Sticks and Tissue No 150

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://sticksandtissue.yolasite.com/

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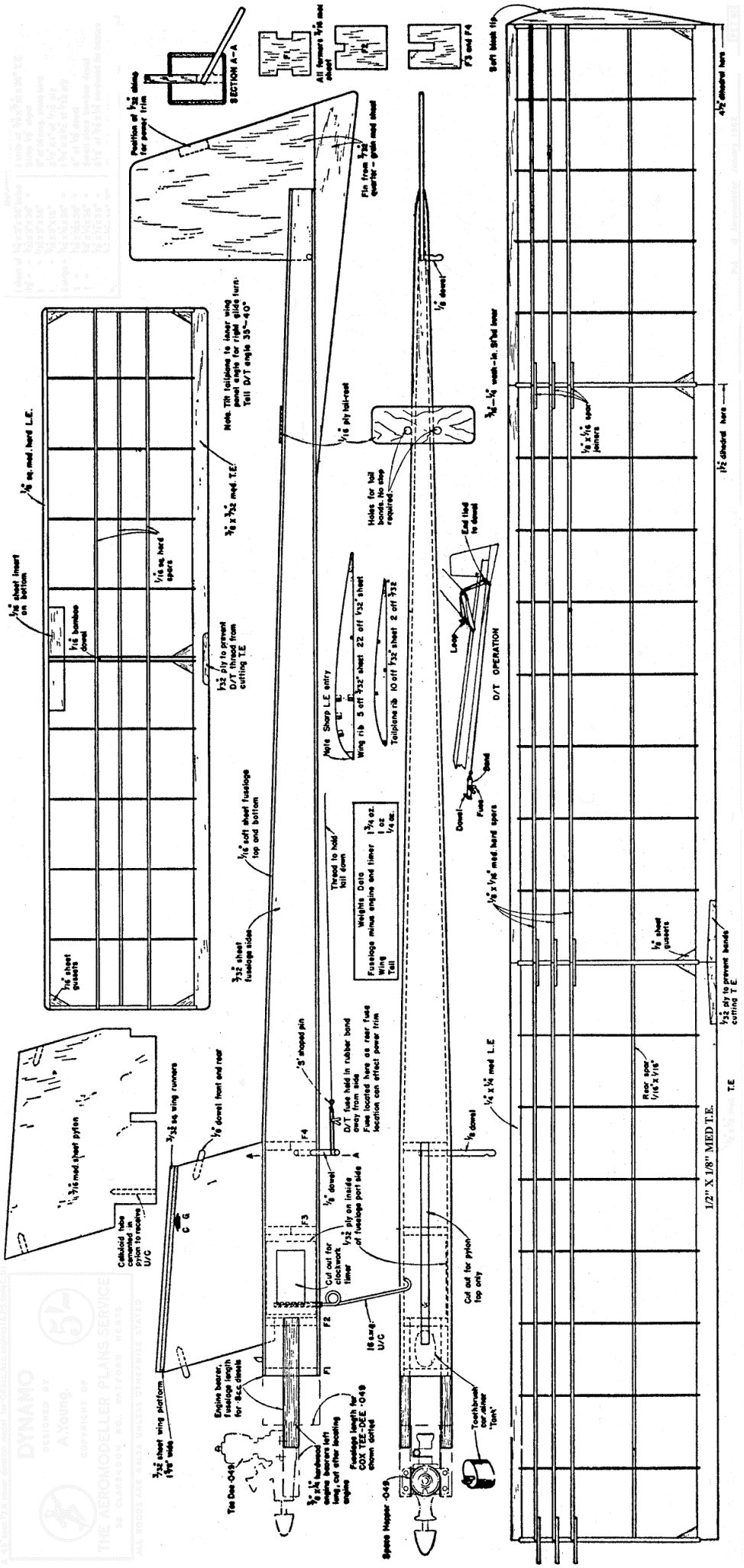
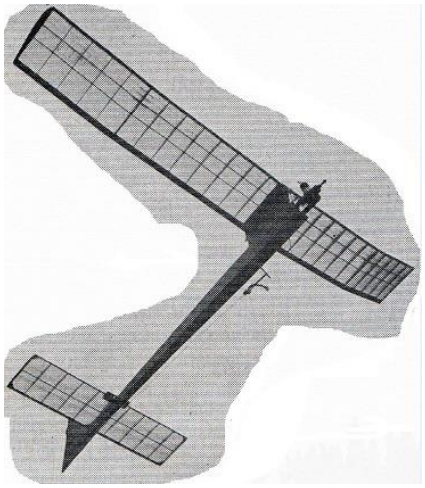
Model glider being towed up at Middle Wallop 19 May 2019 at the Ghost Squadron meeting



Dynamo by Tony Young a contest winning 1/2A free flight contest model, 45" span, simple construction suits all .8cc (.049 cu in) engines. From Aero Modeller January 1962



This design started life in 1960, when a ½ A P.A.A. LOAD fuselage was made to use a Wakefield wing and tail for the Northern Gala. It was not flown in the comp. as the wing was irreparably broken. A one-ounce wing is not strong enough to carry 11 ounces of inverted model when a "kind soul" places it upside down to stop it blowing away in the strong wind!

With the P.A.A. pilot and weight removed, it became a fairly potent "open" ½ A weighing approx. 6 ounces powered by a Thermal Hopper. All three competitions entered were won, at the South Coast, Croydon and Surbiton Galas.

Early in 1961 the plan version was created, changing the wing from undercambered to speed up the climb, also simplifying the built-up P.A.A. load fuselage, but keeping the same rigging angles except for changing

balance in that the C.G. was moved forward and dihedral was reduced.
Powered by a prototype Dydesyne "Dynamic" .049 diesel, it weighs 6 1/2 to 6 3/4oz. and was flown in five contests during 1961, placing in all of them as follows:—
1st at the Midland Area Rally;
2nd at Northern Heights
Gala and Devon Rally;
3rd in the Croydon Gala; and
2nd in the S.M.A.E. contest.

Wings are best made first as they can be covered and doped and left to age whilst working on the rest of the model. They are quite straightforward and amply strong, provided good straight grained wood is used on the spars. Should added strength be required, the inner panels could be webbed between the two rear fin.1/8 x 1/16 in. spars using 1/32in. sheet with the grain running vertically.
On the fuselage, make up the pylon unit (pylon and two or three formers) and bearer unit (bearers and two formers) align these on one fuselage side then stick the other side on, add the tank then top and bottom covering. Tony uses diesels mostly and makes his tanks out of celluloid toothbrush tubes, cutting it to the length required, adding a top, bottom and vents all of celluloid, using cement as the adhesive. If a glowplug engine is used, a metal tank must be fitted.
When the bearer unit is cemented to the fuselage side, the weight of the motor must be considered, the short nosed version is for a motor weighing 2 1/2 oz. and the long nose for a 1 1/2 oz. Nose length must be varied for motors weighing between these amounts. Finish the model before finally drilling the bearers so that one can slide the engine to locate the C.G. correctly.
Check the glide first, packing the trailing edge of the tail until there is just a suspicion of a stall turning right; this is cured later after the first power flights, but acts as a safety measure, ensuring that the model will recover from any position.
Trim the initial power pattern from a 2-2 1/2sec. motor run at full revs., launching the model at approx. 80 degrees. This length of engine run is quite long enough to find out which way the model is turning. If the model has been built true, it should be going straight with the wash-in on the wing slightly rolling the model to the left. Balsa strip should be stuck on the fin trailing edge until the model does approx. two turns in 10 sec. turning to the right.
Once the power turn is definitely established to the right, the glide can be adjusted, removing the slight stall tendency—and now you're set for the first 1962 1/2A event!

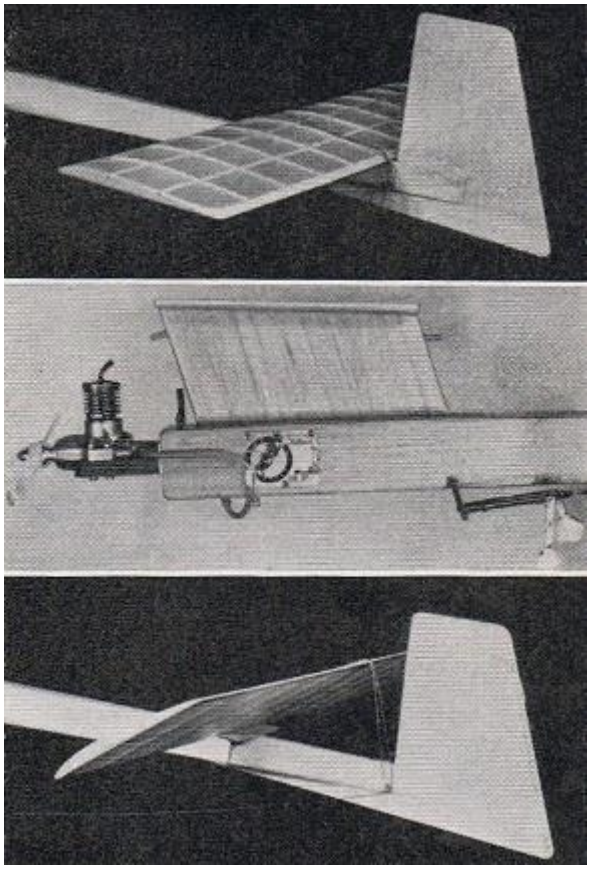


Photo shows top to bottom tailplane retained in normal position by thread and rubber band strainer linked to dowel projection from fuselage. Dethermaliser fuse burns through the rubber band strainer to release the tensioned tailplane to position seen in bottom photo. Note also the position of the engine timer in middle photo

Middle Wallop Sunday 19 May 2019

The event being electric fun fly which was held both Saturday and Sunday and run by Dave Chinery , Hayes Club. Attendance was very poor and put down to electric RC being main form of power these days as in the past prior to electrons moving around dominating the hobby modellers were eager to see what others were doing etc thereby numbers in attendance were high. Certainly when I attended the event four years ago that was the case. However every cloud has a silver lining and this was the cost of entry. Now there is no longer a £6 per head entry replaced by a fixed daily charge to organiser providing 25 people attend then that covers the daily fee although a slight bit more will be added to cover the annual license therefore more days an event runs each year the less the cost each day becomes, this applies to Ghost squadron as well.
The Ghost Squadron which was holding a meet further down the flight line and with 30+ in attendance I assume paid its way. Someone said the Ghost Squadron was event £5 so I guess that was correct. So if you attend it is possible these prices will change on basis of low turnout cost will be high as with electric or large numbers attend cost will be low? Anyway I did take photos of the Ghost Squadron glider meeting all of which are below.


