Hobbies WEEKLY

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# Patterns for a miniature non-flying model

# HAWKER TYPHOON

THE Hawker "Typhoon" fighter is—as the Luftwaffe knows by bitter experience in months of aerial engagements—a well-named, fast, formidable aircraft. It is fitted with a Napier Sabre engine, this developing something like 2,400 h.p. and giving the "Typhoon" a flying speed of over 400 m.p.h. Two 20 mm. Hespano guns are fitted at each side of the main wing, as shown by the model illustrated at Fig. 1.

The construction of the model is interesting and is greatly simplified by the full-size patterns provided on cover iv of this issue. The "Typhoon" will make another splendid addition to your collection of model aeroplanes. In designing the model, we have tried to give you most details; various views are presented so you can instantly see what to do, especially in the finishing.

### Shaping the Fuselage

The first part to prepare is the fuselage. It is built up from three layers of wood, the centre being ½in. thick, with the covering pieces ¼in. thick. When cut out, glue the latter to each side of the centre piece, then cramp up and allow the glue to set properly.

Care should be taken to ensure the slot for the "roots" of the main wings are in true. This can be done by inserting a scrap piece of wood in the space temporarily until the glue sets; a piece of wood 3ins. long by 1⅜ins. wide by ¼in. thick is required.

When ready for the shaping, pencil the top shape on the wood as shown at Fig. 2. Remove the waste with a penknife. The tail slot is then cut, this being about ⅜in. long by ¼in. wide. We show the propeller "boss" affixed to the fuselage pieces (indicated by dotted lines) to show the amount of curvature essential.

The rounding of the fuselage is the next procedure. The half sections at Fig. 3 will prove helpful in this direction. A sharp penknife, rasp, file and glasspaper—plus patience, will do much to obtain the correct shaping. The "lobe" beneath the engine is, we believe, a combined radiator and oil-cooler.

Patterns on Cover iv

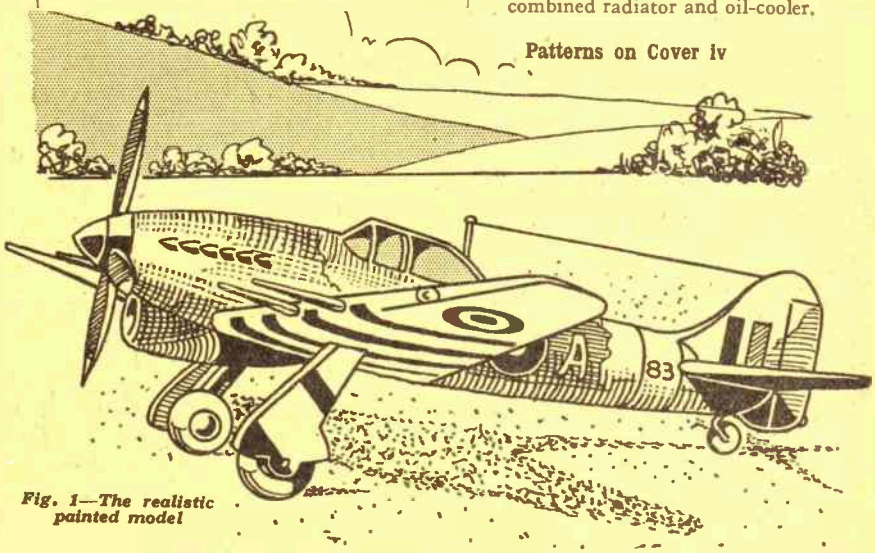

*Fig. 1—The realistic painted model*

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It is shaped something after the style of an engine nacelle, as you can see from the front view (Fig. 4) and bottom view (Fig. 5). The "opening" in the nose of it could be bored out slightly, but owing to the amount of risk involved, the opening could be suggested (in the finishing) by the use of black paint.

When shaping, take note of the grain directions and pare the wood accordingly. This will prevent splintering and bad cutting. Try to do most of the shaping with the penknife; the nooks and crannies are best dealt with by the edge on the rasp and file. Get the nose end quite true and flat, otherwise the propeller will rest against it crudely.

