Sticks and Tissue No 106 – September 2015

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.

George Vale's Southerner

From George R.Vale.

Finally finished my Southerner Mite project, after practically a year. Purists would say it's not authentic, which is true because I've given it a bigger wing. Doing a few sums showed that the original wing would have too little area to support the intended radio and engine, and nowhere near the necessary strength. So I increased the span to 36" and made the centre section constant chord, broadening the tips to match, and sheeted the LEs with soft 1/16" balsa. Wing area 156 sq. in., an increase of 27% on the original. I think it looks well, though of course I'm biased. Readers' comments welcomed.

Everything was difficult about this little beastie. The 3/32" square fuselage longerons kept breaking just with handling during the building process. At one stage I caught my sleeve on the u/c, and the fuselage hit the floor, smashing half the longerons. If I was building another model like this I'd make the longerons 3/16" deep and inset them halfway into the formers (see diagram, S_f9.).

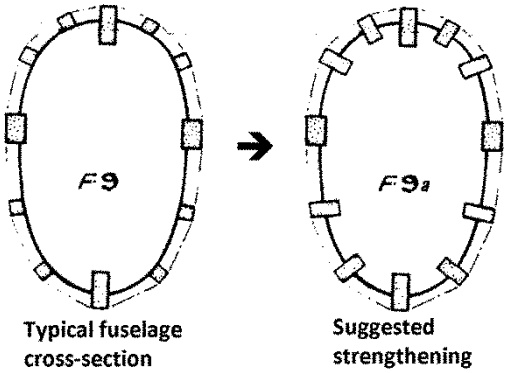
Without spending a king's ransom I couldn't find any suitable engine to buy except a Cox Babe Bee, so that had to do. Then it needed nitro fuel, which had to be a special order. Propeller -- recommended 6x3 unobtainable, so had to buy a 6x4. Cox engines need a 1.5 volt glow battery, so that had to be another special, plus a new glow lead to connect it with. I failed to find a stockist of 1-1/4" spinners, and had to make one up from balsa laminations as per plan. That's strictly for the photos; how long would a balsawood spinner last, landing as I do in rough pasture land?

For the radio I didn't want to buy ultra-light stuff so I used a pair of Hitec HS-80 servos, an 800mAh NiMh and a Futaba 2.4GHz Rx, all of which I already had, total weight 3.9oz. I found that Maplin supply nice little slide switches, which helped with the weight and space. Fuselage nylon covered, wing & tail Litespan. All-up weight 9.5oz.

First flight yesterday was a mad affair. To limit the power I diluted the nitro fuel with straight, set the Cox rich and used the old trick of putting the prop on back to front. But of course a glow leans out as soon as the nose rises, so she climbed like a drunken rocket. Miles too much `up' trim was evident, and digital trims are very cumbersome to adjust when you're in a panic. Thought I'd got it somewhere near, then the engine cut. It only does about 2 minutes on the integral tank. Lined up for a landing whereupon she displayed a fine glide and looked likely to overshoot by a country mile. S-turns led down to an undignified cartwheel landing, but fortunately nothing broke.

The tranny trim was at its maximum, and since I've no elevator clevis any further trim adjustment is a workshop job, so I flew my canard model for the rest of the afternoon.

The lesson for me is this. Little models like this are a challenge to make, and gorgeous when finished (if you get it right), but to end up with a practical machine that you can take out and fly week after week, you need to start a fair bit bigger.


F9
F9a
Typical fuselage cross-section
Suggested strengthening

A 22-24 SPAN SCALE MODEL FOR A.P.S. POWER GROUP 'A-B MOTORS (·15-·5 CC)

LUTON MINOR

(PROTOTYPE)

DESIGNED BY

W.E. Mooney

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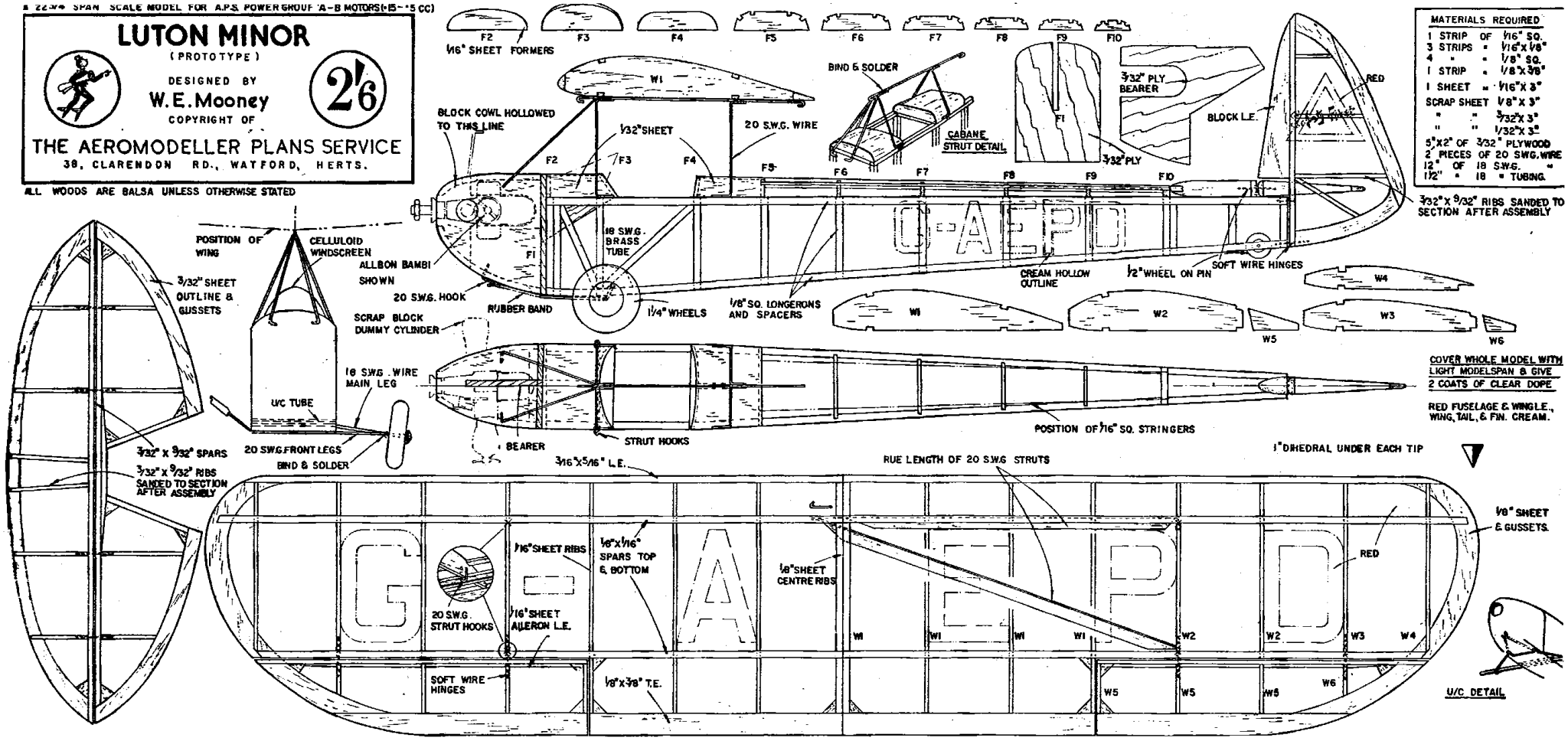
THE AEROMODELLER PLANS SERVICE

38, CLARENDON RD., WATFORD, HERTS.

2/6

ALL WOODS ARE BALSA UNLESS OTHERWISE STATED



MATERIALS REQUIRED

1 STRIP	OF	1/16" SQ.
3 STRIPS	"	1/16" x 1/8"
4 "	"	1/8" SQ.
1 STRIP	"	1/8" x 3/8"
1 SHEET	"	1/16" x 3"
SCRAP SHEET		1/8" x 3"
"	"	3/32" x 3"
"	"	1/32" x 3"
5" x 2" OF		3/32" PLYWOOD
2 PIECES OF		20 SWG. WIRE
12" OF		18 S.W.G. "
1 1/2" "		18 " TUBING.

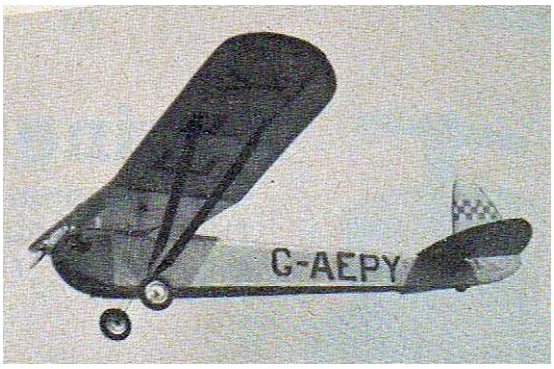
COVER WHOLE MODEL WITH LIGHT MODELSPAN & GIVE 2 COATS OF CLEAR DOPE

RED FUSELAGE & WING L.E., WING, TAIL, & FIN. CREAM.

Luton Minor prototype 23 inch FF for small diesels by Walt Mooney From Aero Modelelr June 1958
Smallest in our scale plans range, this 23 inch ultra-light flies just like the real thing with the new Miniature engines

This little high-wing ultra-light aircraft is already a modeller's favourite and is likely to become more of a household word as years go by, for we learn that plans and perhaps kits for building the full-size aircraft are shortly to be available in England through the newly-formed Phoenix Aircraft Co.
G-AEPD was the prototype, as distinct from the one represented by our larger 42 1/2-in. span AEROMODELLER Plans Service scale model for 1 c.c. by Eric Fearnley, and has differences in the wing strutting, tailplane profile and undercarriage.
Famous Californian modeller Walt Mooney chose it originally for a subject for a rubber power scale, but put it to one side when he discovered an extreme lack of useful propeller clearance.
Bambi power. Eventually, when the AlIbon Company introduced the miniature Bambi diesel his dream was realised and the prototype model is now approaching three years old, has had two re-coverings and is a veteran of many many flights. Introduction of the Cox Pee-Wee .020 Cu. fl. glowplug engine in the U.S.A. now makes this a design of popular appeal and with its simple straightforward construction the Minor prototype will be a favourite with all the baby motor fans. Due to its small, size, Walt found that it was impossible to completely eliminate dihedral as on the full size, but this is just about the only concession made to true scale apart from the engine which, of course, on the prototype was an inverted Vee-twin JAP motorcycle unit.
The dihedral problem can be eliminated perfectly by means of transparent pylon at the centre strut, but it is thought from the appearance point of view, introduction of actual dihedral is the lesser of two evils.
One must select the material carefully choosing lightest possible grades of wood for all components in order to reduce the all-up weight to an absolute minimum. The high lift thick section wing and fine pitch required by these tiny engines will mean that the actual airspeed is extremely low and very much in keeping with the 75 m.p.h. airspeed of the full-size.

As can be seen by the photo on this page of the two Bambi-powered prototypes, the Minor is a most attractive shape (many say that the prototype was far more attractive than the later versions) and for colour scheme we suggest red fuselage and wing leading edges with cream wings, tail and fin and the red "Safety First" triangle on the vertical tail surfaces as seen on G-AEPD.