T-G-3
18
D 11 240


18
T-G-3
18


HB
PT-PAY
PT-PAT


HFG
AIR CADETS


10
G-WOLF


3

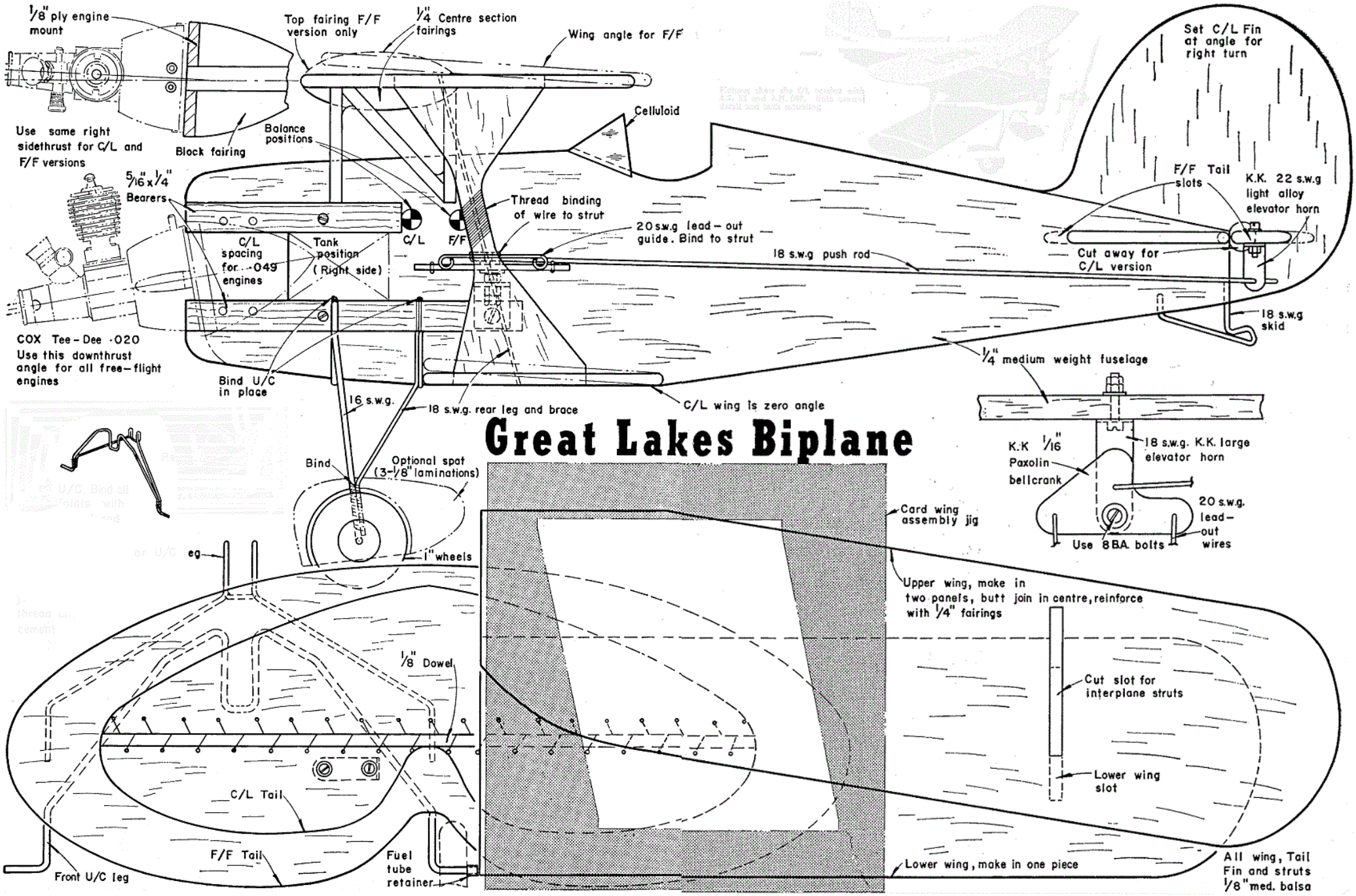

CTZ
Scottish Gliding Union


BGR

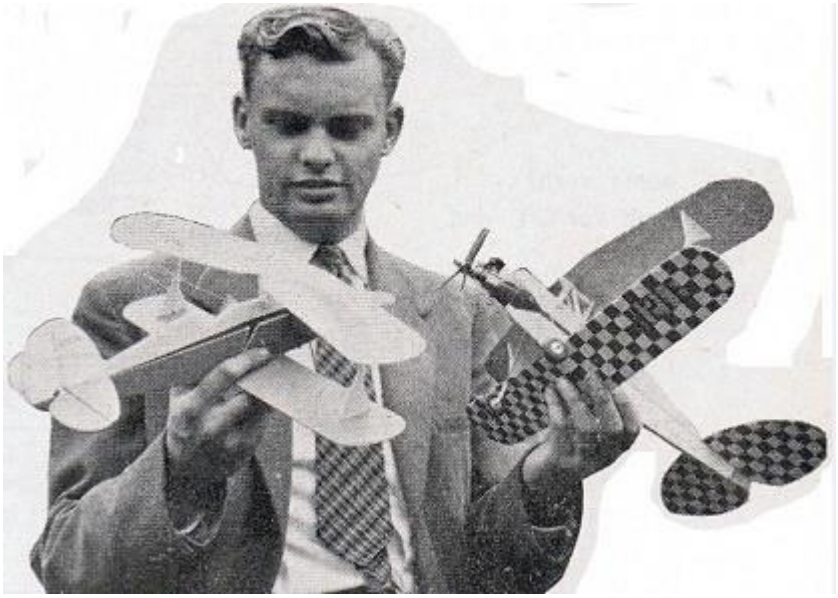

KURA


GN-BK6

Great Lakes Biplane

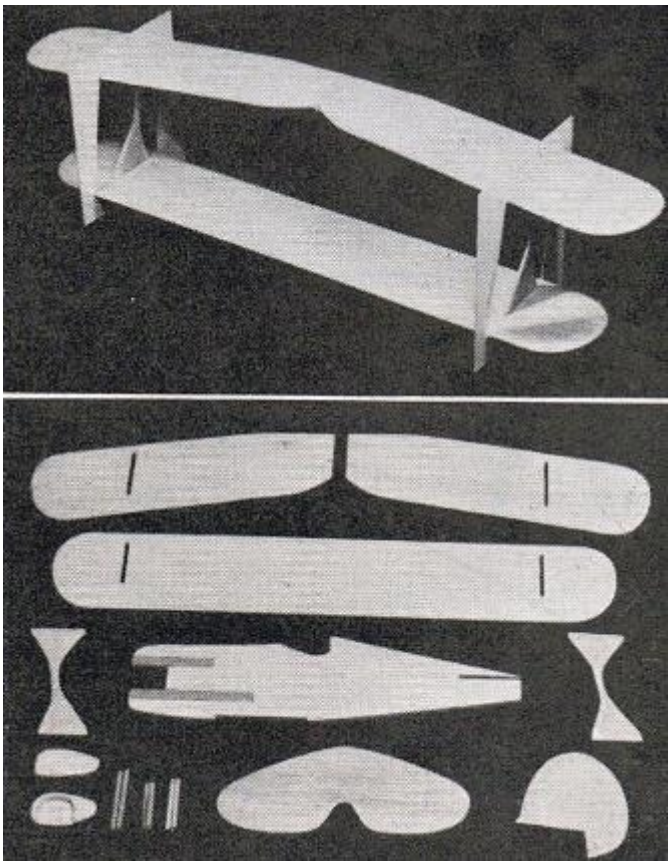


Great Lakes 18 inch midget bi plane for free flight or control line all sheet construction .5 - .8 cc From Aero Modelelr September 1961



YEEOO W!! t That was our immediate reaction to the first free flight we made with the Cox Tee-Dee .020 bipe, plans for which are on the following pages. It's a pip of a model, and we've no doubt at all that it'll go equally well on an .010 too. Be sure of that side thrust (same for control line) and to fit the prop on back to front if you don't want a searing race track performance on YOUR first flight too. We grossly underestimated the power of the new Tee-Dee!

The control line version has had checks with the AM .049 and the AS 55 diesel, either of which give loops, wingovers and inverted flight on lines as short as 15 ft.

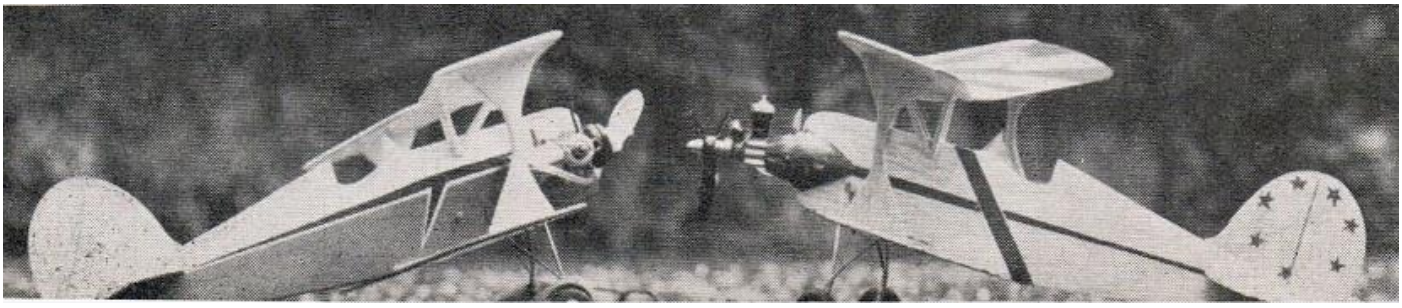


long. Wings are set at zero incidence and the balance is forward for C/L use, otherwise there's remarkably little difference between the two, except of course for the tailplanes.

Cut out all 1/8 in. balsa parts. Fit engine bearers in 1/4in. fuselage on C/L model, drill holes for engine bolts and woodscrews. For Tee-Dee F/F version, mount the scrap 1/4 in. fairing and 1/8 in. ply bulkhead. Coat all surfaces with two applications of sanding sealer and when hard, commence assembly. For C/L model join top wing halves flat, key interplane struts (with 18 s.w.g. strengtheners) into wings, using the card templates as a jig to set the angle of wing stagger and equal incidence.