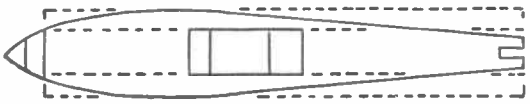
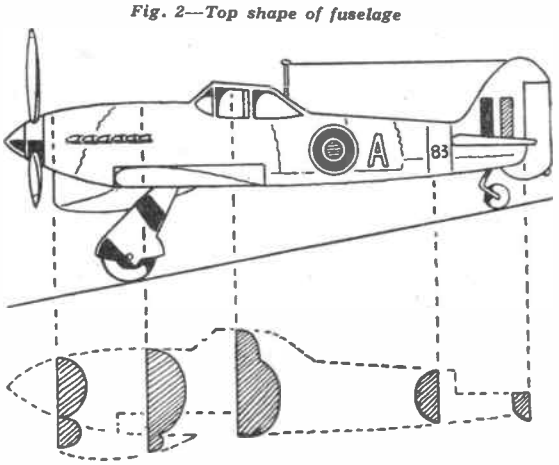


*Fig. 2—Top shape of fuselage*




*F.g. 3—Side elevation with section showing shape*

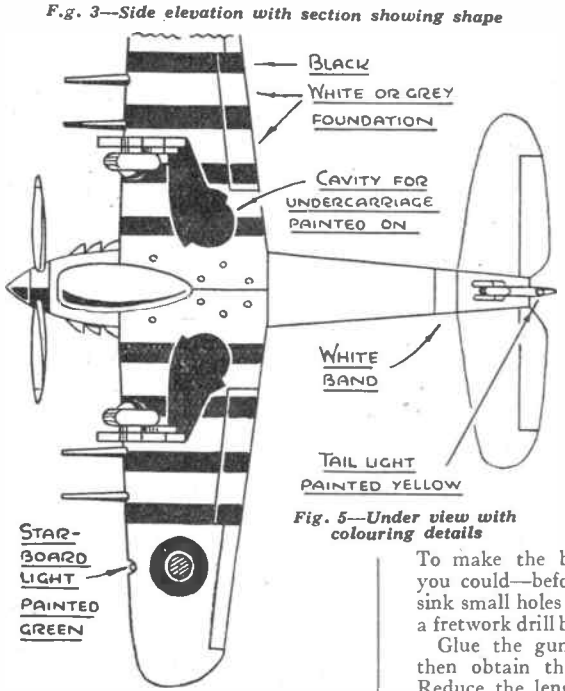



*Fig. 5—Under view with colouring details*

The main wings are cut from ¼in. wood to be right-sided and left-sided. The tips, at the underside, are bevelled (see pattern page) as shown prior to rounding over the edges in the usual streamline manner. However, we are forgetting the holes for the gun barrels; these are ⅛in. in diam. and are best bored first, the positions being indicated on the pattern page.

The gun holes need only be bored to a depth of ¼in. Centre the hole positions with the point of a sharp nail, then drill the holes (slowly and carefully) with a sharp ⅛in. drill. The guns, as shown by the diagrams, are straight with the wings.

The gun barrels themselves can be shaped from ⅛in. dowelling, leaving ¼in. untouched at one end for insertion into the wing holes. To make the barrels more realistic, you could—before shaping—countersink small holes at the front ends with a fretwork drill bit.

Glue the gun barrels in position, then obtain three large plain pins. Reduce the length to ⅜in. and drive the shanks into the navigation light spaces in the leading edge of the wings. The pin heads form the lamps; small roundhead nails could be used, incidentally. The third pin goes to the back end of the fin (see Fig. 3).

Having glued and pinned the main wings to the fuselage, as shown at Fig. 5, the tail and fin are cut from ⅛in. wood and shaped up. Glue the tail to the fuselage, then add the fin, this, by virture of its shape, holding the tail in place.

The wheel leg parts are, as shown by the front view at Fig. 4, cut from ⅛in. and 1/16in. thick wood, respectively. Glue the thinner leg portion to the covering piece. Insert a pin or fine panel through the wheel axle holes to draw the parts evenly together.