Walt Mooney's sons, Douglas Martin, aged 2, and Conies Ryan, aged 4 (who said the man wasn't airminded? —will the next be Chance Loening?) lend size comparison for pop's diminutive scale Minors, At right one of the models is seen taking the Californian air with zest, the tiny 4-in, prop singing a song of 12,000 r.p.m. on the Bnmbi diesel

On the deck, Walt's second model displays the simple lines, engine access —and the dihedral which distinguishes it from the full-size. Another Luton Minor, a 42 1/2.inch span model of the production version by Eric Fearnley, is available as plan FSP/333, price 3s. through .A.P.S., and is designed for 1 c.c. engines.

From Dick (in Mauritius.)

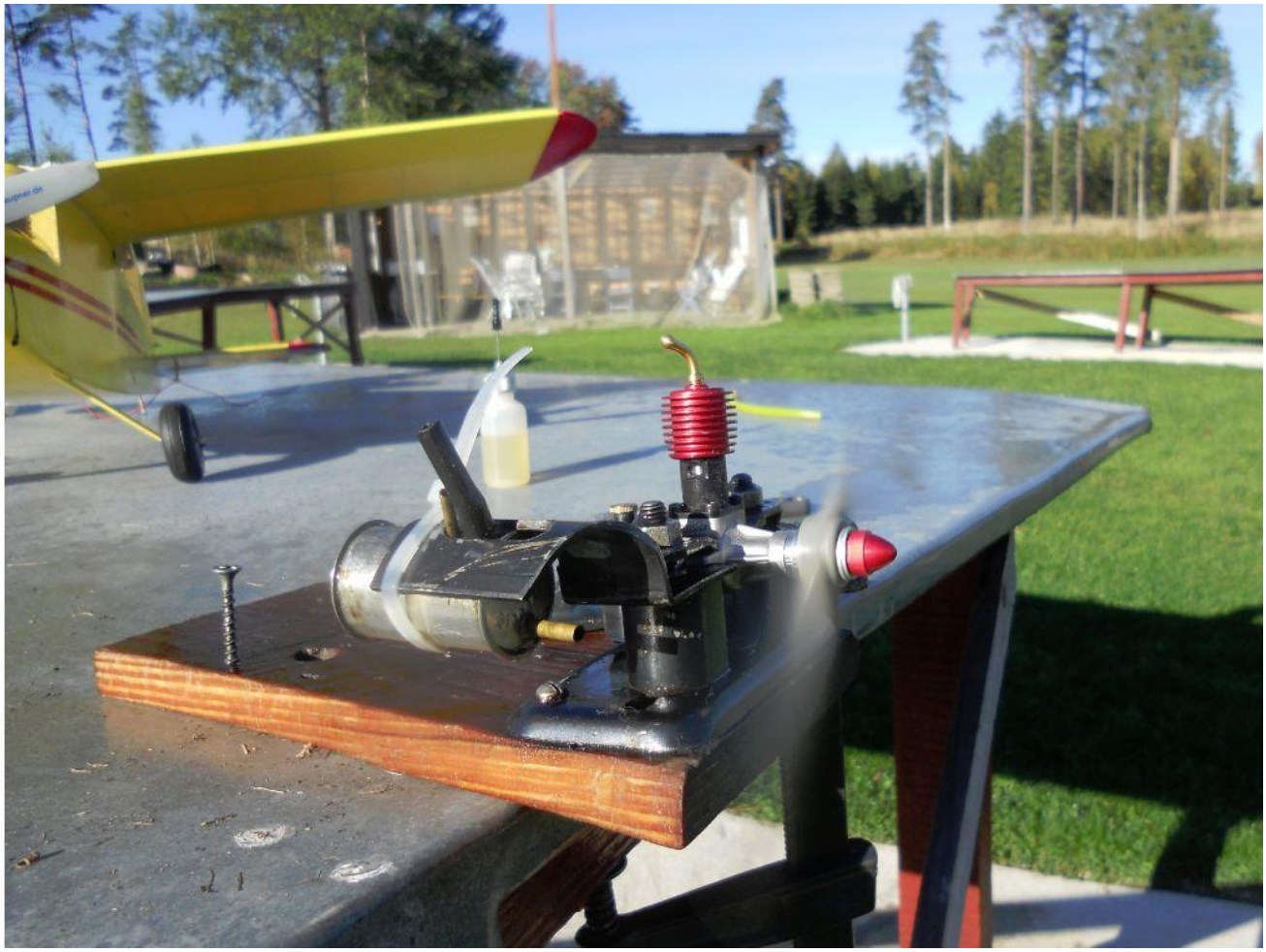
Hi James! Thanks for 70 pages of nostalgia to wonder at! Real variety of designs and some fabulous photos! Attached: My den, but nowhere to fly them!

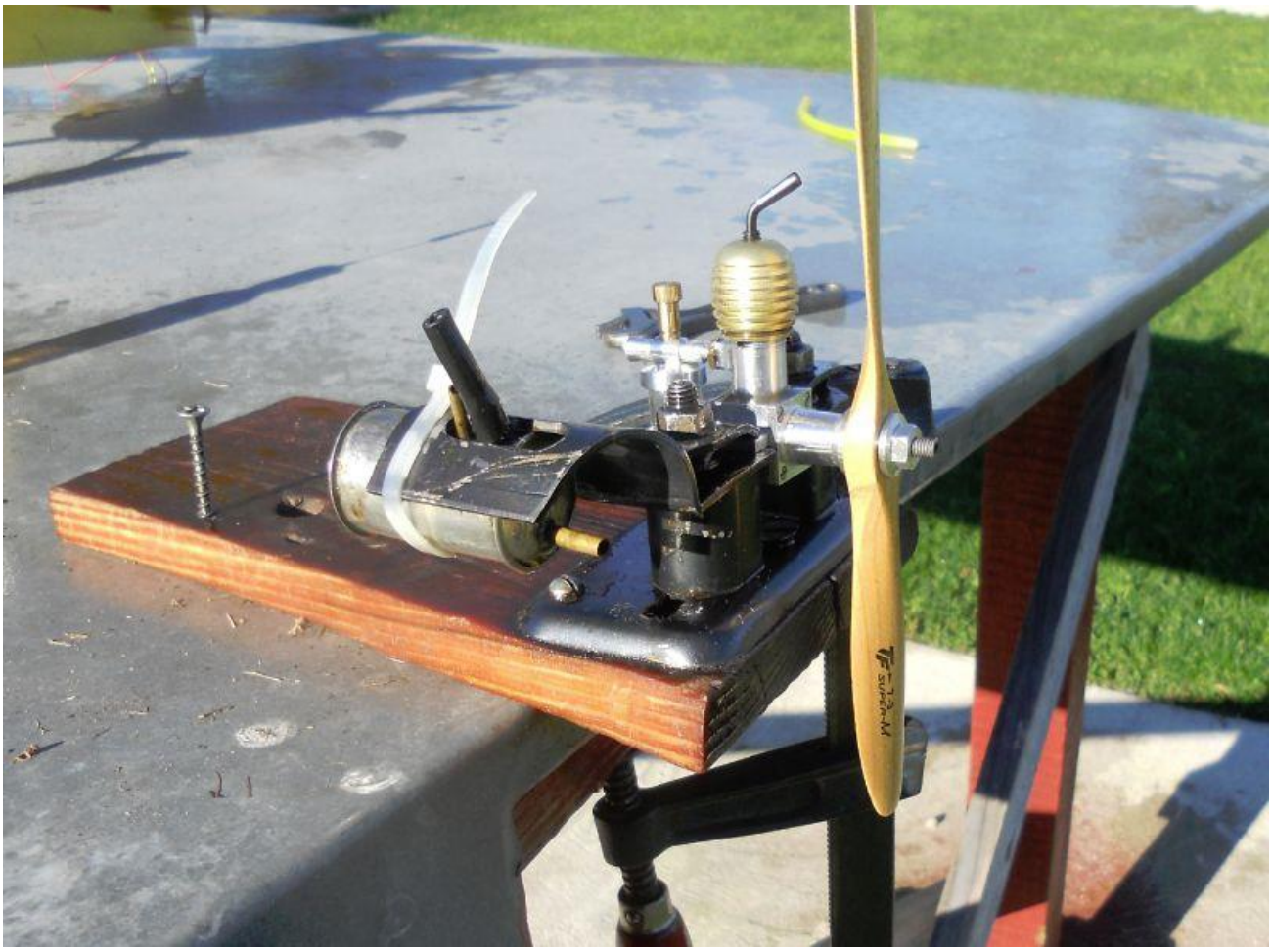
Jörgen Daun, Sweden

Hi James some pic,s from my clubs annual seaplane meeting soory to say it was far to windy for my smallplanes that I bring this day only the Tomboy flew I also brought my new Privateer 36 and my trusty old Navigator and also some of my friends planes all Electric I am almost alone with Diesels and Glow Engines but stubborn I am and wont Quit.

Hi James Another pic from our seaplane meeting Tomboys never let you dawn

Another day at the field no wind and sunni and my Chatterbox performed very good as usual I am surpriced of the very fine glide it has despite its small wing. I also test run a couple of new Engines and they performed very well the eng are Pesky 0,4 and Red Phin 0,5 rv and last Polodnik 0,75





From Ken Ardenrich - 1974 new paint hardly dry sn missing

G-MASC my a/c in the Marcel Dassult club colours 74. Same as the one we collected but by 89 but a lot tattier! Just sent by a very elderly French man previous owner who flew over 2000 hours in it