For the F/F version the dihedral angle is set by cracking the lower wing down its centre line and keying the two sets of wing halves with the interplane struts, using the same jigs. The centre of lower wing is then pinned down and the jig sets the dihedral. Use spacers between upper and lower wings at centre (referring to plan for gap) and butt join top halves with upper ¼ in. fairing to strengthen. While the wings are setting, make up the "N" struts from 1/8 in. sq. When set, add fairing below upper wing c/section, join fuselage to lower wing, and fit N struts. Mount fin. Attach 18 s.w.g. brass control horn as bellcrank mount and 22 s.w.g. light alloy elevator horn to C/L elevators which are joined with 1/8 dowel and sew to tailplane. Bolt bellcrank in position and make up controls, noting the lead-out guide at Port strut. Fashion the undercarriage legs and bind with thread at the axle end. Then sew to fuselage. Retain wheels with fuel tubing.

We used H.M.G. dopes on the C/L model and Yeoman transfer decoration for F/F. When dope is dry mount engine and tank. For C/L this is retained by a length of fuel tubing secured by two 5/8in. woodscrews.



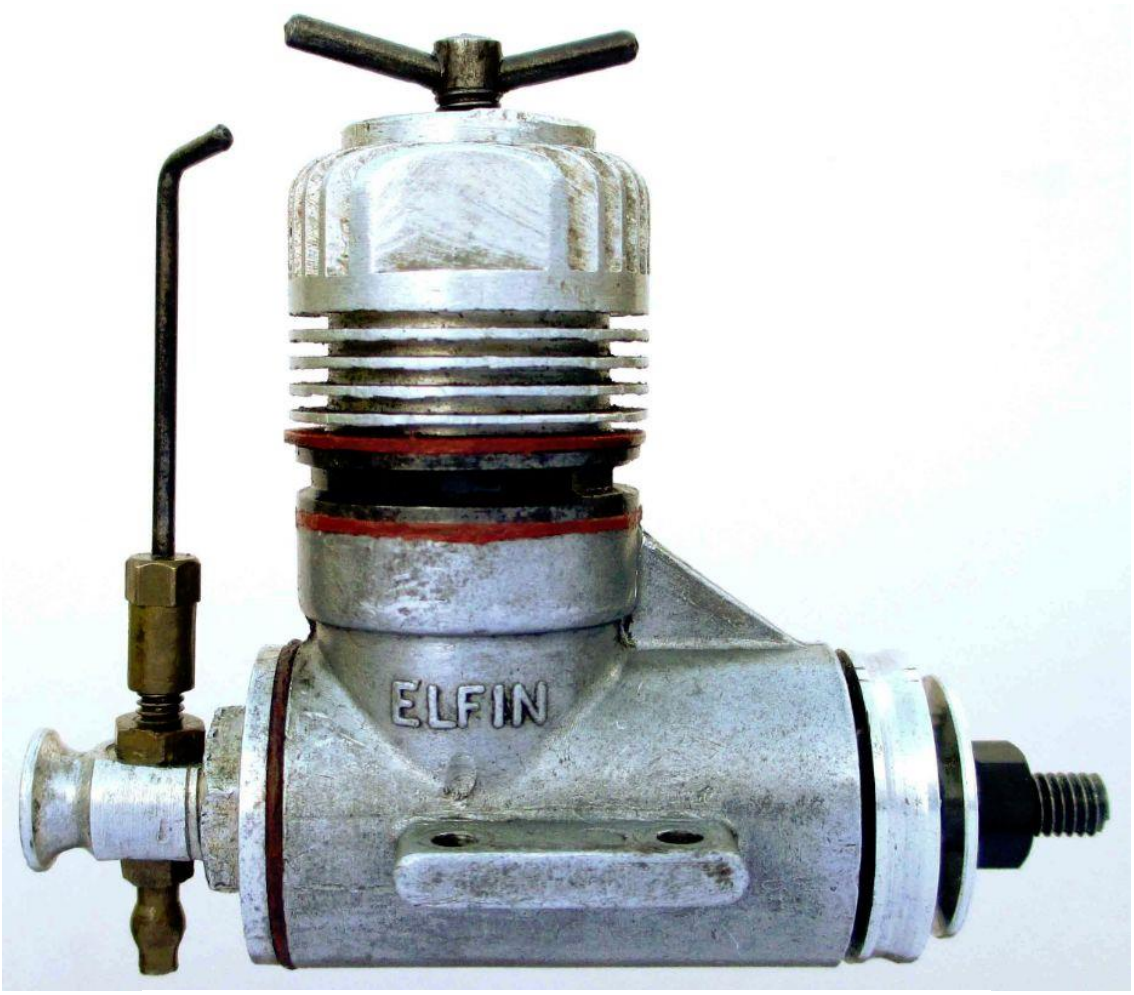
From Bill Wells

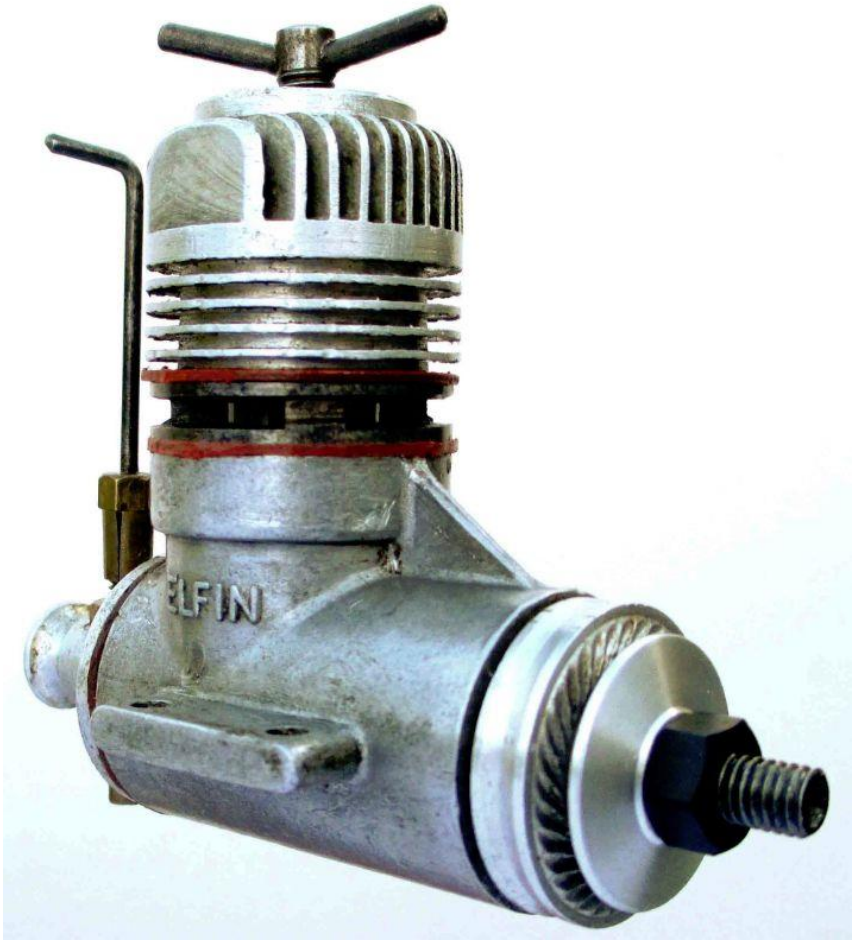
Elfin 1.49 Ball Race Engine

At first glance this engine looks like it has fallen out of a plumbers holdall. However it was a well designed and in general well made engine. I remember someone saying if you machined a crankcase from the inside to take a rear ball race and then turned the crankcase around to machine it for a second front ball race you had very little tolerance to play with! If the faces are not parallel or do not have a common centre you introduce more problems than just having a single ball race with plain front bearing or just a plain bearing. Elfin came up with a cunning plan, bore the outer diameter of the ball races all the way through the crankshaft housing and then use an alloy bobbin to keep the bearings apart. The downside of this is a large parallel diameter crankcase housing for the bearings. It makes the engine look chunky and a bit on the heavy side when compared with contemporary plain bearing engines. But remember this engine was designed in the early 1950s, being advertised for sale October 1954. Every engine manufacturer had their own ideas on how best to make engines that would outdo their rivals. This engine has a reed valve induction not a common feature on diesel engines at the time. The sleeve of cylinder cooling fins is held in place by an alloy cap that screws onto the cylinder liner trapping the finned jacket in place. The cap has a centre thread for the compression screw. The washer and nut used on the short crank shaft thread means only narrow hub propellers can be used so most owners used sleeve nuts or sleeve spinners. These items were not standard to the engine but were sensible accessories. My engine came with what appears to be a homemade sleeve spinner.

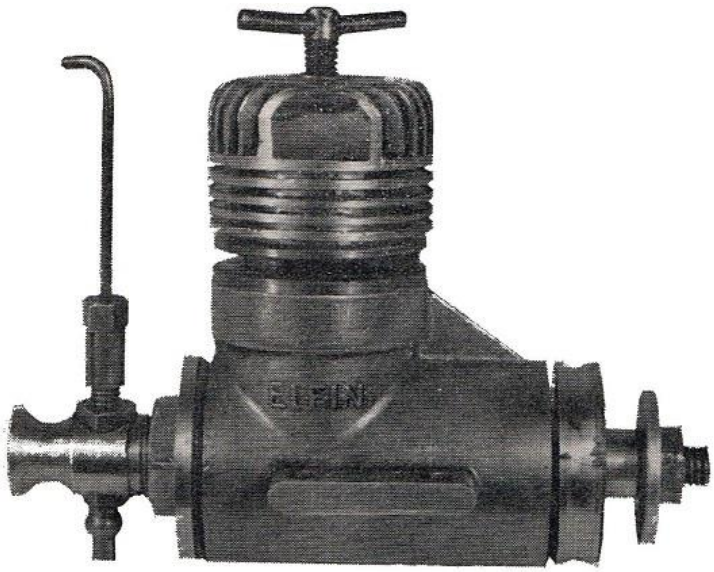
With an engine well over 60 years old, components are sometimes feeling tired and in the past may have been ‘got at’ during various break downs and rebuilds so I did not have high expectations with regard running this engine. I had heard these engines are vibrators so made sure it was well secured on my test stand and made sure the propeller was balanced. I was surprised with the easy starting and smooth running of this engine. I know it sounds daft with the racket of a running engine but you can tell a nicely running engine and this one was really smooth and so easy to start. I needed the sleeve spinner, the short threaded propeller shaft is ridiculously too short for most propellers.