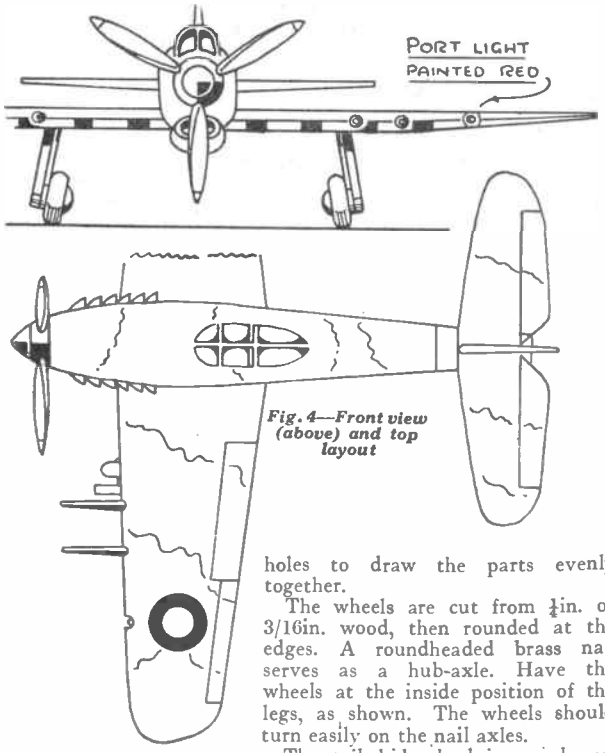



*Fig. 4—Front view (above) and top layout*

The wheels are cut from ¼in. or 3/16in. wood, then rounded at the edges. A roundheaded brass nail serves as a hub-axle. Have the wheels at the inside position of the legs, as shown. The wheels should turn easily on the nail axles.

The tail-skid wheel is merely an ⅛in. disc with rounded edges. It is affixed between a wire fork bent as depicted, the top ends being inserted into a suitable hole made in the rear end of the fuselage, at the underside.

### Making the Propeller

Special care must be taken in order to make the airscrew. Cut three blades from ⅛in. wood. Pare a small "twist" in them, the stems being rounded into small pegs. Three holes for the entry of these pegs, bored equidistantly, are made in the ¼in. hub piece prior to bevelling, as sectioned. So far as the spinner is concerned, this could be shaped on the end of a piece of ⅜in. dowel rod and then sawn off to length.

Glue the propeller blades to the hub. Twist them around slightly on it to give a stronger torque. A dead central hole is drilled in the hub for a pin. The underside of the spinner is countersunk in the centre so that, when glued on top of the hub, it will not interfere.

Attach the propeller hub to the nose of the fuselage with the pin. The hub should be free enough to revolve easily. The spinner is then



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adhered in position. Apply the glue so it encircles the pin-head countersunk hole and does not fill it, otherwise the glue would cause the airscrew to stick and turn around stiffly.

All that now remains is the aerial and the engine exhaust pieces. The latter are cut from ⅛in. wood. The edges could be rounded over a trifle, following which the "exhausts" are glued into the mortises provided in the fuselage.

The aerial mast is a plain pin. A fine strand of wire removed from a flexible electric cable wire serves as an aerial. A fine thread, black in colour, would also serve the purpose.

### Finishing Details

The best finishing medium is, perhaps, poster paint. Before applying any colour, however, the wood should be lightly damped with a rag, allowed, to dry, then be rubbed down smooth again. All markings shown, including the wriggly lines of the camouflage colours, should be drawn on in pencil.

It is not necessary to camouflage the underside of the work. Only the surface (as seen from the air) is touched. The camouflage colouring reaches down midway along the fuselage. The two colours to use are dark brown and dark green.

The targets on the main wings, at the surface, are blue circles with white centre spots. Those beneath are done in the conventional colours of red, white and blue.

The bottom, or underside, of the model is painted all over light grey, or white, or cream. In case you lack a variety of colours, the strips could be done black or dark blue. As you can see from Fig. 5, the apertures for the undercarriage are painted on.

The gun barrels can be grey or black. The propeller hub and blades are painted black, with white tips. The spinner is coated with silver paint; the blades could, by the way, be tipped with it. Suitable colours for the wheels are black or dark grey.

Regarding the windows of the pilot's cabin, the frames are suggested with black paint, the resultant "window" spaces being filled in with white paint. A neater effect may be obtained if the whole cabin is coloured white, then lined with black.

Always allow one colour to dry properly before applying a new colour on top. Poster paint is an easy, quick-drying medium to work with. Small pencil brushes should be used; in fact, one medium brush pencil would serve in applying the various colours if carefully washed and rinsed clean on each occasion.