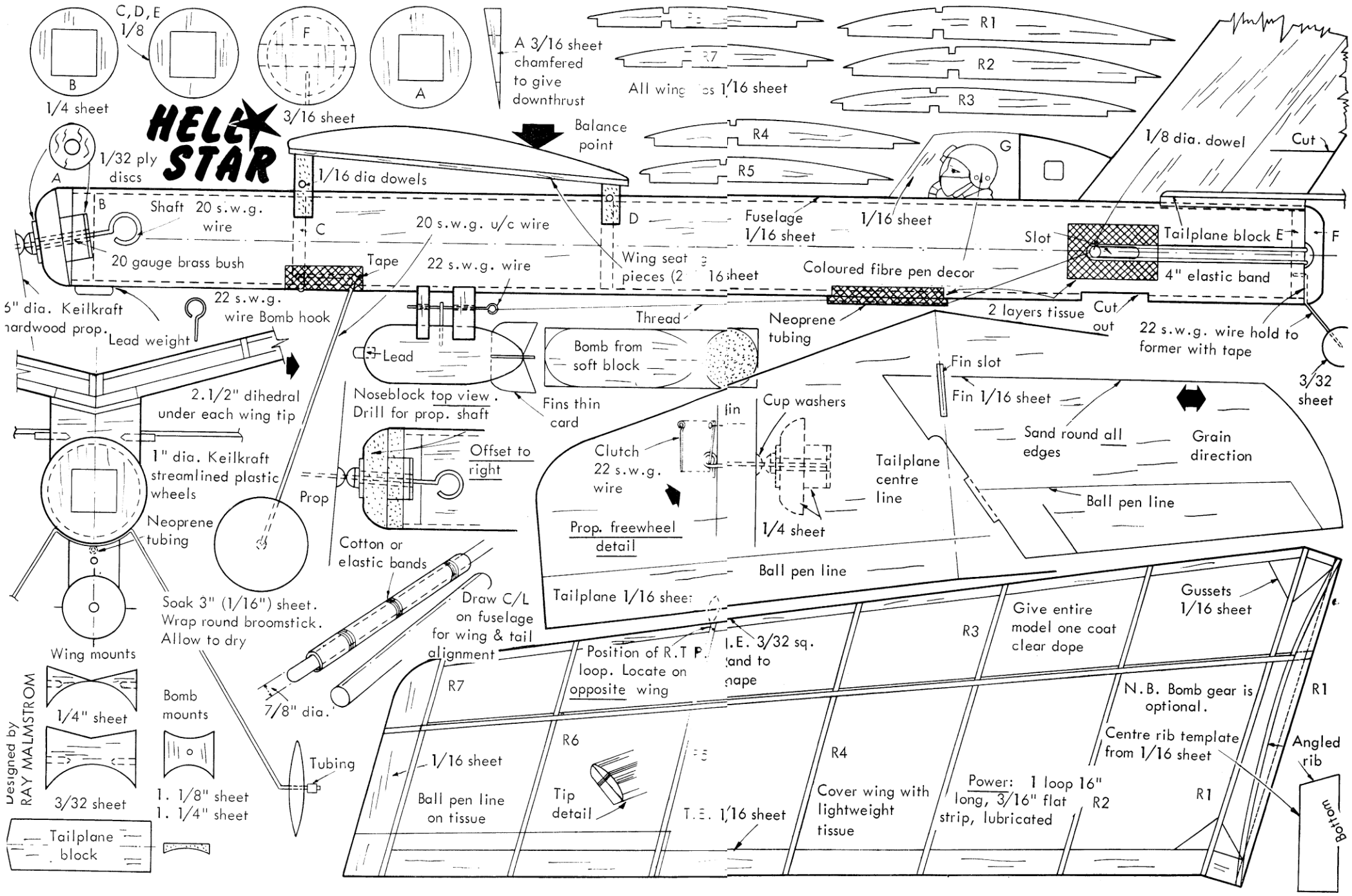
Another Time Warp Flight – Karl Gies

This flight was made last evening about 45 minutes before sunset. I wound the 1/4" 24 strand motor to 40 ounce inches of torque, about 800 turns and launched the model. There is for me something quite transformational about flying vintage models, especially Korda and Lanzo designs. I have an out of body experience in becoming Dick or Chet that starts with winding the model and this lasts until the model touches down or goes out of sight. This flight came down right into the setting sun but we had a good line on and another modeler and myself hiked out about a third of a mile and found it. Ted, the guy who went with me, flys ARF electric powered models and was totally amazed at high this model climbed with the ensuing floaty glide. GOTO You Tube and type in The Long Flight video, a thirty minute drama made by the late Herb Franck, a member of NEWG - The New England Wakefield Group in about 1966. It is in three parts and at the end of the first part you will get the links to parts two and three. As a result of this superb drama, the only one ever made about free flight, you will soon start building another model.

Keil Kraft "Gipsy" almost ready for takeoff & getting ready for the upcoming SAM CHAMPS
This model was originally built whilst attending graduate school at the San Jose State College during the winter of 1966-’67. About three years I made major repairs as it hit a parked car way back when. I almost never throw anything away. This time it is covered with Japanese tissue over 1/4 mylar and the motor is 24 strands of 1/8” FAI rubber. This model is a swell flyer and it will be in the air at the SAM CHAMPS. The earliest date I can find on it is 1949. It is an 8 Ounce Wakefield, 40” ws, 17” free wheeler prop. It has many, many flights on it over the years

Realizing my 1939 Korda Wakefield Winner in dead calm weather shortly after nine this morning. I wish the model had gotten a little farther. This model is ready to packed up for the trip,

My Korda "Open Road Special" going up into the wild blue yonder this morning about 9:30 - right now it is 90 and windy. Pretty much dead calm this morning and in the low 70's.


HELI STAR
C, D, E 1/8
B
1/4 sheet
F
3/16 sheet
A
A 3/16 sheet chamfered to give downthrust
All wing ribs 1/16 sheet
R1
R2
R3
R4
R5
R7
Balance point
1/32 ply discs
1/16 dia dowels
Shaft 20 s.w.g. wire
20 gauge brass bush
20 s.w.g. u/c wire
Tape
22 s.w.g. wire
Wing seat pieces (2 16 sheet
Fuselage 1/16 sheet
1/16 sheet
Coloured fibre pen decor
G
1/8 dia. dowel
Cut
Slot
Tailplane block E
F
4" elastic band
2 layers tissue
Cut out
22 s.w.g. wire hold to former with tape
3/32 sheet
5" dia. Keilkraft hardwood prop.
Lead weight
22 s.w.g. wire Bomb hook
Lead
Thread
Neoprene tubing
Bomb from soft block
Fins thin card
2.1/2" dihedral under each wing tip
Noseblock top view. Drill for prop. shaft
Offset to right
Prop
1" dia. Keilkraft streamlined plastic wheels
Neoprene tubing
Cotton or elastic bands
Clutch 22 s.w.g. wire
Cup washers
Prop. freewheel detail
1/4 sheet
Tailplane centre line
Fin slot
Fin 1/16 sheet
Sand round all edges
Grain direction
Ball pen line
Ball pen line
Tailplane 1/16 sheet
Soak 3" (1/16") sheet. Wrap round broomstick. Allow to dry
Draw C/L on fuselage for wing & tail alignment
Position of R.T.P. loop. Locate on opposite wing
L.E. 3/32 sq. and to shape
Give entire model one coat clear dope
Gussets 1/16 sheet
R3
R7
R6
R4
R1
R2
N.B. Bomb gear is optional.
Centre rib template from 1/16 sheet
Angled rib
Bottom
Wing mounts
1/4" sheet
3/32 sheet
Bomb mounts
1. 1/8" sheet
1. 1/4" sheet
7/8" dia.
Tubing
Tailplane block
1/16 sheet
Ball pen line on tissue
Tip detail
T.E. 1/16 sheet
Cover wing with lightweight tissue
Power: 1 loop 16" long, 3/16" flat strip, lubricated
Designed by RAY MALMSTROM

Hellstar from Aero Modeller May 1967

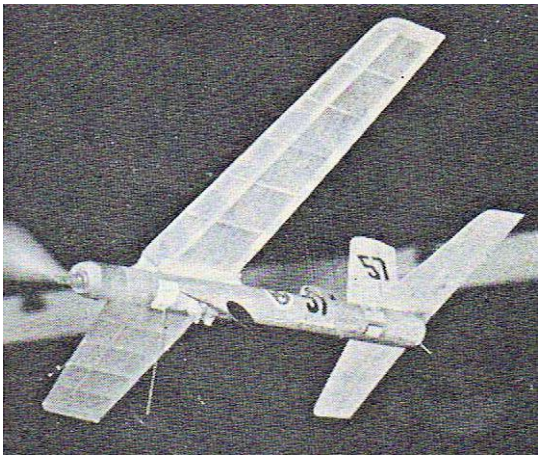
Ray Malmstrom rings the bell again with an 18" dandy for indoor activity

Hellstar possesses what the car salesmen call an "optional extra". in the form of a simple to install bomb (or midget glider) dropping gear. Fit it—or forget it—as you wish, Helistar turns in a great flying performance either way, and unlike that optional extra on a new car you get the extra on this job for free. Feel inclined to have-a-bash? Great!

Then let's get cracking with the simple structure. Soak a 13 in. x 3 in. sheet of balsa in warm water for about 20 mins. Then wrap it around a broomstick,' dowel rod etc. of approx. 7/8 in diam. Rubber bands or thread will hold the balsa sheet in position, leave it to dry, preferably over-night. Cut out the circular forrmers, B, C, D, E. Open out the balsa tube and lightly mark their positions on the inside. Cement in place, close , tip the tube and cement well along the join. Hold in position as before until set. Draw a line down the centre of the fuselage tube to help

you line up the wing mounts, tailplane block, etc. If you are going to fit the release gear cut the rear dowel slot, otherwise just drill on 1/8 in. dia, hole. Reinforce the slot with two layers of tissue doped on.

Also, cut a small rubber motor access hole, fix the fuselage below the rear dowel peg. Add former A to nose. This is chamfered as shown to give down-thrust to the noseblock. Bend tailwheel wire and push upper end into former E. Hold with a small piece of silk or tape, well cemented. Add tail former E. Bend u/c wire to shape and cement in place on fuselage tube, reinforce with silk or tape. Put I in. dia, wheels (K.K. plastic streamlines) on axles and retain with a piece of elec. tubing from which the wire has been removed. The tubing must be a tight fit on the axle ends. Cut out the two wing mounts, mark their positions on the tube and cement in place. Cut two pieces of 1/16 in. sht. and make the wing seating on top of the mounts. Add 1/16 in. dia, dowel rods to the wing mounts. The wing on Hellstar is adjustable and removable and these dowels hold the rubber bands retaining the wing in position. Cut the tailplane block from 3/32 in. sht, shape carefully, and cement centrally at end of fuselage. Give entire fuselage one coat of clear dope and very lightly sandpaper. The insignia of the Swedish Royal Air Force on our original Hellstar were painted on thin



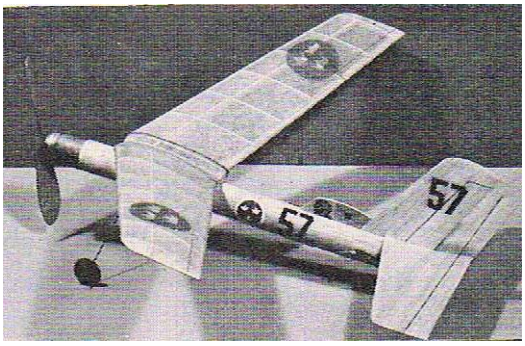
paper with poster colours, and then dry rubbed with candle grease and polished with a piece of clean rag. This not only improves the appearance but gives some measure of water-proofing the markings. They were then cemented in position. A band of coloured tissue is doped around the nose for decoration and added strength. Cut the fin and tailplane from 1/16 in. sht. sand round the edges and give the parts a coat of clear dope one side at a time and pinning to building board while drying to avoid warps. The squadron numerals on the fin and fuselage are waterslide transfers. Cement tailplane to tailplane block seeing that it is at zero incidence. Slot the fin into the tailplane and cement, checking that it is upright. Cut out cockpit piece G, give a coat of dope and paint in the pilot, cement to fuselage and fin.

Build a left and right wing panel. Use centre rib template to obtain correct angle of centre ribs, join panels together. Check that there is 2 ½ in. dihedral

under each wing tip. Cover wing with lightweight tissue, shrink and give one coat of clear dope. Pin one wing panel at a time to building board. Use little 1/4 in. sheet balsa blocks under leading and trailing edges to keep wet undersurfaces clear of board. With this method you avoid our old enemy, warps.