Aerol Engineering marketed their engines under the name of Elfin using the first part of the surnames of the firm’s partners Ellis and Finn. The Elfin BR 1.49s were in production from 1954 to 1957. The company had some quality issues with their Ball Race engines so in the end sold the business to Auto-Vaporisers Ltd., who had previously offered engine re-boring and repair services. From that point on it is doubtful if any new Elfin engines were produced. For more information the Aerol company and Elfin engines there is a very comprehensive article on Adrian Duncan’s ‘Adrians Model Aero Engines’ website.


ELFIN


ELFIN

Elfin 1.49 BR from Aero Modeller January 1955



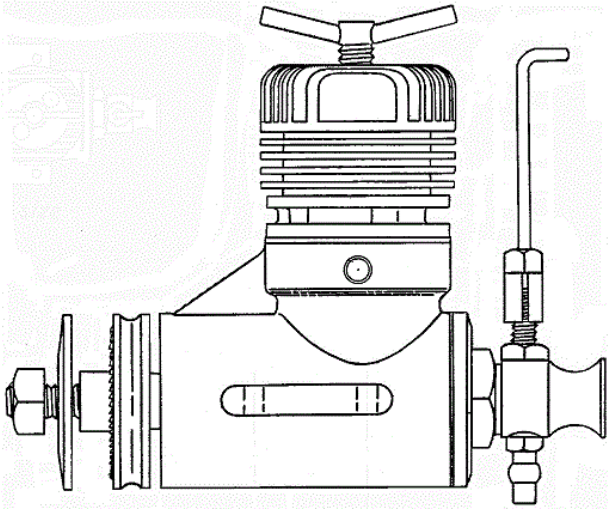
Rate the new Elfin an exceptional engine—for design, performance and handling characteristics. As the photographs and drawings show, it even looks different from the usual run of model engines. Besides having a top performance in its class it is virtually outstanding for ease and flexibility of control, starts at a flick with almost any size of propeller and can throttle down by choking to smooth, consistent running at low speeds. But, oh! four ounces total weight for a 1.5 c.c. motor is more than some 2.5 c.c. engines. Chief new design features of the Elfin are the twin ball races carrying the crankshaft, and reed valve induction. The latter, a simple flap valve of phosphor bronze (or possibly beryllium copper?) is essentially similar in design and construction to the unit employed on the American Thimble Drome (February, 1954, Aero Modeller.

As a matter of interest the natural frequency of this valve, as near as we could judge tuning it against a piano, is of the order of 26,000 cycles per minute so that at half resonant frequency, 13,000 r.p.m., it should be opening and closing with maximum amplitude. In this respect 13,000 r.p.m. could, theoretically, be a "best" operating speed for the induction system, or alternatively a "critical" speed. Nothing of this showed

up on test and we would say that, in practice, about the only effect of operating at 13,000 r.p.m. continuously would be to shorten the life of the valve. What the fatigue life of the material is cannot be guessed, but it is certainly high, although not indefinite. Being a non ferrous material fatigue strength will gradually and continually diminish, until eventually it will fail. Quite probably by this time the rest of the engine will have been worn out anyway! Reed valves of this type are extremely practical and will quite possibly become more popular. They are almost a "standard" on American outboard engines. .

Reed Unit

The reed unit is held in a 7/16-in, deep backplate (locked in position with a spring circlip), the whole screwing into the crankcase. The crankcase itself is unique in that it is cylindrical throughout, giving the whole engine a most solid appearance. Actually the extra mass of metal involved is quite small, there being only some 5/16-in, spacing between the two ball races. The crankcase unit weighs 1 ounce and the ball races 5/16 ounce each.



Mounting lugs are cast in on either side of the crankcase mid-section, symmetrical both fore-and-aft and vertically. Thus, when mounted, the actual thrust line is 1/16-in. above the top surface of the mounts. It was suggested by an observer that the lugs might have been positioned farther aft, in view of the overhang of the induction tube, to shorten the length of bearers required. The lugs are, however, disposed about the centre of gravity of the engine, which seems a more logical solution. What we would have been inclined to suggest, however, is that with such a crankcase separate lugs might have been employed at each end of the crankcase to give wide spaced four point mounting, rather like a full-scale engine. This would have given even more positive hold-down characteristics—an advantage, particularly in view of the fact that the Elfin does have an appreciable amount of vibration at all running speeds. The crank disc is not balanced, being quite plain; the shaft, disc and con-rod pin being machined from a single piece of nickel steel. The shaft is relieved slightly just in front of the disc. Main diameter is 1/4 in. tapering down to a 3/16-in, thread. The backplate is wide and machined with a pulley groove—presumably for cord starting, although this would be difficult to achieve with a propeller due to the risk of fouling the propeller with the starting cord. The backplate is also bossed, 9/16-in. diameter for a projection of just over 1/8-in., which means that the centre hole in commercial propellers must be reamed out to 9/16-in, to fit. Also the length of threaded portion available is too short to accommodate propellers of more than 6-in, pitch. If larger pitch propellers are used, they must be cut back at the hub.

A relatively massive steel cylinder is employed (weight 3/4-ounce) which screws into the crankcase casting. Three by-pass ports are machined in the outside, transfer to the cylinder being through upward raked holes in the cylinder walls. Port opening overlaps the exhaust to an appreciable extent. Exhaust porting is by the now conventional "360 degree" milled external slots in the cylinder wall.

The light alloy cylinder jacket is a sliding fit over the cylinder. This is held down by a separate light alloy head which screws on to the top threaded part of the cylinder, the head subsequently bedding down flush with the top fins of the cylinder jacket. The contra piston screw is mounted in this head member.

Dismantling.

It was suggested by the Aeromodeller staff when the engine was sent down for test that it might be as well to design and describe a couple of simple tools to remove the crankcase backplate and cylinder head. These do not appear necessary, however. If the rim of the backplate is gripped in a vice, it is readily loosened by unscrewing the engine. Similarly, to remove the head, round-nosed pliers located in the keying holes and twisted perform the job quite satisfactorily, and without damage. Dissembling the rest of the engine may not be so straight forward, however.

. . . best left alone. Frankly, unless you know what you are doing, we would suggest leaving well alone. If you must be inquisitive, by all means unscrew the crankcase backplate and have a look at the reed valve.

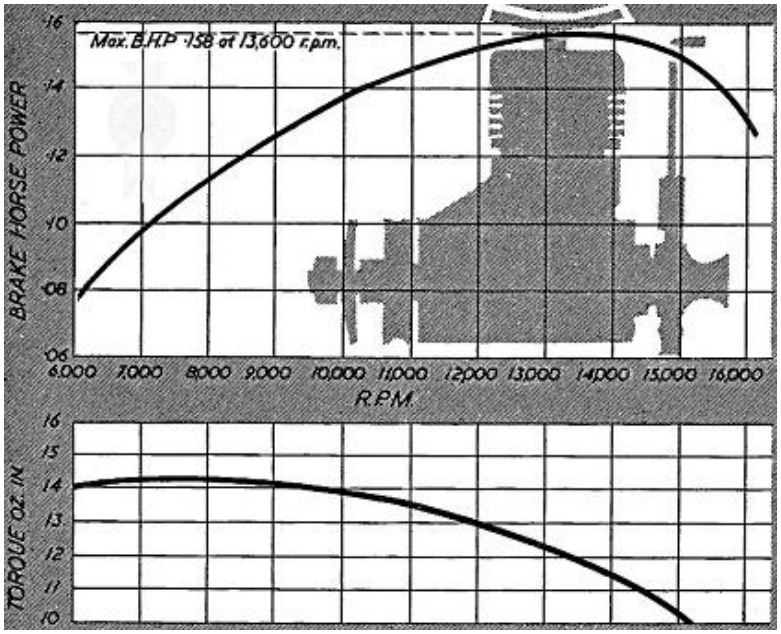
Take this to pieces, if you will. You should be able to get it back without much bother. But don't try messing about with the crankshaft or you may well get into trouble. The front ball race is a tight (and we mean tight) drive fit in the crankcase, blanked off with s fibre disc locked in place with a circlip. The rear race is a drive fit on the crankshaft itself and is a press fit in the crankcase casting. Races are by Hoffman, and they have seven balls in a bronze cage— conventional, single row, high-speed races.

Handling ,

Handling characteristics of the Elfin we found remarkably good. Being a ball-bearing engine, a minimum of running-in time is necessary to bed down working surfaces to minimum running friction.- The test engine was, in fact, given some 35 minutes running-in time, which was at least twice as much as was strictly. necessary. The most noticeable characteristic at this stage was the pronounced sensitivity to needle valve position. The engine would run quite satisfactorily over quite a wide range of settings, but there was a definite best setting at which peak r.p.m. was achieved with any particular load. With many diesels of this size needle valve control is very much less marked.

Also, the Elfin is quite remarkably easy to start. A single finger choke is all that is necessary, followed by a sharp flip. This worked equally well with 10-inch and 6-inch diameter propellers, and there was a definite absence of any "kick" with the latter. However, with high-speed propellers the Elfin may quite easily start backwards, whiçh is a point to watch. Best practice was found to be to start with the needle valve opened up an extra-turn. Then, with the engine running, simply close the needle valve down gradually until peak r.p.m. is reached. Compression adjustment is non-critical and you have all the time in the world to find "best" settings without fear of the engine suddenly stopping on you— unless you have closed the needle valve too far.

We have mentioned vibration as an inherent characteristic, and this was actually the cause of a lot of trouble. During one high speed run the tommy bar worked out, hit the propeller—and vanished! You need to keep your fingers away from the cylinder head after the engine has been running for a few minutes for it gets pretty hot. But contra-piston adjustment was quite smooth and positive at all running and starting temperatures. Starting characteristics, incidentally, remain equally good, hot or cold.



Fuel selection

We found performance somewhat variable on different fuels. One or two fuels did not seem to suit the Elfin at all well. A majority, however, gave satisfactory and essentially similar results. All test runs were eventually conducted on AIlbon diesel fuel as apparently showing superior hot running characteristics. With Mercury No 8 re-adjustment of the compression was necessary after warming up to running temperature. Initial per formance with No. 8 tended to be very slightly better and final (hot) performance slightly inferior. Either can be considered as quite satisfactory for the Elfin, also R-M fuel.