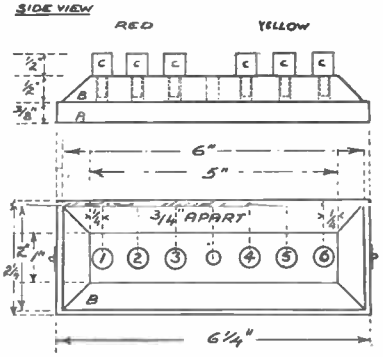
## A number of interesting games can be found with

# THE NOVEL SIX-PEG PUZZLE

HERE is a woodworker's version of the six-peg puzzle, which will make an interesting addition to your collection of wood puzzles.

There are several variations to the puzzle, but the main one is to change the positions of all the pegs (i.e. get the yellow pegs to the left side and the red to the right) by moves which consist of either moving a peg one hole to right or left, or jumping over one peg, and one only to right or left.

After doing the transferring once, further interest is brought in by seeing the least number of moves in which the change over can be made.

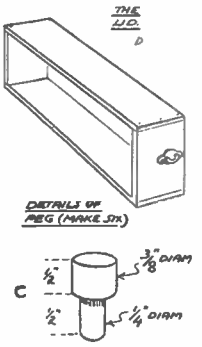



The numerals on the tops of the pegs are brought into play as another variation. The aim becomes to get the pegs changed over, but with the numbers reading the reverse way, that is 1 to 6 from the right hand side, as seen in the sketch.

Readers, will doubtless, be able to invent further conditions to be fulfilled, for themselves, thus giving the puzzle a large number of interesting solutions.

For the construction of the puzzle first make the base (A) from a rectangle of material 6¼ins. by 2¼ins. by ⅜in. and upon it secure the bevelled rectangle (B) which is 6ins. by 2ins. at its lower face, taken away to 5ins. by 1in. at the upper, thus making the sides a 45° slope. The piece is ⅛in. thick, and is held by six ⅝in. screw placed either side of the centre so as to avoid the peg holes.

Draw a centre line down the top of (B) and upon it mark positions ¼in. from either end, and then divide the intermediate distance into ¾in. lengths There should be six such lengths. At each ¾in. position carefully drill a hole with a suitable ¼in. bit, to the full depth of (B), seeing that the top edges are clean and that the holes are truly vertical, as they are to hold the pegs (C).




These can now be cut from short lengths of ⅜in. diameter dowelling. They are 1in. long and are the full diameter for half their length, but reduce to slightly under ¼in. diameter for the other half.

Cutting a line round the circumference at the half way position and pruning down with a knife is the best way to make these pegs, finally glass-papering to make them fit the hole nicely. Six pegs are required.

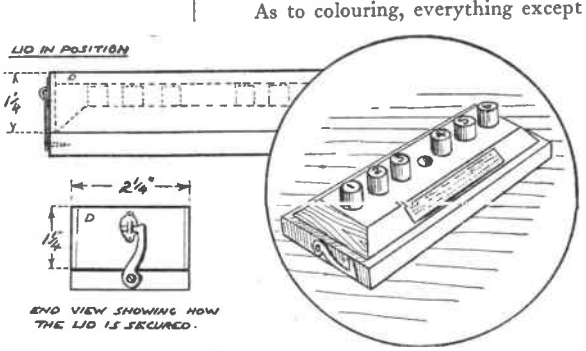
Next comes the lid (D). This fits over the pegs and bevelled pieces (B), and has the effect of making a neat job of the puzzle and also prevents the pegs from getting lost.

It is made very simply from a rectangle of 6ins. by 2in. material, ¼in. thick, with sides (6¼ins. by 1¼ins.) and ends (2ins. by 1¼ins.) of ⅛in. material, the sides fitting round the top, and being held by light sprigs or screws and the ends fitting inside the projecting sides.

To hold in position hook fasteners are fitted at both ends as shown.

As to colouring, everything except the pegs however are painted in two bright and contrasting colours, as red and yellow. The tops are first painted white and then are numbered with a fine brush as indicated. All is now complete except for a neat strip of card glued to the front edge of (B) telling players what they must do. This is quite optional however.

The whole thing will entertain and amuse for hours in use.