Build up the nose block, noting that when viewed from the top and rear the hole for the brass bearing bush should be drilled a little to the right. This angle (off-set) will take care of propeller torque, use a 6 in. diam. hardwood KeilKraft prop (from your model shop) and fit the simple freewheel shown on the plan. 1f you wish to fit the bomb release gear cement the bomb mounts centrally below the fuselage where indicated. Also on the centre line cement a small length of neoprene tubing. Hold in place with two layers of doped-on

tissue. This tube acts as a guide for the release thread. Make a wire release pin from 22 s.w.g. wire, to the pin tie a length of fine thread. Run the thread through the tubing and tie it to one side of the rear dowel peg. Arrange ths so that when the peg goes to the rear end of the slot the release pin will be clear of the bomb hook. Make bomb from soft block fins from thin card. Weight nose of bomb with a tiny piece of lead.

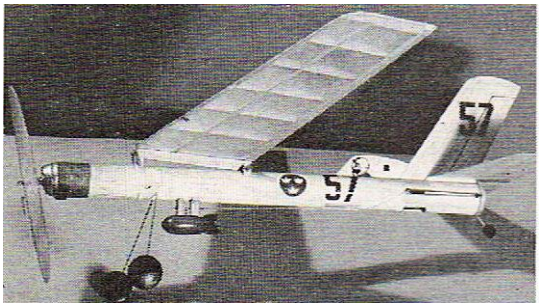


1f you would like to drop a midget glider we suggest that you make the glider from 1/16 th in., 1/32 in. with a wing span of around 4 to 5 in.

Swedish marking on the wings of our own Hellstar are cut from blue tissue (the wings are yellow tissue)

to save weight. A 4 in. long. approx.. rubber band operates the bomb release, the hand is slipped over one end of the dowel peg, passed around the end of the fuselage through the slot in tail former F. and slipped onto the other end of the dowel peg. Some adjustment (by trial and error) of the tightness of the rubber band may be necessary to get the best moment for releasing the bomb.

You can now install the rubber motor (first lubricate well) and balance your Hellstar. Balancing is very important, don't skip it! It should hang level both from front and side views when suspended by a pin and thread from the balance point. A tiny amount of weight may be added to nose or tail to achieve correct balance.



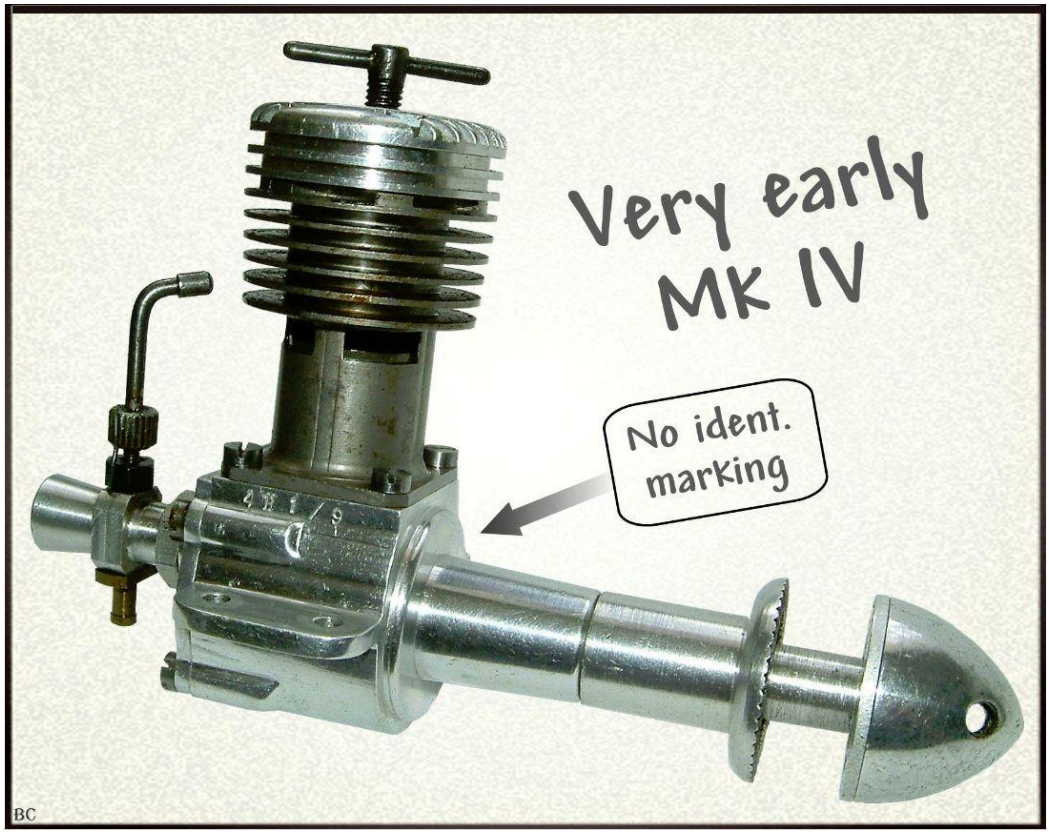
Test glide over long grass on a calm day. From a hand launch (launch gently, never throw the model) Hellstar should glide down to land about 20 - 25 ft. in front of the point of launch. Obtain a straight glide. Slightly bending the rudder trailing edge will correct a turn. Bend in opposite direction to the turn.

You can then try a "power-on" flight. If model dives reduce the downthrust, if it stalls increase it, if it

banks violently to the left increase the off-set angle.

Take time with your trimming and you will be delighted with Hellstar's performance. 35-45 sec. flights are common even with the commercial prop. Fit a carefully carved balsa prop and you'll be heading for the minute. Chocks away—lets roll!

James, Here are a couple of unusual (and more usual) versions of one of my favourite engines, the early E.D. Mk IV 3.46 cc, with the crankcase machined from the solid. Examining these early E.D. engines, one is obliged to admire the workmanship and hand-crafting... so « nice » compared with the modern NC stuff.

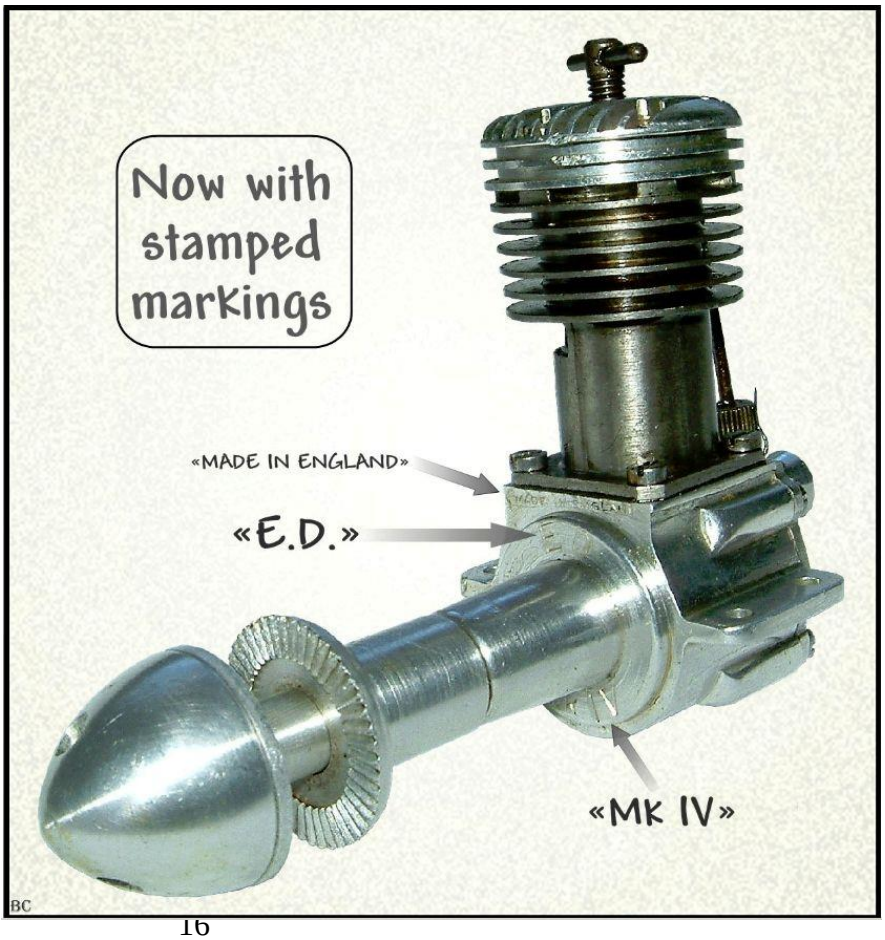


The engine on the left is the earliest 3.46 that I've seen.

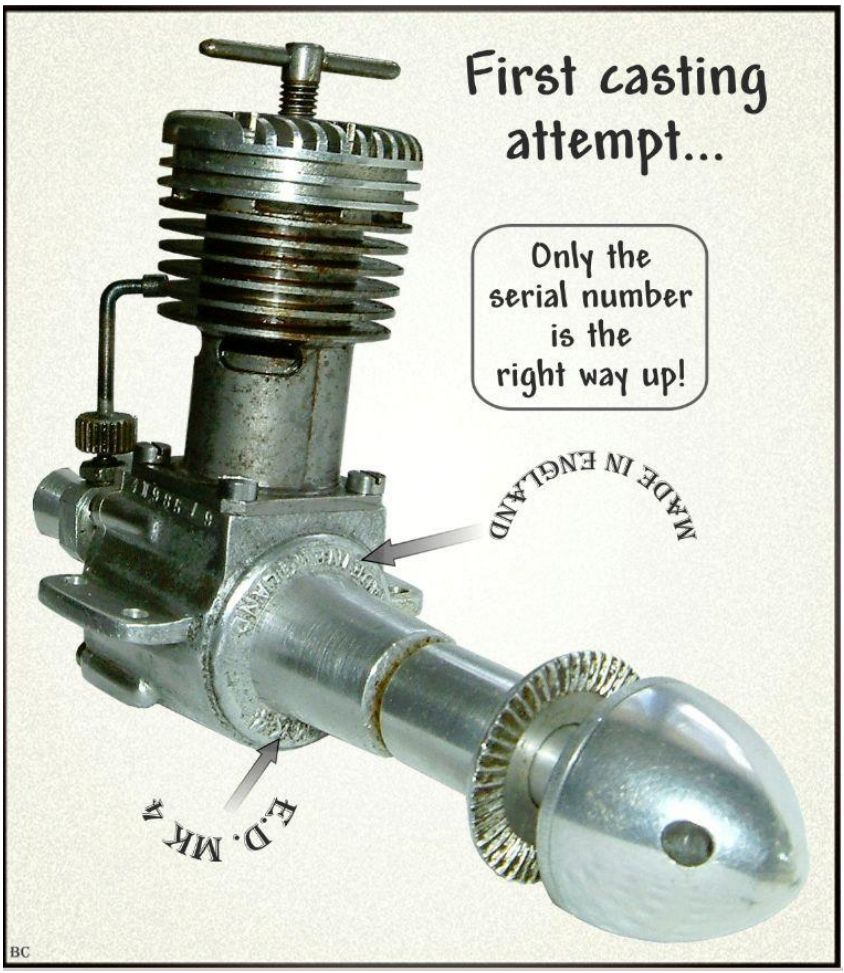
There are no ident. markings, only the serial number that identifies the engine as the first one made during the month of August 1949, which was a month or two before they were released on the market

The engine on the right is the first version generally marketed.
Most of the engines made between September and December 1949 are like the one in this photo.