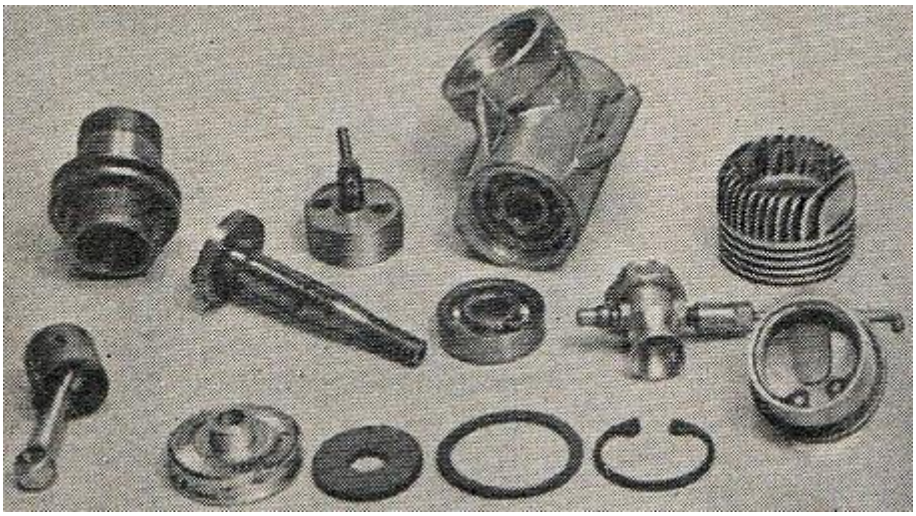
Our summary: a wonderful new contest engine in the 1.5 c.c. class, provided the weight is, no handicap. For a "formula" duration model this would be no dis-advantage and, in fact, the short nose resulting, could be an advantage from the stability point of view. But for an event like Clipper-cargo where every fraction of an ounce counts, then we would plump for a lighter engine, even if it did not develop so much power. For the same power, there are larger capacity engines of the same weight. But few will have the easy operating characteristics of the Elfin.

To get the best out of the Elfin it has to be operated at moderate to high speeds. Below about 7,500 r.p.m. torque is falling off and running characteristics deteriorate. At 12,000 r.p.m. and above it is really happy. Also it is one of those all too rare engines which will take a "casual" flick start with a propeller size giving

those speeds. It costs more than the average 1.5 c.c. motor, but you certainly get something for that extra cash. And it looks an engine you would find very hard to damage. It could still further be improved—by lightening, reducing the vibration, and making sure that the tommy bar stays put!

Dia of prop	RPM
8 X 6 (Stant)	8,000
7 X 6 (Stant)	11,800
6X 6 (Stant)	13,700
6X 4 (Stant)	15,200
8 X 4 (Stant)	11,000
8x6 (K-K)	9,300
7x6 (K-K)	10,750
8 X 6 (Trucut)	8,250

Fuel used: Allbon diesel fuel



Dismantled Elfin reveals twin races, fine cylinder finning and reed unit. Bypass channels are now outside Elfin cylinder.

Specification

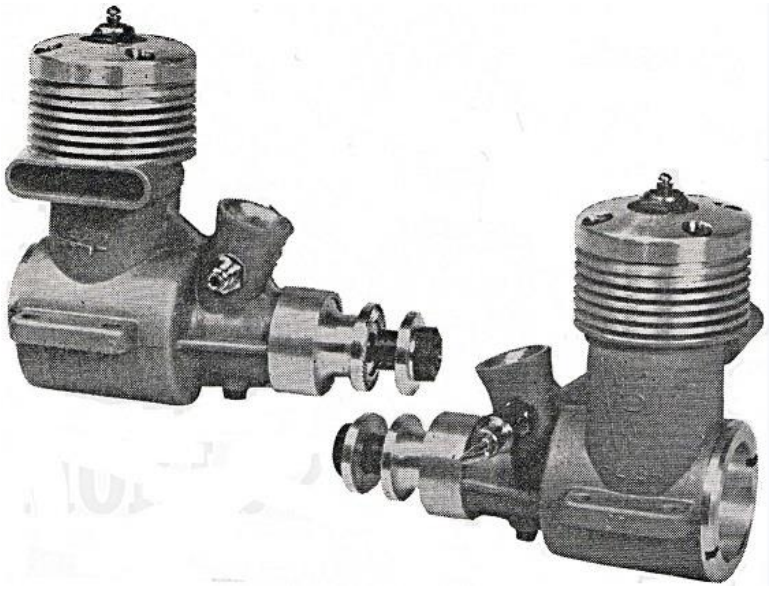
Displacement: 1.49 C.C. (.091 Cu. in.)
Bore: 0.503 in.
Stroke: 0.460 in.
Bore/Stroke ratio: 1.075
Bare weight: 4 ounces
Max. B.H.P.: .158 at 13,600 r.p.m.
Max. torque: 14.3 ounce-inches at 7,500 r.p.m.
Power rating: .105 B.H.P. per c.c.

Power/weight ratio: .04 B.H.P./oz.

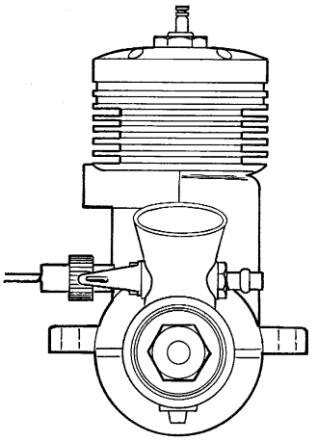
Material Specification
Crankcase: Pressure die-cast
Cylinder: Nickel Steel
Cylinder jacket: Dural
Piston: Cast iron
Contra-piston: Cast iron
Connecting rod: Dural
Crankshaft: Nickel Steel
Crankshaft bearings: Two Hoffman ball races

Manufacturers
Aerol Engineering, Henry Street, Liverpool 13. . . Retail price: 91/- (including tax).

MOKI S-2 From Aero Modeller March 1962

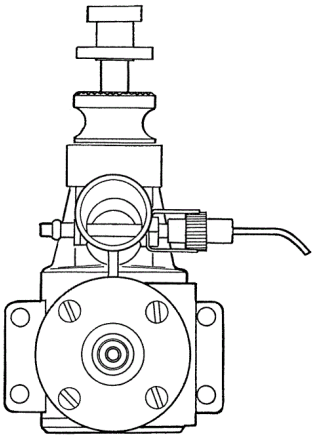


Developed under the guidance of Gyula Krizsma at the Model Institute of Hungary, the Moki S-2 2.5 c.c. glow motor is one of the first of the "new breed" of racing motors specifically intended to operate on "straight" fuel. It is also an expensively produced motor on which a lot of clever machining work has been done so that it can be regarded as a "special" rather than a normal production engine.
The layout is fairly orthodox with a loop scavenged cylinder, front rotary induction and a stepped crankshaft
carried on two ball races. A number of detail features have obviously been influenced by the Italian Super Tigre G.20/15, but there is also a considerable amount of original thinking included. It is essentially a developed design rather than a straight copy of standard practice with racing glow layout with just detail modifications.
In particular, the Hungarians are obviously convinced that a lapped piston shows advantages for this class of motor, and that transfer porting geometry and timing offers the best scope for experiment.



Basically, of course, the proportions and timing of any glow motor are essentially "tailored" to a particular fuel, but obtaining a high performance and smooth running on straight fuel presents additional problems.
These have been well sorted out in the Moki S-2. Its performance is most creditable, showing a peak r.p.m. of 18,000 at which speed it developed .32 horsepower.
This has been obtained whilst still retaining excellent handling and running characteristics. Hand starting is easy although with 6 and 7 inch diameter propeller sizes it could not be regarded as in the "beginners" class in this respect. It does not kick back but needs care not to get the engine too wet. This could

make starting a little critical when pressurised feed is employed. The needle valve control is completely non-critical. From a "minimum lean" running position speed tends to increase on opening up the needle up to an optimum setting which is not that clearly defined. Suction is very good with the venturi insert fitted, but markedly reduced when the venturi is removed. Without the insert, and using the pressure tap for pressurised feed, a higher performance could undoubtedly be achieved, at the expense of good starting characteristics. Running was particularly smooth and consistent at all load speeds from 12,000 r.p.m. up to 20,000 r.p.m. and above. Running is particularly sweet in the 18-20,000 r.p.m. range and not apparently affected by variations in fuel level so that pressurisation is far from essential for high speed performance. It is not an excessively noisy engine either so that sound is rather misleading as to how fast the Moki really is running with a particular propeller load. We liked it very much for its running and handling characteristics, and the excellent performance over the whole of the usable speed range although it is, of course, essentially a racing motor for operating at 16-18,000 r.p.m. and above.



With exhaust and transfer diametrically opposed, a flat topped piston is unusual, although not original.

Transfer porting is enormous and consists of two deep parallelogram shapes machined out of the cylinder liner wall with top and bottom edges angled upwards at approximately 45 degrees. Although two separate ports are used, they do effectively blend into each other at the top, leaving only just a nominal thickness of wall, calling for very clever and careful machining. The other unusual feature is that the transfer actually opens fractionally before the exhaust, the smooth 20,000 r.p.m. plus performance showing that this has no adverse back-pressure effects. Further evidence to the considerable attention which has been given to transfer gas flow in development is the machining of the upper portion of the transfer passage in the crankcase unit. This passage is cast in, but appreciably widened and opened up at the top by machining.

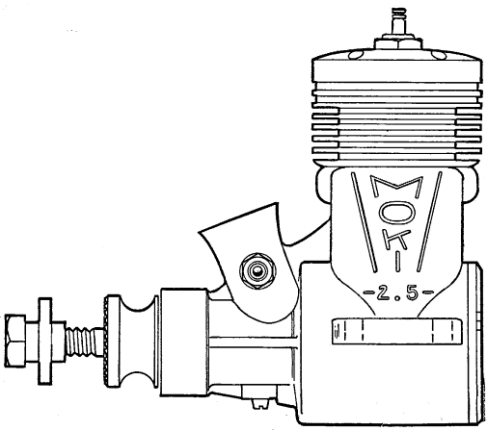
Neat casting

The crankcase unit itself is a very clean pressure die casting of substantial wall thickness. Race housings, crankcase interior and bore are all machined in first class fashion. The intake port is cast in, rectangular in shape, matching the size of the shaft port. The bearing length between the ball races is bored to a "loose" running fit on the shaft. The ball races are French Skefko, 9 m.m. for the rear and 5 m.m. for the front, quite loosely fitted in their respective housings.