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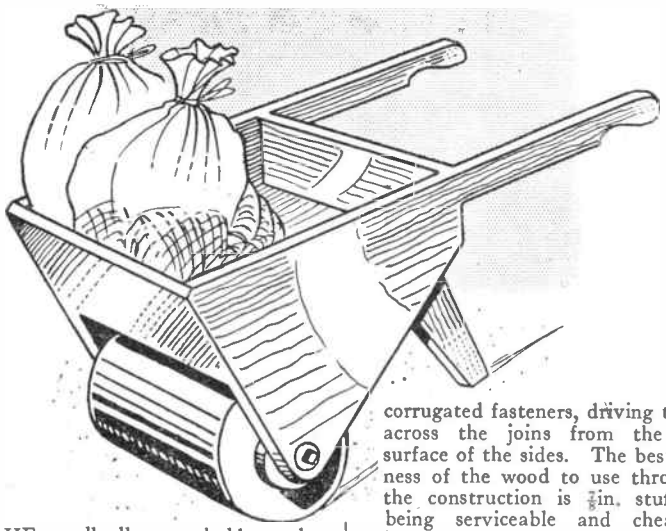
# A combination of two useful tools in this novel
# GARDEN ROLLER BARROW



THE small allotment holder and gardner will appreciate the advantages of the combined roller and barrow shown herewith, Fig. 1.

When used as a barrow only, the article is light. Owing to the fact that the barrow trundles on a cylindrical wheel, no deep furrows or tracks will be cut in soft soil.

When used as a roller, the body of the work is loaded with heavy soil, or alternatively, small sacks of sand. which can be lifted out and stored away in the tool shed for further use.

### The Barrow Body Sides

The first thing to construct is the barrow body. It will be seen, from the side elevation at Fig. 2, that the sides are connected with the shafts. This is more clearly shown at Fig. 3, as indicated by the dotted lines.

You will notice how the side shape is made up from small lengths of narrow wood. These small pieces are first glued together and then, having straightened the top edge with a try-plane, the shaft pieces are dowelled to same.

You may dowel the side pieces together to ensure strength, although there is a good deal of strength in a good rub-joint. Also, one could use corrugated fasteners, driving these in across the joins from the inside surface of the sides. The best thickness of the wood to use throughout the construction is ⅞in. stuff, deal being serviceable and cheap. If, however, you use glass crate laths for the shafts, the sides should be built up from material the same thickness, i.e., box wood about ¾in. thick.

Having glued the side pieces and shafts together as shown, carefully pencil out the shape, working from the top centre of the central 6in. wide board. The 4ft. scale provided will prove helpful in obtaining certain measurements not stated.

Before cutting to shape with a bow-saw and a panel saw, the roller spindle holes should be bored, these being ⅜in. When cut to shape, the work is cleaned over on both sides with a smoothing plane and the shaft handles glasspapered.

### Body Construction

The bottom and end pieces are now prepared to length and width. To obtain the true widths and angles, the ends of the three boards should be marked out on the sides (at the inside) of the body shapes as shown by the dotted lines at Fig. 2.

The bottom pieces measure 16¼ins. long by about 20ins. or so wide. It can, therefore, be built up from four 5in. wide boards 16¼ins. long, dowelling them together. The front end piece is about 11ins. wide by 16¼ins. long, while the rear end piece is about 4½ins. wide by the same length.

To assemble, attach the end pieces between the sides flush at the edges. A suitable angle, it will be observed, needs to be planed on the lower edge of the rear end piece so the bottom piece, which is then fitted, rests against it neatly.

Use hot glue and 2in. long oval nails in assembling the parts together. Screws could be used, these ensuring much greater strength, but if you prefer to use nails, these can be driven in dovetail fashion. To give additional strength to the body structure, angle corner blocks could be adhered to the four corners.

### The Leg Rests

At this juncture the legs could be cut out and fixed to the work. To do so, refer to the constructional view given at Fig. 5. It will be seen that the legs are checked to fit snugly against the barrow sides.

The shape and measurements of leg A, is provided. The other leg, B, is cut the same, but is checked in an opposite manner. Glue and screw the legs (the screwing can be done from the outside, by the way) against the work in the position shown, then cut out a couple of knee supports to the shape and size provided and drill holes in these for screwing to the legs and barrow bottom.

### Making the Roller

The making of the roller cylinder is tricky, yet simple. First of all, you cut out three 8¾in. diam. discs from ⅞in. wood and bore holes in their centres for a 13¼in. long by 1¼in. diam. spindle of wood, a piece of curtain pole serving.