The ident. markings are now stamped on, and the hand crafting is still impressive.



This first attempt at producing a cast crankcase is a joke! Have a look...



I've never seen anything written about this first attempt at producing a cast crankcase, in late December 1949...

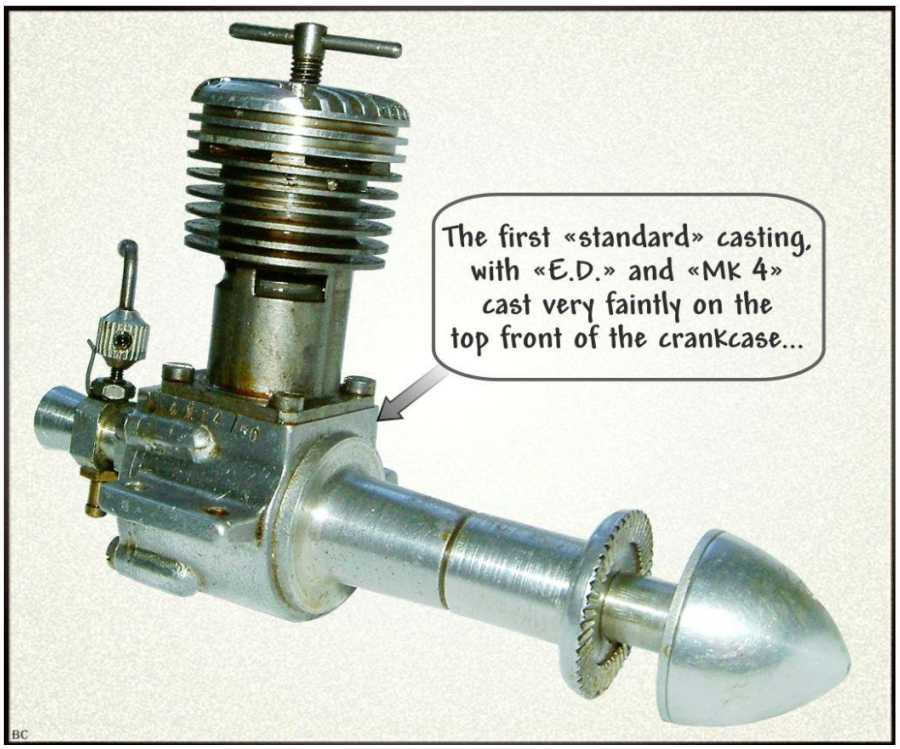
Have a look at the ident. markings, they're all UPSIDE DOWN !

I'll bet that whoever was responsible « took a bit of stick ». Anyway, the result was that E.D. went back to entirely machined cases for a short period during January 1950, while this error was sorted out...

Note the oval exhaust ports. On these early 3.46 engines (1949/50), a few have oval exhaust ports, in stead of the more usual rectangular shape.

After the minor fiasco of their first attempt, E.D. finally got the casting issues sorted, mainly by almost deleting the ident. markings. The « E.D. » and « Mk 4 » markings are very faint indeed on this early cast crankcase... Shame, it's a bit of « character » lost.

However, the superb hand-crafting remained. Some of the fuel needles had small set screws in the thimble, like this one, for those who may want to change the needle length or taper.



Finally, I've tried to demonstrate the superb starting and running characteristics of these engines in a little video, here: https://youtu.be/sOp1JIADpK8

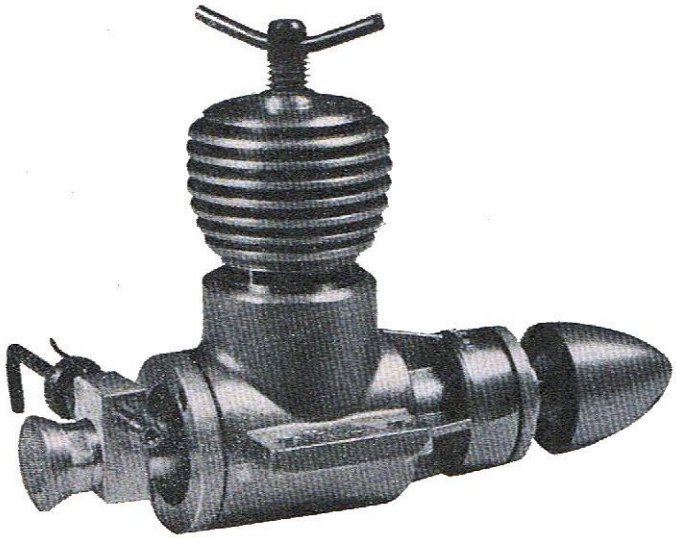
Taken at the Great Grape Gathering of SAM 86 Sept 11th 2015 – Richard Barlow, Canada

Just to let you know that I am still winding rubber. I won the Senator event and was second in Cloud Tramp.

From Boycott Beale

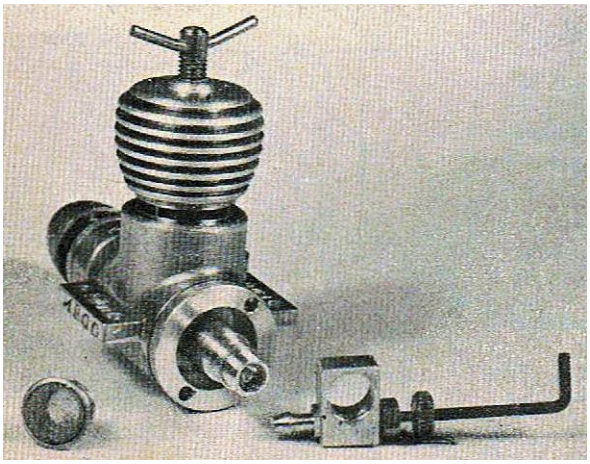
Good morning again, in case you didn't receive any pics here they are again as before its Derek's latest as built by myself as proof of concept before production, a definite success and a great stablemate for his Popsie,

(I've had the pleasure of seeing Derek's prototype come together over the last few months as drawings, cutting and building. At 46" span Coquette will be available as a kit soon. JP).
derekfoxwell@btinternet.com



The Taifun Hurrikan 1.48 cc diesil "one of the most interesting model engines yet seen from Germany"
Model Aircraft September 1956

Just going on the market in Germany is the new Graupner Taifun Hurrikan engine. A high speed 1.5 c.c. diesel, the Hurrikan s an out-of-the-rut design having twin ball-bearings and reed valve induction. This is the seventh Taifun engine we have had through our hands. Previous models have been the original 2.5 c.c. shaft-valve, ball-bearing Taifun produced in 1953, the subsequent disc-valve 2.5 and 3.5 models, and the other three models in the current Taifun range, the Hobby. Rasant and Tornado.
The Hurrikan bears a distinct external family resemblance to all previous Taifuns and continues the cylinder design of the current Hobby, Rasant and Tornado. Piston, connecting-rod and crankshaft design are also similar, except, of course, that a solid shaft replaces the ported shaft of the rotary-valve models. Taifun engines have always been well made, with clean diecasting and good quality machining, and the Hurrikan is no exception. As with the other current models, Arden-type radial porting is used, consisting of four exhaust slots and four internal transfer grooves.
Perhaps the most interesting feature of the engine is the reed-valve induction unit. This more losely resembles the classic American Cox design than any of the reed-valve systems which have followed it.
The method of assembly closely follows that of the Cox original, and the Hurrikan even has the same type of multi-jet carburettor and screened intake.
The base of the unit consists of a machined duralumin body which screws into the rear of the crankcase, and also includes the carburettor intake. On the crankcase side of the body are mounted the reed-valve parts consisting of two reeds, an aluminium backing plate which protects and presumably limits the amplitude of the reed movement and a ring housing which is a press fit over the inner boss of the body and retains the reeds and backing plate in position. Reeds are of spring brass rather than copper-berrylium. The inner reed is of 0.003 in. thickness and the outer reed is 0.005 in. On the carburettor side, the needle valve parts are carried in a separate unit which fits over the carburettor body and feeds into an annular groove in the latter from which four jets enter the venturi at 90 deg. spacing. The needle-valve unit is clamped in position by a screw-on filter over the carburettor intake. The complete needle-valve assembly can be rotated and locked in any convenient position to suit the installation.
Specification
Type: Single-cylinder, air-cooled, reverse-flow scavenged two-stroke cycle, compression-ignition. Reed-valve induction with sub-piston supplementary air induction. Circumferential exhaust and transfer porting. Conical crown piston.
Swept volume: 1.486 c.c. (0.0907 cu. in.).
Bore:
13 mm. (0.5118 in.). Stroke 11.2 mm. (0.4409 in.).
Compression ratio: Variable.
Stroke/bore ratio: 0.862 :1.
Weight: 3.8 OZ.



General Structural Data
Pressure diecast aluminium alloy crankcase and main bearing housing. Nickel-chrome steel cylinder liner screwed into crankcase and vertically located at base by annular seating. Nickel-chrome steel crankshaft, semi-balanced and running in two ball-journal bearings. Machined duralumin connecting-rod. Cast-iron piston. Duralumin finned cylinder barrel, colour anodised (green) and screwed on to liner. Mmachined

duralumin backplate / induction unit body. Beam mounting lugs.

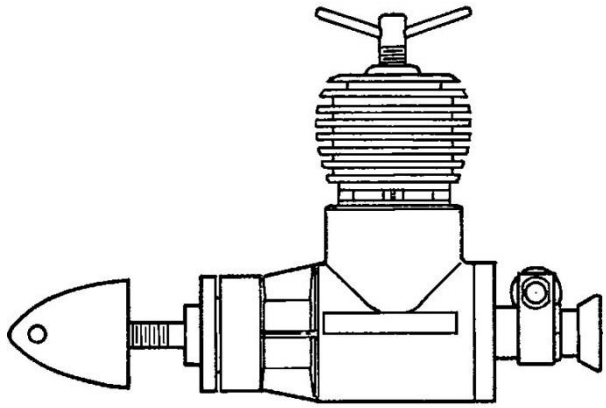
Test Data

Running time prior to test: 1 ¼ hours.

Fuel used: 40 per cent. technical ether, BSS.579, 35 per cent. Shell Royal Standard kerosene, 23 per cent. Castrol "M," 2 per cent. amyl-nitrate.