Crankshaft is of hardened steel, 9 m.m. main diameter stepping down to a 5 m.m. diameter front length which is tapped with a metric thread for the propeller nut. The crankweb is circular, machined with a crescent shaped counterbalance weight. Crankshaft is hardened and ground to finish over the journal lengths and crankpin. The hole down the centre of the shaft is .260 in., crankpin diameter is .196 in., and the pin is drilled through to lighten. The propeller driver is turned from dural and locks on the 5 m.m; diameter length of shaft by means of a split steel collet. Shaft size is quite modest and, in fact, small by comparative modern standards.

The steel cylinder liner is hardened and the external surface finished by grinding and the bore by honing. Walls are relatively thick with a small flange at the top to locate the liner in the crankcase unit. Piston is of cast iron, quite thin walled, and ground and lapped to finish. The dural connecting rod is machined from solid bar and nicely finished. A hollow floating gudgeon pin is used with brass end pads. The head is machined from solid dural, without fins and represents a substantial chunk of metal which is no doubt advantageous in keeping the glow plug at an optimum temperature. The plug is centrally located and the depth of thread available in the head is somewhat greater than that of a standard long reach plug. We found the Moki to give a perfectly satisfactory performance on a short reach plug with a thin washer, when the bottom of the plug comes approximately 3/32 in. up inside the hole in the combustion chamber.

The bottom of the combustion chamber is mildly concave and there is a clearance of approximately 35 thou. between the top of the piston and the head at top dead centre. The head secures with four short screws and seals without a gasket.



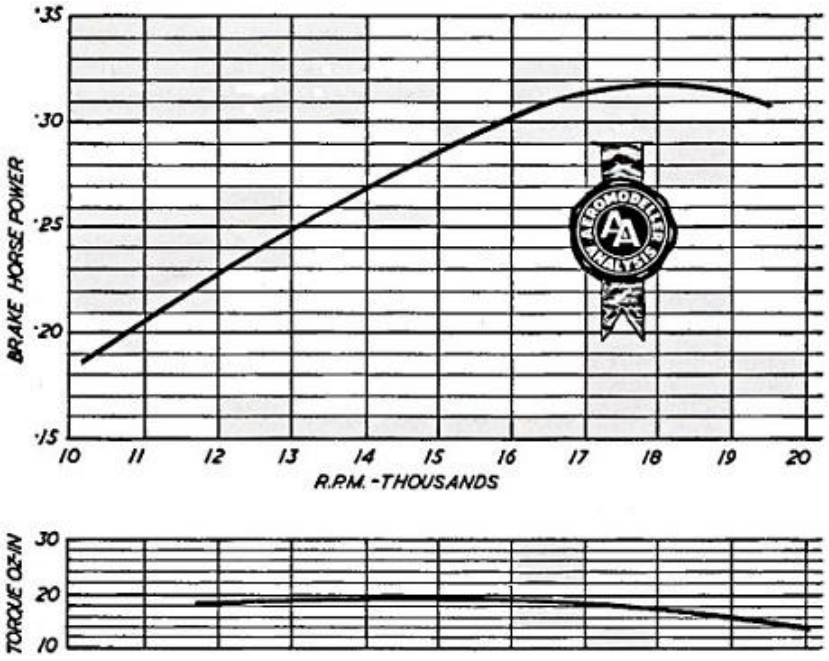
The crankcase end cover is a simple dural turning which screws well into the crankcase. Spraybar is of conventional pattern, in brass, with a single hole. The intake in the crankcase casting is slightly bellmouthed, opening into a 3/8in. diameter throat. A venturi insert located in the throat by the spraybar reduces the diameter at this section to approximately 5/16 in. The needle valve is of steel, fitted with a brass collar and a ratchet lock. A pressure tapping point is drilled in the bottom of the crankcase bearing length, normally sealed by a screw. This screw can be replaced by a nipple for pressurisation feed to the tank, timed by the crankshaft port.

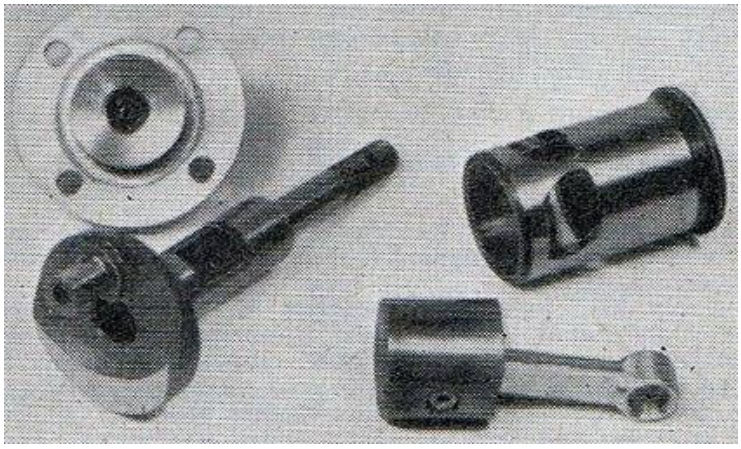
Summarising, an engine we liked very much both for performance and handling. It gives a most excellent account of itself on straight fuel—and one old-type KLG glow plug lasted for the whole of the test running. It is also an extremely well made engine on which considerable skill, time and attention has been spent.

Prop RPM figures

8 x 4 Frog nylon	13,600
7 x 4 Frog nylon	16,200
7 x 4 Keilkraft nylon	16,600
7 x 6 Keilkraft nylon	13,500
8 x 4 Keiilcraft nylon	13,200
6 x 4 Keilkraft nylon	20,800
7 x 6 Top Flite nylon	14,200
8 x 4 Top Flite nylon	14,100
6 x 4 Top Flite nylon	21,500
8 x 6 Top Flite nylon	10,000
7 x 4 Trucut	17,100
8 x 4 Trucut	14,600

Fuels: Frog Redglow & 75 per cent. Methanol 25 per cent. Castor Oil.





Very high standard of manufacture with latest machinery is evident in examination of the Moki 5.2. Cylinder ports indicate Enya and Super Tigre influence of using the Schnuerle method of transferred gas deflection to replace a piston baffle. Head Contours are not extraordinary and allow room for development.

Specification:
Displacement: 2.465 c.c. (.1503 cu. in.)
Bore: .590 in.
Stroke: .550 in.
Bore/stroke ratio:
Bare weight: 5 ounces
Max. power: .32 B.H.P. at 18,000 r.p.m.
Max. Torque: 19.5 ounce-inches at 15,000 r.p.m.
Power rating: 1.3 B.H.P. per c.c.
Power/weight ratio: .64 B.H.P. per ounce
Material Specification:
Crankcase: light alloy pressure die casting
Cylinder liner: hardened steel
Piston: cast iron, ground and lapped
Cylinder head: turned dural
Crankshaft: hardened steel
Connecting rod: turned dural
Spraybar: brass (aluminium venture insert)
Bearings: one 9 mm. ball race (rear); one 5 m.m. ball race (front)
Propeller driver: turned dural
Crankcase backplate: turned dural

From Jörgen

Hi James sending some Pictures the bare bones of my Cardinal from Vintage model works Engines is an Pheffer 0,6 diesel and other planes that I have flown in the last weeks

From Peter Renggli photos of Antik Flugtag 2018 MG – Bern taken by Peter Ziegler and Urs Brand

