

As your readership are by definition knowledgeable about matters of aeromodelling history, this publication compliments that interest and is a source of new information and research on matters aeronautical. There is a website;www,theaviationhistorian.com where one can see what is an offer. Regards Gerry York.

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22 March 2016
26 April 2016

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