Performance

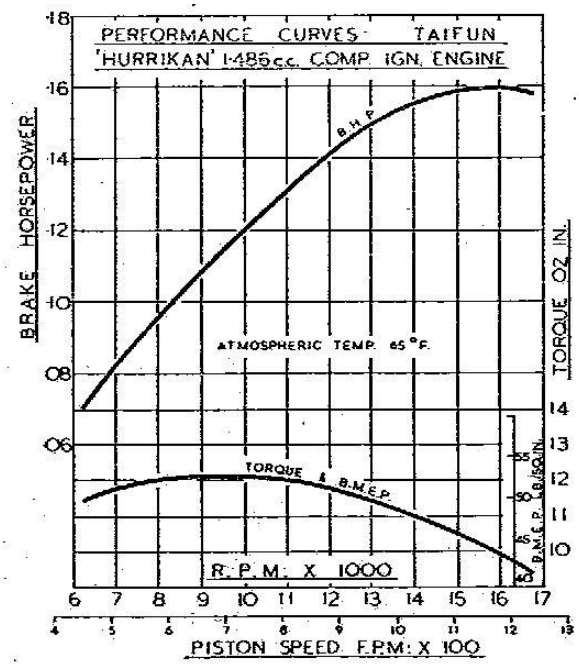
As it is usual for most people, when reading these reports, to form an initial impression of a new engine's performance by the level of maximum power output it produces and as it will be evident from the accompanying performance curves that the Hurrikan's peak output is above average, it is necessary to first add a warning.



Placed on test alongside any reasonably good plain bearing 1.5 cc diesel, and equipped with normal popular size props, the Hurrikan would not show any very startling improvement. Up to 10,000 r.p.m. or so - i.e. using a prop of around 8 in. X 4in., the average user might be forgiven for concluding that the Hurrikan has little or no advantage to offer.

As soon as the Hurrikan is allowed to run at 12,000 r.p.m., and above, however, there is quite a remarkable difference. Instead of the power curve flattening out at anything between 12,000 and 14,000 r.p.m., as is usual with most diesels, there is but a slight falling off in torque and the engine seems to take on a new lease of life. A useful torque continues to be delivered well beyond average peaking speeds, with the result that, on test, the peak power was realised at some 16,000 r.p.m., where an output only fractionally below 0.16 b.h.p. was obtained. This, of course, is very good indeed.

General handling characteristics of the Hurrikan are quite satisfactory. Starting is not exactly "first-flick," and the engine is more likely to respond to the knowledgeable touch of the expert in this respect. Running qualities were good. At high speeds, 13,000- 16,000 r.p.m., the engine was quite remarkably smooth running. Also noteworthy was the way in which it would hold a continuous high speed. The Hurrikan was obviously not in the least distressed by being obliged to turn over 1000,000 times in a continuous run of just over six minutes' duration after only an hour's running-in. It was observed that the engine was relatively clean running and that residual oil blown out was exceptionally clean. (It will have been noted from the test data above that an oil content of only 23 per cent. was used, as is permissible in a well-constructed ball-bearing diesel.)



To get the best from the Hurrikan, it is, of course, desirable to run it at 12,000 r.p.m. or faster and a slightly smaller prop than is usual with 1.5'S (such as a 7 in. X 4in. or 7 in. X 3 in.) may, therefore, be advisable.

Both controls were satisfactory in operation. There was no tendency for the contra-piston to stick and the engine responded readily to the compression lever, hot or cold. Compression adjustments were held firmly irrespective of engine speed. The needle-valve was non-critical (perhaps a shade too much so) and the simple wire ratchet fitted held settings firmly at all speeds.

To summarise, the Hurrikan is certainly one of the best and most interesting model engines yet seen from Germany. It is well made and delivers a peak performance which is only equalled by two other 1.5 c.c. engines in the world at the present time.

PowerWeight Ratio (as tested):

0.674 b.h.p./ lb.

Specific Output (as tested): 107 b.h.p. / litre.

From David Bintcliffe

Please find enclosed some photos of seaplanes flown at longham lakes..these include Proctor Antic...(flies well) Flair Short Crusader (not yet flown) Machi M 52 ..(not yet flown) Sea Cat by Berkley kits from the 1950s ..flies really well and flown a lot ..worn out several lipos over about a ten year period...Nieuport Schneider racer ,,,flies well if a little squirrely,,,,finally Deperdussin Racer ,,winner of first Schneider race in 1913..this one has only been fast taxied which highlighted lack of float volume up front and a need to graft in an extra 2 ins at the front of the floats..then we will see if it flies ? Except for the Antic these planes were mainly constructed by Ray Randall a very talented engineer from Ferndown who unfortunately died about 5 years ago.The Berkley kit for the SeaCat was bought from the brother of Peter Chinn the chap who used to do the many professional model engine tests


5


6


19
61


19
61

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Email
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Re Sticks and Tissue no 105 page 6

Hello James .

While looking through the last Sticks and Tissue I was pleased to see an article about the first International open class speed and team race held at Brighton in 1950 .
I knew that Dad had won this, but not seen any articles about it , and now I can fill in some more history about him.

In the speed scale is Phil Smith, who won this competion with a model of the Midget Mustang ,a 24“ scale speed / stunt class (A) powerd with an AMCO diesel manufactured by Ted Martin .
The trophy was a mantle clock donated by Arther Mullet , who owned a model shop in Brighton .
The model still exist, and is in original condition , allthough the tissue is somewhat cracked .
In the team race Phil also won this with Burt Foster Junior ,the Veron secratary.
They both traveled to the meting in Burts Austin Severn from Bournemouth which must have taken some time as no motorways existed in those days .
Phil also crashed a model of the Focke Wolfe 190a3 control line model while looping the loop around a flying Fortress four engined model .

Maybe you can use this in your next issue ?

Best regards

Colin Smith

1/3 ½ inch span control line stunt model for 1.5 c.i. engine (A.P.S. code F3)

SPACEBOUND

DESIGNED BY

M Constant

6'6

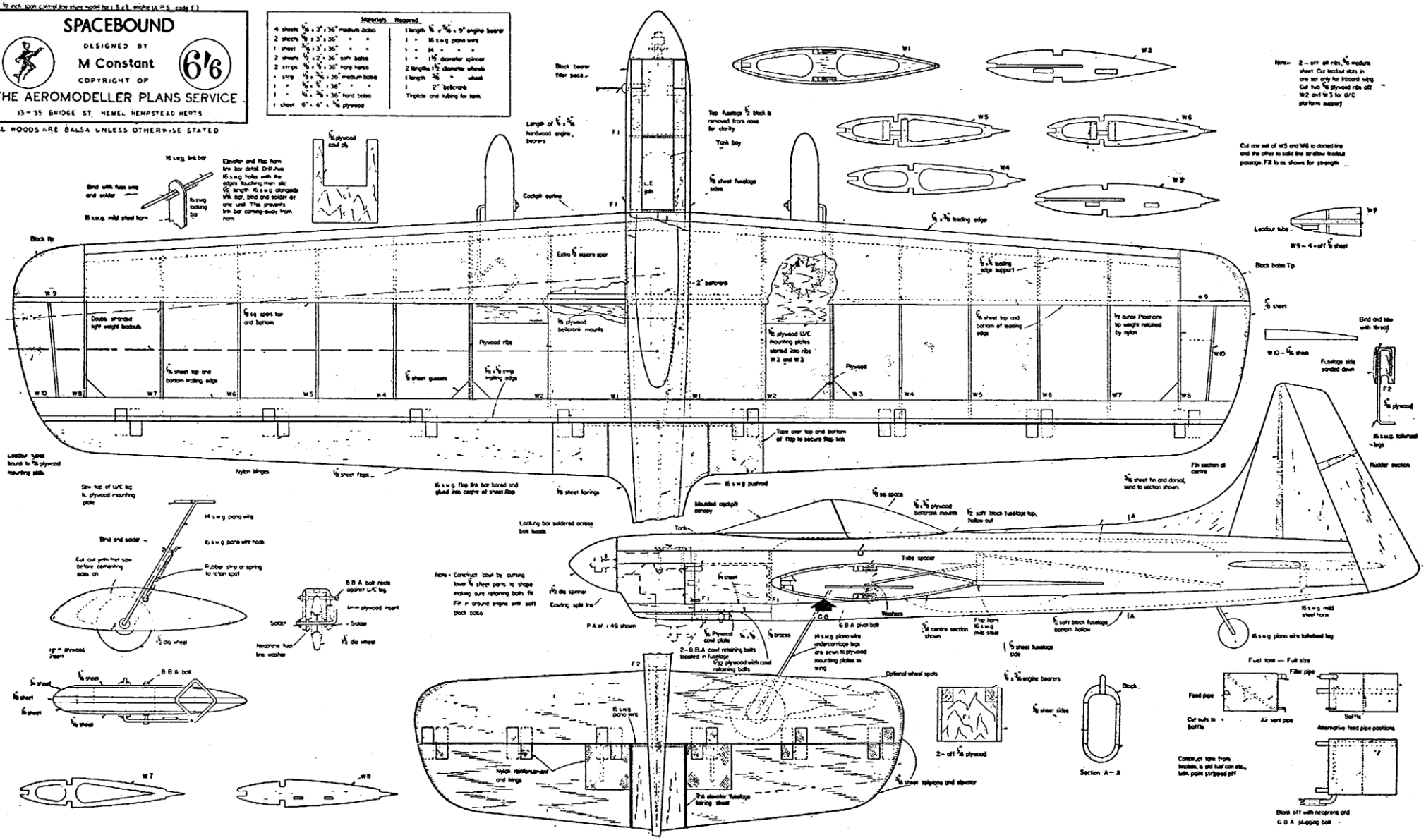
THE AEROMODELLER PLANS SERVICE

13–35 BRIDGE ST. HEMEL HEMPSTEAD HERTS

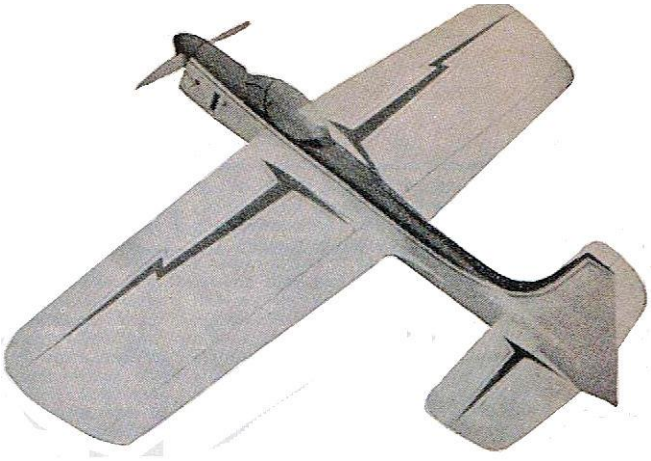
ALL WOODS ARE BALSA UNLESS OTHERWISE STATED

Materials Required

4 sheets 1/16 x 3" x 36" medium balsa	1 length 1/8 x 1/8 x 9" engine bearer
2 sheets 1/16 x 3" x 36" " "	1 " 16 s.w.g. piano wire
1 sheet 3/32 x 3" x 36" " "	1 " 14 " " "
2 sheets 1/32 x 2" x 36" soft balsa	1 " 1½" diameter spinner
2 strips 1/16 x 1/8" x 36" hard balsa	2 lengths 1½" diameter wheels
1 strip 1/16 x 3/16 x 36" medium balsa	1 length 3/16 " wheel
1 " 1/8 x 1/8 x 36" " "	1 2" bellcrank
1 " 1/4 x 3/16 x 36" hard balsa	Triplate and tubing for tank
1 sheet 6" x 6" x 1/16 plywood	