Christian Gafner Kapitän Elektro 2.4

Christoph Renggli Simplex Cox Texaco 0.49 ccm 2.4

Peter Ziegler Sportmodell Elektro 2.4


Zimdars
1942

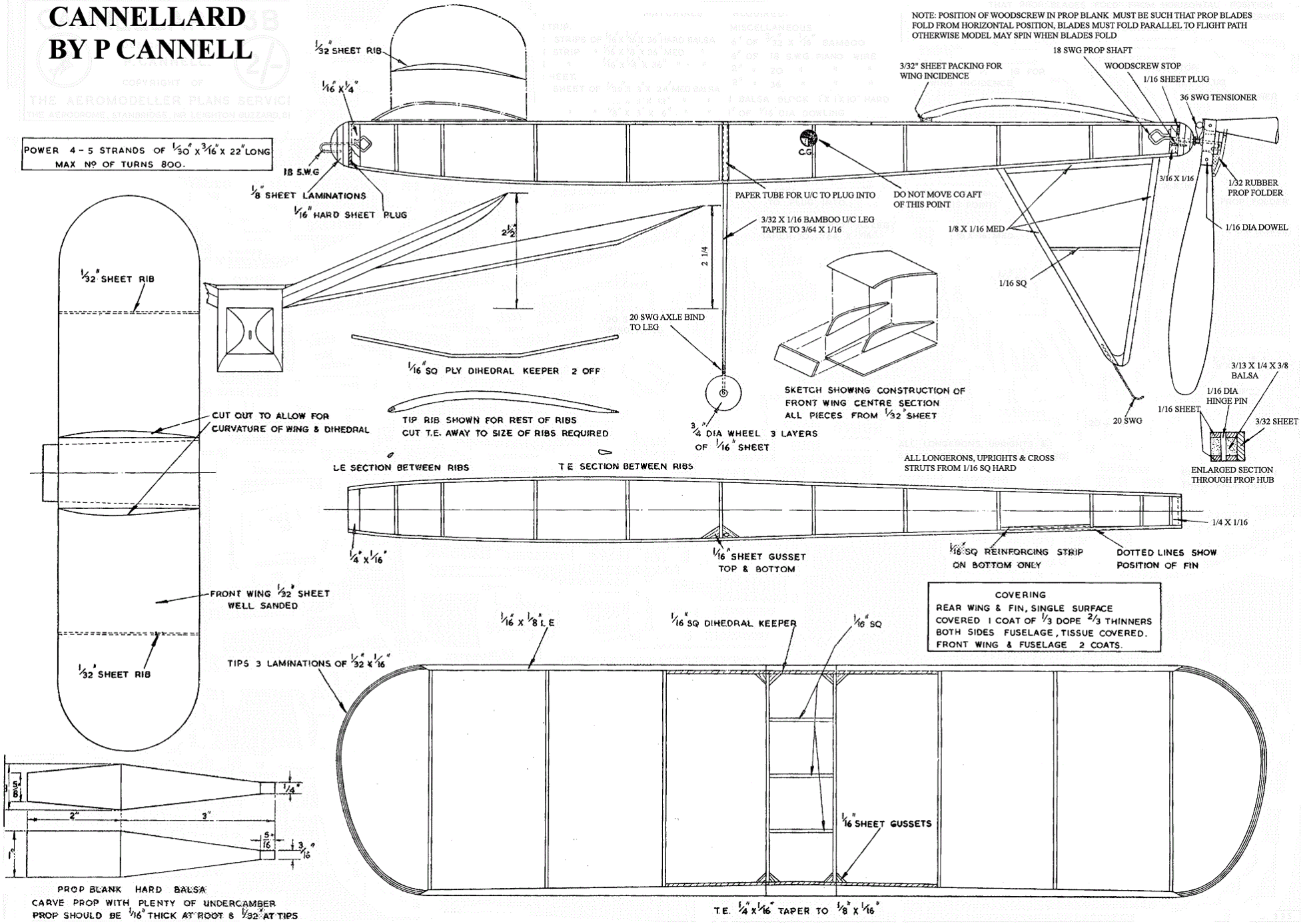

1937 Flamingo
6


1937 Flamingo
6

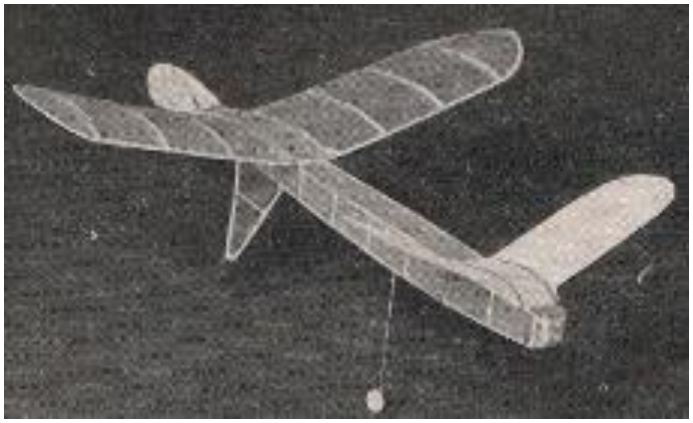

1937 Flamingo


SO-13

CANNELLARD
BY P CANNELL



Cannellard 3B a 20” wingspan rubber powered Canard by P Cannell from Aeromodeller October 1949



The spice of the unorthodox is again provided by this attractive little rubber-driven canard which is capable
of a consistent 1 1/2—2 minutes in still air. Despite its small size this model is a good and regular performer and is not too difficult to fly well in the hands of any but a complete novice. It possesses all the inherent stability long associated with the tail first design and with a normal amount of care should give many hours of pleasant flying. A particular advantage is of course the greatly decreased mortality as far as airscrews are concerned. For anyone who likes the idea of something a little different that does not entail too much labour and materials the Cannellard will prove a welcome change.

The fuselage is a simple box structure and requires no explanation. The wing is likewise very simple but remember that all the ribs cut are tip ribs and a little wood must be removed from the rear end of each other rib to allow for the tapered T.E. An all balsa front wing was chosen because this part of the structure comes in for some nasty knocks even on a lightweight. The wood should be well sanded, particularly towards the tips and a careful sanding after each coat of dope is also recommended. The prop must be carved almost micro film fashion as any extra weight on a prop in this position is just so much dead weight. Plenty of undercamber is carved in and the blades should be 1/16 in. thick at the roots and 1/32 in. at the tips (the tips being rounded off after carving).

One big advantage of the pusher prop is that it lasts as long as the rest of the model and bent prop shafts are non existent. The nose block and prop block are carved from 1/8 in. sheet laminations. The rubber prop tensioner must be made just strong enough to fold the prop and no more. The position of the wood screw stop must be such that the blades fold from the horizontal position. The lower photo shows the ample sidethrust used and how the blades fold off centre so that they are parallel te the flight path. Otherwise a spin may result as soon as the blades have folded. The rear wing and fin are single surface covered and are given one coat of 1/3rd dope, 2 /3rds. thinners on both sides. The fuselage, front wing and prop are given two coats.

Trimming for flight is carried out as on an orthodox model but remember to keep the wings as far apart as possible, i.e, if the model dives move the front wing as far forward as possible before moving the rear wing forward and vice versa.

Try to avoid altering the relative angular settings, of the front and rear wings unless it is absolutely necessary.

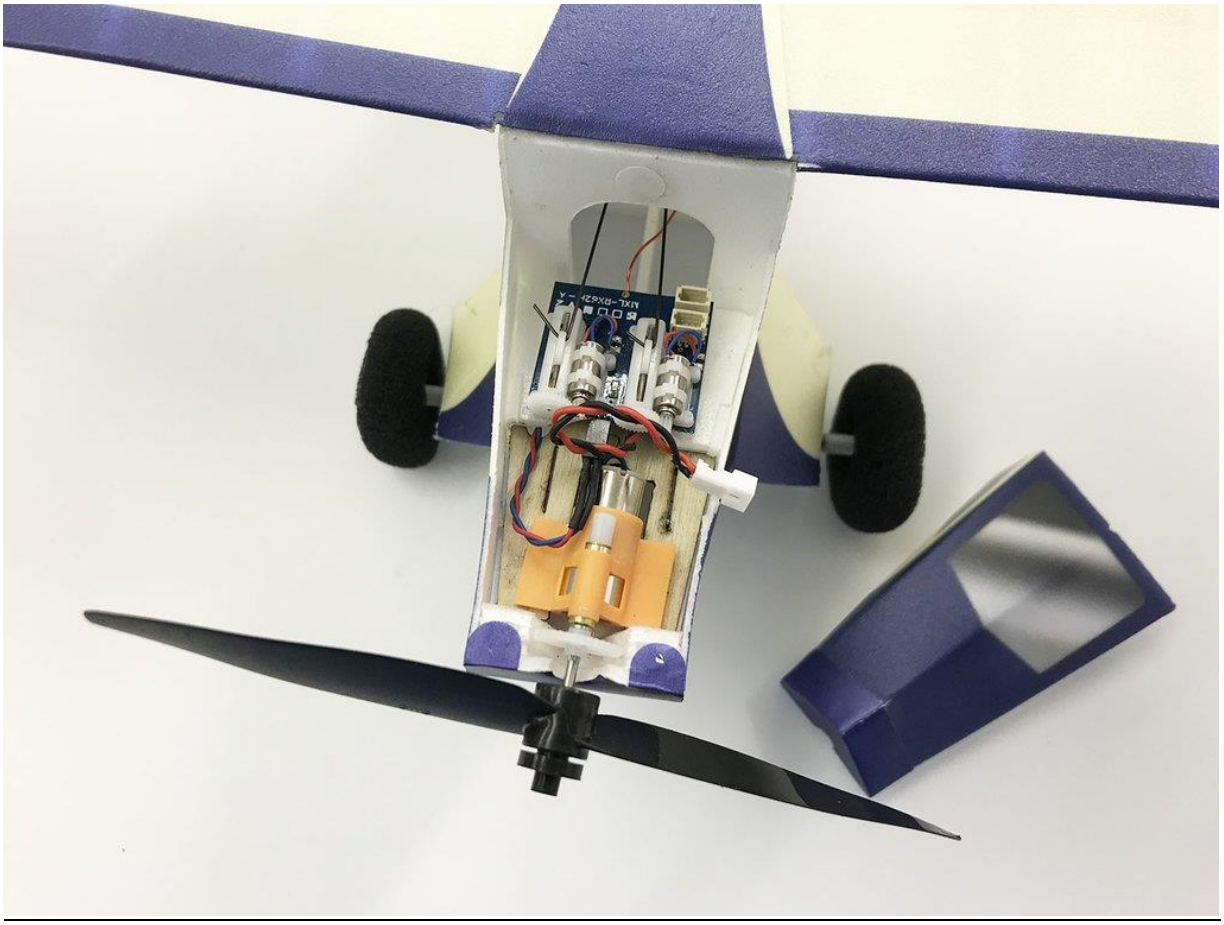
H.L. flights are best made without the U/C and if the model is really light four strands of 3/16 in. x 1/30 in. rubber may be used to advantage. On the original the power was five strands of 3/16 in. by 1 /30 in., 22 ins, long, which gives a comfortable 800 turns maximum although with careful winding in of rubber 900 turns maybe tried—but don’t, blame me if a new fuselage is soon required ! R.O.G. is done comfortably on the one leg is long as there is a smooth, run of three to four feet. The model will get off in two feet if there is about a foot drop at the end. On 800 turns the original whistles off the deck doing the first half of a loop up to fifteen feet, rolls out of this position in three to four feet and then finishes off the power run by a steady climb for about a minute.

And now for something a bit different from Microaces

Not a scale aircraft, but with scale looks, this summer Microaces is launching Scrappee, the first Microaces 'trainer' designed specifically from the ground up to fulfil a number of roles:
For those looking for a place to start in this hobby or those already flying that want a quick build and satisfying micro flyer that's also tough and easily repairable (busy indoor sky compatible), the Scrappee fits the bill. It has a wide speed range, very few vices and responds to control inputs predictably both in the air and on the deck.
Scrappee is also a great way to gain experience building a Microaces kit without having to spend a great deal. With the lessons learned from Scrappee, a Camel, Dr1 or an SE5a is a much easier proposition.
The kit comes with a colour printed, comprehensive Assembly Guide, but Microaces will augment the manual by publishing a step by step video taking you from the unboxing, through the assembly of the kit to trimming and flying it too.
The Scrappee will be shipping in August 2019 but is available to pre-order on the Microaces website www.microaces.com with a suitable discount (10% with code SCRAPPEE19) until the end of June.
There are two kits to choose from; the Scrappee Classic; straight out of the Golden Age of Aviation and a more contemporary Scrappee Patriot II with a more utilitarian look, clipped flight surfaces and a modern camo livery.
Both kits are available as an airframe at £38.50 or with Flight Pack (All in One Receiver, Motor/Gearbox, prop & adapter) at £83.00.
When buying with Flight Pack you can specify Spektrum, Futaba or FrSky/Taranis compatibility too.
Scrappee uses the same electronics as the vast majority of the Microaces range too so it's easier to transfer both knowledge and parts to new models.
This isn't exactly a new direction for Microaces but it is a concerted effort to help those wanting too, to get into fixed wing radio control easily and at a price that doesn't hurt.

Available to pre-order now at Microaces.com.


M-ACES
M-ACES



https://microaces.myshopify.com/collections/microaces-scrappee-trainer-kit?mc_cid=9f4fea1e02&mc_eid=507ea81f46

H-B W.12 Production has begun....

Our latest kit, the Hansa-Brandenburg W.12, has started on it's production run. Parts are being printed and lasered, motors & electronics ordered and we're just starting to put the final assembly guide together.

Give us a few more weeks and we should be ready to ship!