Spacebound A 33 1/2 in. wingspan control line stunter for 1.5cc. engines By M. Constant
From Aero Modeller August 1966



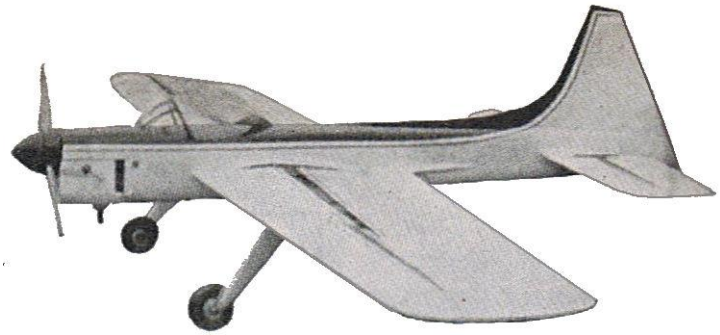
Developed through three models Spacebound hasits lines drawn from Spacehound the large Russian stunter in "Aeromodeller Plans Service". A prime design consideration was a light wing loading and for this reason its 33 1/2 in. span wing has 200 square inches of area for an all up weight of only 13 ounces with a P.A.W. 1.49cc engine. To obtain this sort of weight wing ribs must be lightened, and be very careful when selecting the wood, bearing in mind the function of each section of the model that the wood is required for. Flying performance leaves little to be desired with smoothness a notable feature, 'though it still performs "squares" and "triangles" with ease'. Of course, it has limitations, as being lightly loaded it is best not to fly in anything stronger than a moderate breeze, and secondly it was not designed as a crashproof brick, so make sure the ground does not come up and hit it, or something like that.

Any 1.5 cc engine should give a sprightly performance and the wheel spats are an optional extra for those who want a sleeker model. Note that the spats can have a detrimental effect on performance if they are bent in a landing and then flown without adjustment. In the air their large side area will cause the model to yaw in or out of the circle according to which way they are bent, this of course gets progressively worse as speed increases. Commence construction with the fuel tank. Cut from tinplate and solder the pipes as shown. Some engines may require FI to be further back so check this as the tank length may have to be changed. Cut both Fl's from 1/16 in. plywood, cut bearers to length, drill engine mounting bolt holes and Araldite tank, formers and bearers together as one unit. Cut all wing ribs, noting the reinforcements on W5 and W6 rib centres to clear the inside (left) wing leadouts. Drill sewing holes in plywood undercarriage mounting plates and cement balsa and plywood W2, W3 ribs on each side of it. Pin the lower 1/8 in. sq. spar to the plan, crack at centre pack up 1/8 in. at W8, then cement ribs WI1and W8 in position and add ¼ x 1/8 in. leading edge support followed by all other ribs and undercarriage mounting plate assembly. Next add upper trailing edge and top spar, remove from building board and insert the secondary spars between W2's, lower trailing edge sheet, leading edge braces at centre and 1/8 in. tip plates.

Carefully cement 1/8- in. plywood bellcrank mounts through ribs WI and along 1/8 in. sq. spars. Bend wing mounting end of undercarriage leg to shape, sew and cement to plywood mounting plate in wing, leaving the wheel axle ends unbent, so the leading edge sheeting only has to have a neat hole made in it. Install controls, spacing the bellcrank with fuel tubing for correct position. Assemble wing flaps with flap link to which a 16 s.w.g. horn is soldered (see sketch for locking bar soldering method), then add flaps to wing with tape hinges making sure the flap horn is aligned at neutral bellcrank position with equal up and down flap movement. Loop and solder leadouts to the belicrank thread through ribs and tip tubes bound to plywood plate which is in turn cemented to tip plate. Now cement ¼ x 3/8 in. leading edge strip in position and 1/8 in. trailing edge strip, W9, W10 and block tips. Add centre section, upper and lower leading edge 1/16 in. sheeting. Now the wing is completed cut the two 1/8 in. sheet fuselage sides with cut outs for the wing (allowing an extra slot for the flaps which is filled in afterwards) and tailplane and then slide them over the wing, i.e. over each tip to the position shown. Now insert the engine bearer, tank assembly and cement formers F1 to fuselage sides. Draw rear together, hold with clothes peg and fit F2 with tailwheel.

Sand tailplane parts to section. Solder elevator horn to link bar. Place link bar and horn in the elevators and secure with cement and bandage or tape making sure that the elevators are level with one another then slide through fuselage. Slide tail through fuselage slot then add the nylon or tape hinged elevators to the fixed portion. Solder the carefully measured pushrod from the flap horn to the elevator born making sure pushrod clears F2, it is most important that the elevators are neutral to the flaps so that each moves in unison through in opposite directions. Cement the tailplane and wing as fixtures.

Next add engine mounting bolts with piano wire locking strips soldered across the screw slots to prevent them turning. Rough shape the top and bottom fuselage blocks and hollow out the inside for lightness. Cement in place making sure the lower one clears the tail mount and the upper one, the engine bolts. Cement the forward fin sections together then roughly shape prior to cementing to the model.
The cowling section is constructed as follows, cement in, sheet below tank bay and Araldite 1/32 in.-plywood bolt retaining sheet in place with two bolts. Next slot the lower 1/4in. sheet to take 1/16 in. plywood and drill clearance holes for the two 8 B.A. nuts, then cut in two at the separation line. Add 1/4 in. side plates and a block above which will be hollowed out to clear engine, needle valve etc. Bend wheel axles solder wheels on, cement fuselage/flap fairings, tailplane fairing and fin in place. Sand the entire model smooth, add shaped rear end of rudder with some offset to retain line tension and smear some oil on the tape binges to prevent them stiffening up when the dope is applied. Give the whole structure two coats of sanding sealer, rubbing down between coats.



Cover the entire model with lightweight tissue, apply three coats of clear dope to the wings and two on fuselage and tailplane. Final finish was enamel on the prototype. eliminating the need for fuel proofer but do use it if a glow engine is to be installed.
Fly on 40 foot lines using 8 X 4 or 7 x 4 propeller and Spacebound should soon get you proficient at aerobatics.

A 28 oz. wingspan control combat model for 2·5 – 3·5 c.c. engines.

TURNCOAT

DESIGNED BY

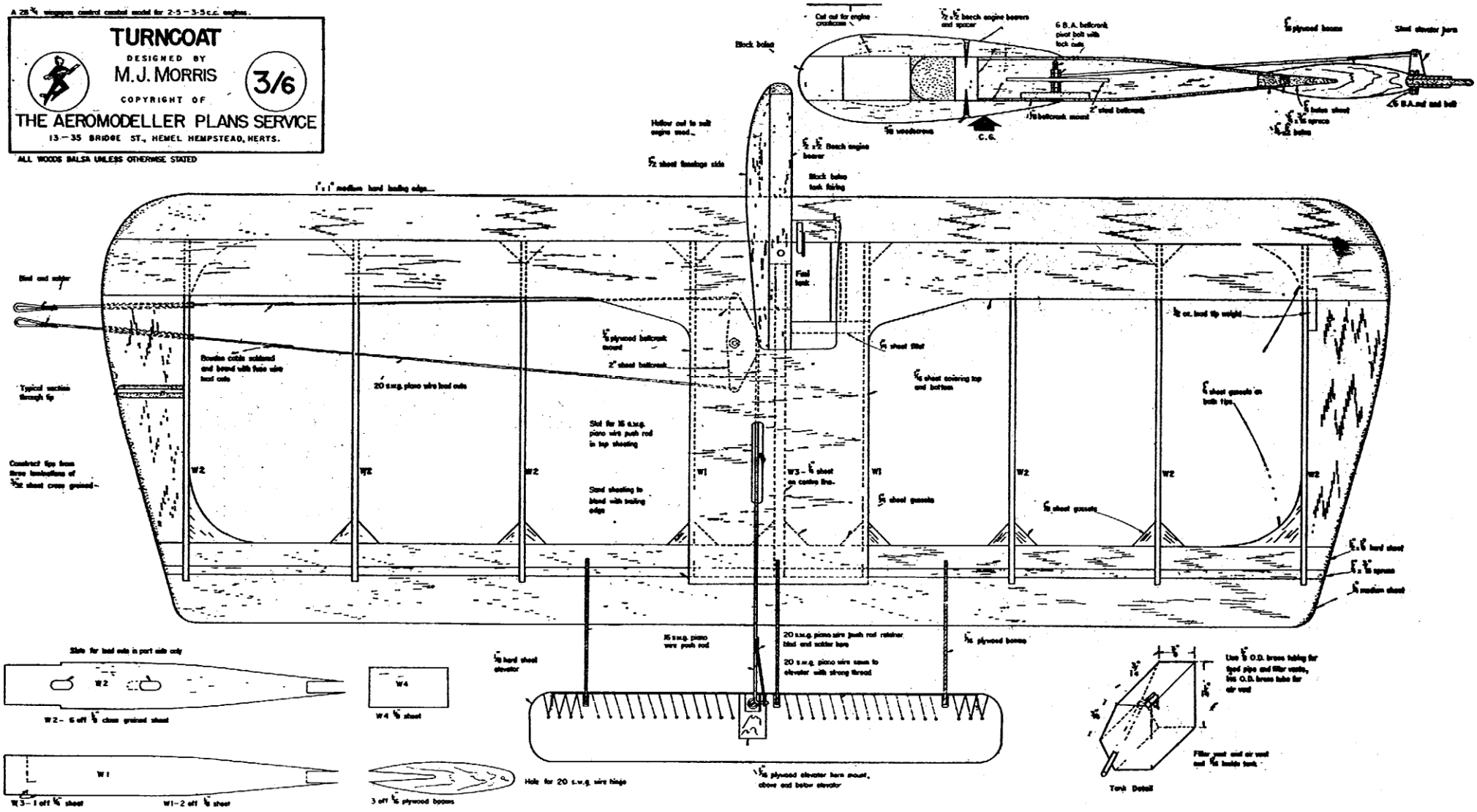
M. J. MORRIS

3/6

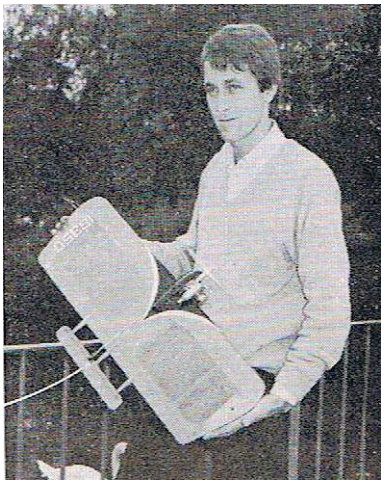
THE AEROMODELLER PLANS SERVICE

13 – 35 BRIDGE ST., HEMEL HEMPSTEAD, HERTS.