Here's a quick visual tour of some of the parts sheets that come with the kit. You'll notice there are A LOT of parts in the box, even though the whole model weighs less than 60g all up flying weight.

It's a real builders kit, with plenty to do to create, what can only be described as, Microaces most detailed kit to date.

If you haven't ordered yours yet you can still pre-order the kit now to get on the initial production run.

See more of the Hansa-Brandenburg W.12 on:

www.microaces.com

Dorset Swapmeet

On Saturday 7 September there will be a model aeroplane swapmeet at Marica's Frm Shop, Spetisbury, DT11 9DF which is just South of Blandford Forum.

Whilst mainly for model aeroplanes there may well be some boating, car and train presence.

All is under cover and there is a café, bar, WC's and ample car parking.

Due to low number of tables available traders assume that you should either bring your own or put items for sale on the concrete floor. Each plot will be 1.98m x 1.5m. A few bookings have been made already. Given the vast amount of room available it's is hoped response will be good so that this can become an annual event. If demand is high then another barn will be used thereby space per plot will increase.

Starting at about 08.45 for traders and open to buyers from 09.30.

Contact John Bainbridge 01258458749 or mobile 07841019607 or if problem getting hold of John you can email me James Parry at :- jamesiparry@talktalk.net

Subject : Cocklebarrow Vintage R/C Events 2019.

7 July 18 August 29 September

Cocklebarrow Vintage R/C
Signposted from Aldsworth Glos. on the B4425 between Cirencester/Burford and off the A40 between Northleach and Burford [follow SAM 35 signs].

All types of R/C up to 1969 sport flying no competitions.

BMFA insurance essential [A certs. not required]

Tony Tomlin 02086413505 pjt2.alt2@btinternet.com

North Cotswolds MAC August event from Gray

I'm pleased to announce that the North Cotswold MAC's Fly For Fun 2019 event will be held on Aug 10th and 11th at Far Heath Farm, Moreton-in-Marsh. This will be a special one, as we will be celebrating the club's 70th anniversary.

We'll be holding two special events alongside our regular programme, with informal judging and prizes - on the Saturday for Vintage and Nostalgia models and on the Sunday, 21st century designs only!

We'd be very grateful if you could give this an early mention in S&T when you can. I'll send further details after the Xmas mayhem has subsided.

Shilton flying group 2019 fly in dates

May bank holiday vintage fly in
e soar glider fly in July 13th + 14th
autumn vintage fly in Sept 07th + 08th

Hope to see you there, regards Boycott and Nick

Boycott Beale bealekraft@outlook.com

FLITEHOOK

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Contact: Tel. 02380 861541
E-mail flitehook@talktalk.net

Café on Site

Flyers £8
Juniors & Spectators Free
Flyers must be BMFA Members

Sundays 10.00a.m. to 4.00p.m.

2019
8th September 2019
13th October 2019
10th November 2019
8th December 2019
29th December 2019

2020
12th January 2020
9th February 2020
8th March 2020
12th April 2020

Miss 35 parts set and plans

Ref: otmiss35

Miss 35, exclusive SAM35 model designed by David Banks. Laser cut parts set and full size plans. Includes formers, fuselage sides, cowl cheeks, bulkhead, gear mount, fin support, tailplane and fin outlines, wing ribs, tip shapes and many smaller parts. Builder to supply stripwood/wire and covering.

Designed for the new SAM engines - click here for details

Note to builder - DO NOT use the plan in Aeromodeller, as they were unable to get the scale correct of their magazine printed plan. A correctly dimensioned plan is included with your parts set

The SAM35 "Miss 35" has been designed around the Red Fin special edition motors

Price: £50.00 Inc VAT
55.00 **USD** | 59.19 **EUR**

KK Scorpion - 44" cabin model

Ref: ot-kkscop

Parts Set for the attractive Keil Kraft Scorpion. Includes all the shaped balsa and plywood parts required to build the basic airframe, including bulkheads, formers, wing ribs, shaped trailing edge for wings and tail. Shaped outlines for fin and rudder, sub fin, cowl cheek sides, dihedral braces, gussets, plus many smaller items.

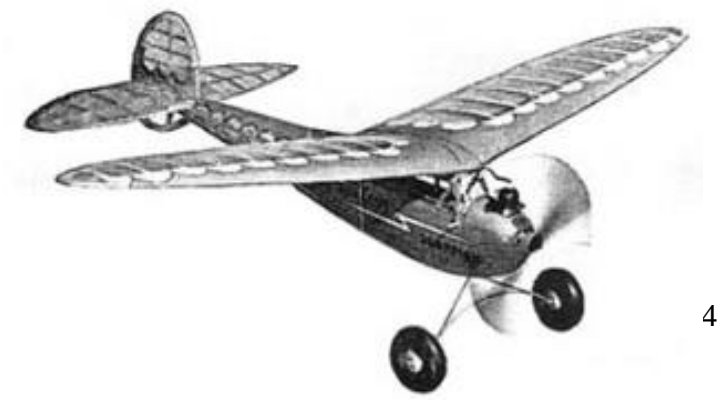
Builder to add their own stripwood and covering.

Full size plan included.

KK Scorpion Specification
Wingspan - 44 inches
Suitable for 1.3 to 2.5cc engines or conversion

RRP: £55.00 Inc VAT

Price: £55.00 Inc VAT
60.50 USD | 65.11 EUR



Super Scorpion - 66" cabin model Parts Set

Ref: ot-kksupersco

Parts Set for the attractive Keil Kraft derived Super Scorpion. Includes all the shaped balsa and plywood parts required to build the basic airframe, including bulkheads, formers, wing ribs, shaped trailing edge for wings and tail. Shaped outlines for fin and rudder, sub fin, cowl cheek sides, dihedral braces, gussets, plus many smaller items. ncludes plan, which shows RC Assist conversion. Builder to add their own stripwood and covering.

KK Super Scorpion Specification

Wingspan - 66 inches
Suitable for 3.5cc engines or conversions
Price: £75.00 Inc VAT
82.50 USD | 88.79 EUR

Air Trails Sportster Cabin Model

Ref: ot-airtrsport

Air Trails Sportster by Ben Shereshaw from Air Trails 1939 - 46in span Cabin model. Parts Set includes all shaped balsa and plywood parts to complete the airframe, such as fuselage sheeting, bulkheads, formers, wing ribs, tip shapes for wing and tail/fin, wing joiner boxes, plus many smaller parts. Includes full size plan

Price: £55.00 Inc VAT
60.50 USD | 65.11 EUR

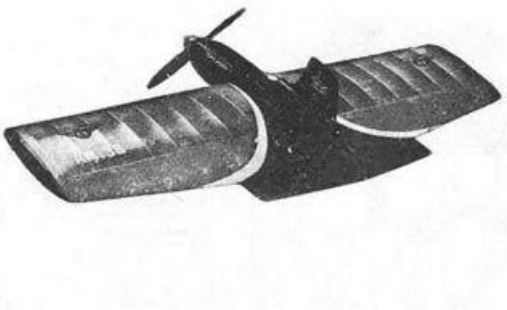
Linnet Parts Set 43" span

Ref: ot-linnpk

Quirky looking design by GR Woollett published in Aeromodeller January 1954
43in span suits 1.3cc size motors. Tricycle undercarriage and low wing, looks semi-scale and makes a pleasant change from the usual high wing cabin job.

Part Set includes all the laser cut balsa and plywood parts, such as cowl cheeks, fuselage sheet, formers, bulkhead, LG mount, shaped gussets, fin outlines, wing and tailplane tips, wing ribs, sub fin, wing seat, plus many smaller items.

Parts fit original Aeromodeller plan which is not included - shown for reference only. Builder to supply stripwood and covering to complete basic airframe.



Mercury Toreador CL Parts Set

Ref: ot-kktore

Parts Set for the **Mercury Toreador** model. Suitable for Stunt or Combat. Laser cut parts will save you hours of tedious cutting and include fuselage sides, fuselage top & bottom in one piece 1/2" balsa, bulkheads, formers, fin/rudder, wing tip shapes, wing ribs with additional tab to allow the symetrical wing to be built on a flat board without packing each rib, bellcrank mount, spinner ring, shaped trailing edge and elevator.

Also includes **full size plan, and canopy, vac-formed in clear plastic.**

SpecificationsWingspan - 36 inches, weight around 20 oz and suitable for 2.5 to 3.5cc engines (AM35 shown on plan). Builder to supply small amount of stripwood to complete.

Price: £50.00 Inc VAT
55.00 **USD** | 59.19 **EUR**

Regards,
Leon Cole
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Tel: +44 (0)1362 668658
www.belairkits.com
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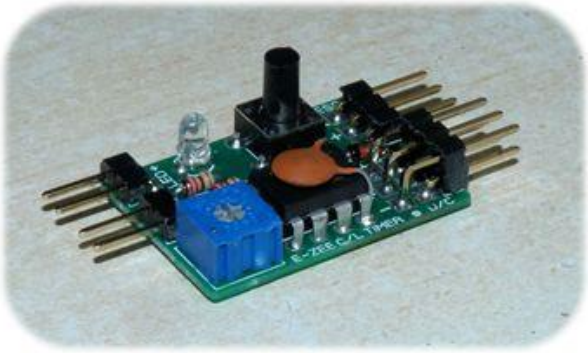
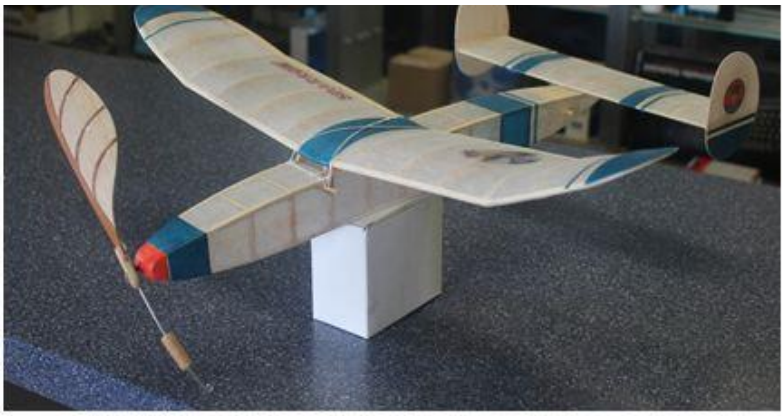
Tinplate CL tanks….Bellcranks, Lines, Handles, Cloth Hinge Tape, Leadouts etc

Cox Engines & Spares



Electronic Timers for CL & FF



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