ALL WOODS BALSA UNLESS OTHERWISE STATED

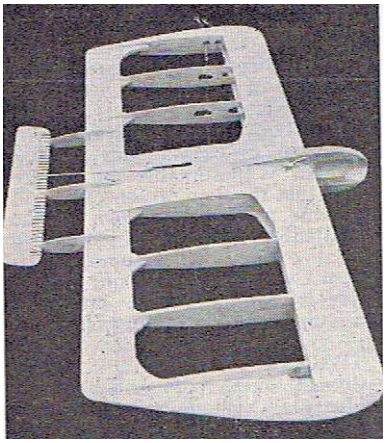


2.5 cc flying wing combat model 29" span. The latest in the flying wing treand by combat exponent M J "Moggs" Morris From Aero Modeller February 1967



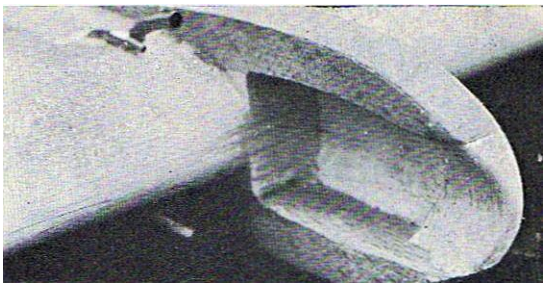
Most of "Turncoat's" features may be quite familiar to those aeromodellers who build and compete in the combat class of control line. They should be! as "Turncoat" has been developed from such designs as Razor Blade '64, September Warrior, Dominator, and Early Bird all established APS favourites. Taking all the best features from each of these models, a fast, manoeuvrable and virtually indestructible model has evolved. In the right hands it will prove to be a winner in the 1967 season. Having already won the South Midland Area Gala at Cranfield in prototype condition, flown by Mike Delaney of Northwood.

Construction



Commence construction by glueing together the trailing edge which Consists of ½ in. x ¼ in. hard balsa strip 1/4 in. x 3/16 in. spruce and soft 1/4 in. sheet, pin down to board and glue. Glue laminated tips together from soft 3/32in. sheet, cross the grains and remember to insert brass lead out tubes into inboard tip. Make 1/16 in. plywood rib template and cut ribs from medium close grained 1/8in. balsa sheet and one centre 1/4in. sheet rib, making holes for controls in the inboard ribs. Pin 1 in. square hard balsa leading edge to building board and cement all ribs to it except the centre rib. After sanding trailing edge to shape, slot and glue to ribs on board. Shape the 1/2in. x 1/2in. beech engine bearers, add spacer, glue and screw together. Remove framework from the building board and cement engine bearers over leading edge, add centre rib then allow to dry.

Cut out developed tank shape from tin plate and solder up with air vents and fuel feed pipes. Fix tank in position usng Araldite, riblet W4 and 1/4 in. sheet fillet. Cement on 1/16 in. bottom sheeting, and glue on laminated tips, adding 1/2 oz. of lead weight to out board tip Bind and solder Bowden cable extensions to 20 s.w.g. wire leadouts, solder to bellcrank. add 16 s.w.g. pushrod, bolting unit to 1/8in. plywood bellcrank mount, then glue into position. Add 1/8in. sheet and 1 in. sheet gussets, also cement top 1/2 in. sheeting in place. Double cement 1/2in. soft balsa sheet fuselage sides and nose block to engine bearers. Carve and sand fuselage to streamline shape. Drill engine mounting bolt holes. Round off leading edge and sand the framework smooth. Bind and solder loops on the end of lead out wires. Either bandage or fibre glass the engine pod wing joint area. Dope framework with one coat of clear dope, cover in nylon and apply three coats of dope. Cut 1/16 in. plywood booms, drill holes for the 20 s.w.g. wire hinge then cut 1/8 in. hard sheet elevator. Slide booms on to the binge wire, bend to shape and sew it on with carpet thread and cement well.



Cover elevator with nylon, add 1/16 in. plywood elevator horn mounts and elevator horn. Double cement booms to model and fuel proof. Connect up control system. Bolt in your 2.5 c.c.—3.5 c.c. engine! silencer unit and "Turncoat" is finished.

To make "Turncoat" fly fast, build light but strong aim for around 15 ozs. all-up weight, taking great care in choosing the right wood for the job.

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From Martyn Pressnell

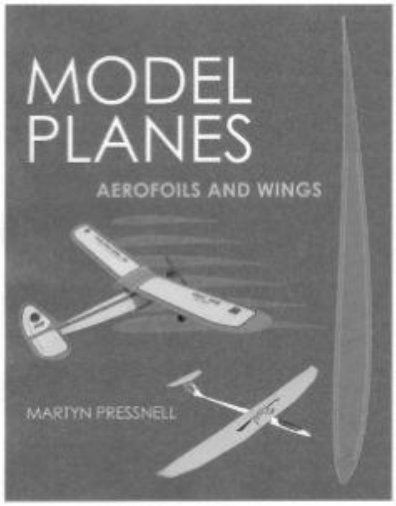
I have recently received this discounted offer from Robert Hale Ltd. that your members may like to use to purchase my new book 'Model Planes: Aerofoils and Wings'. This offers 25% off (normally £20.00) the price of the book. There is no additional postage cost except for overseas orders. It becomes generally available on 30 June. I also attach a colour copy of the cover.

The offer is available by going to www.halebooks.com and using the discount code 'wmodelplanes15'. Further information can be found at www.msp-plans.blogspot.com

Many thanks and kind regards, Martyn

MODEL PLANES

by Martyn Pressnell



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Martyn Pressnell has been an aircraft enthusiast since childhood, becoming an experienced model designer by the age of eighteen. On graduation, he joined Handley Page to train as a professional airframe structures engineer. He went on to work at what is now the University of Hertfordshire, becoming Group Head, Aerospace Engineering, in 1992. For a time he was a CAA-designated Chief Stress Engineer in the airship business. Now retired, Martyn is as busy as ever pursuing model aircraft technology and acting as a consultant in airframe structures to the Engineering Sciences Data Unit, providing information to the aerospace industry worldwide.

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(I've now finished reading the book and it is excellent. JP)

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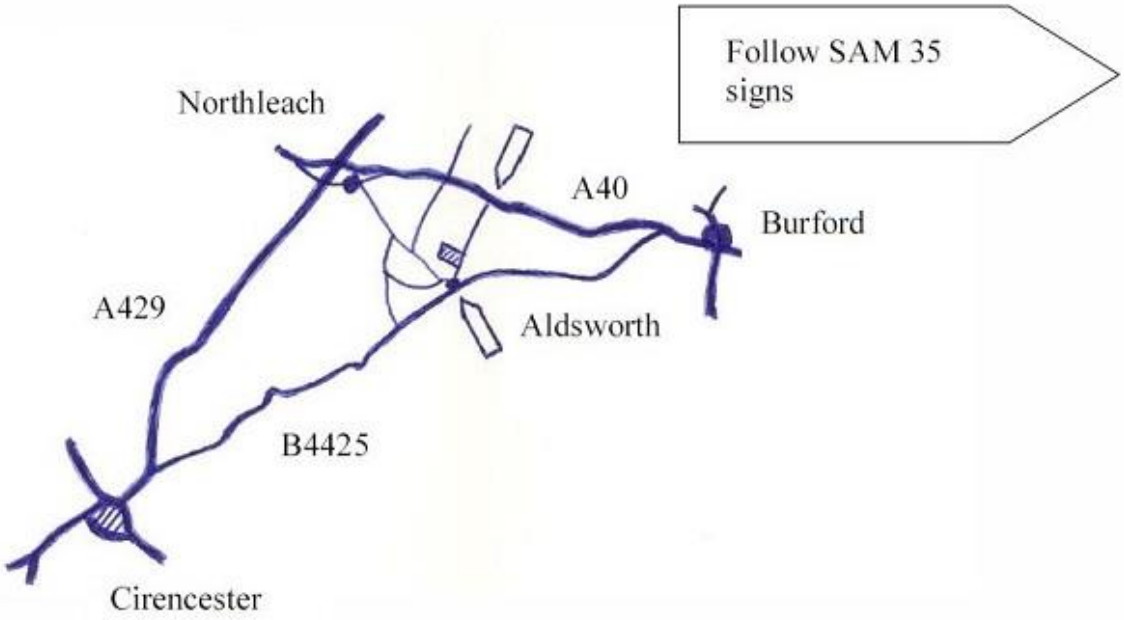

Belair

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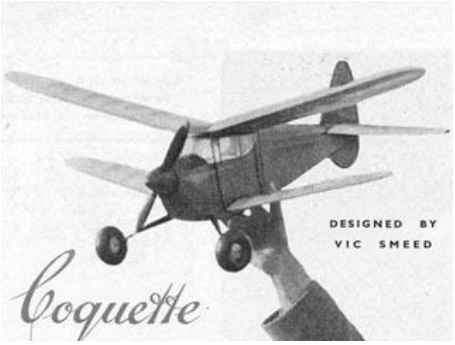

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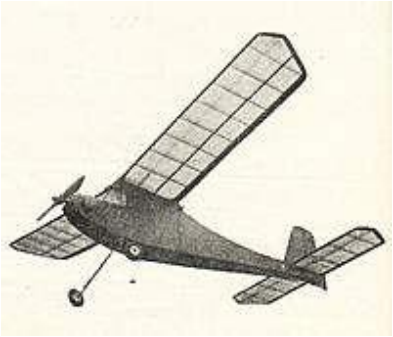

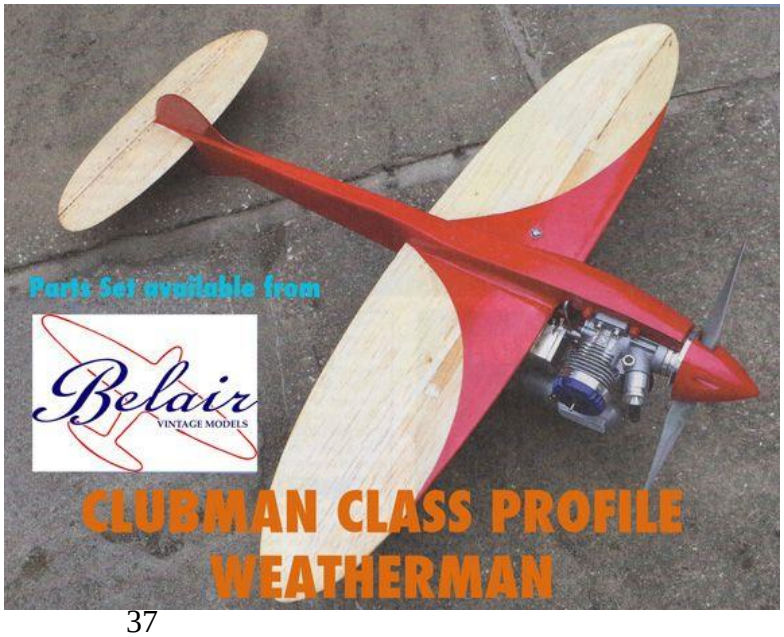

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