Glue the disc on the spindle flush at the ends, with the third one in the centre. You now need several laths of wood about 1¼in. wide by 13¼ins. long. The edges of these are bevelled slightly, following which they are glued and nailed across the three discs truly and neatly (see the constructional views at Figs. 2 and 4).

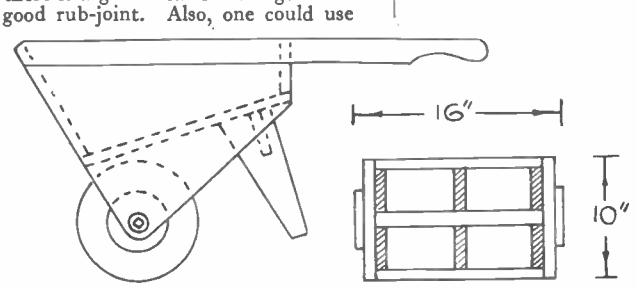



*Fig. 2—Side view, with section of roller portion*

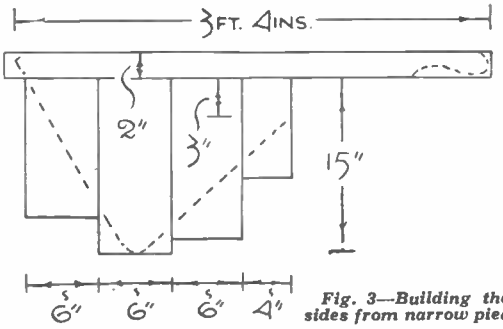



*Fig. 3—Building the sides from narrow pieces*



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Having built up the cylinder with the laths, make the end cover discs. The diameter is 10ins. or thereabouts, while the thickness should be $\frac{7}{8}$in. Glue and nail them to the ends of the cylinder, then attach the smaller discs, these being cut from $\frac{1}{2}$in. thick wood.

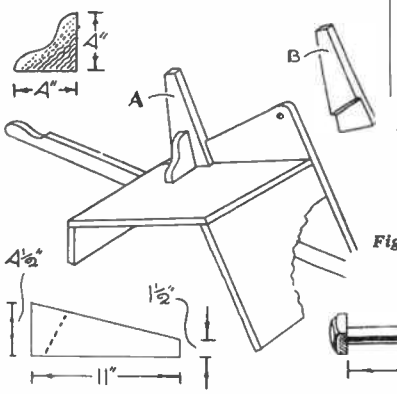


*Fig. 5—Details how body is built*

Be sure to have the smaller discs, perfectly centred at the ends, for it is on the trueness of these that the pivot centre of the roller depends. This centre will be already marked by the compasses, so when the discs are attached, bore a $\frac{1}{4}$in. hole about $1\frac{3}{4}$in. deep at the roller ends and complete the work by carefully "rounding" the joins of the laths to the same curvature as the circumference of the cover discs.

A strip of roofing felt, or lino material, $15\frac{1}{2}$in. wide is glued and tacked around the roller, trimming in flush at the ends. A strip of tin could be used, of course, but such is hard to get, unless you have an old oil drum that could be easily utilized.

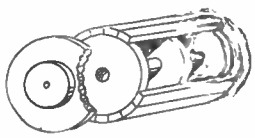

*Fig. 4—Construction of the roller*

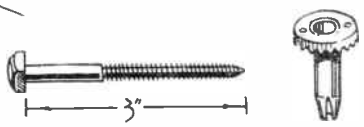


*Fig. 6—Type of screw and caster used*

The roller is pivoted between the barrow body "lugs" by means of 3in. long by $\frac{1}{4}$in. thick square-headed coach screws, one of which is shown at Fig. 6. However, as these screws revolve with the roller, it is advisable to reinforce the pivot holes in the barrow sides in some way.

### The Finishing Details

The best plan is to obtain two pull out caster sockets (detailed at Fig. 6) and cut the split ends off so the sockets measure 1in. overall. The sockets are driven into the pivot holes so the serrated edge bites deeply into the wood.

Holes are provided in the face end of the sockets for a couple of nails, these being driven through to prevent the sockets working loose. When affixed, place the roller between the pivot lugs and attach by means of the coach screws.

The work, now complete, should be given a coat of green enamel paint the inside of the body and roller ends being done a brick-red colour. Apply a good lubricating oil to the roller bearings.

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## For comfort's sake provide the clothes bath with

# A WASHING STAND

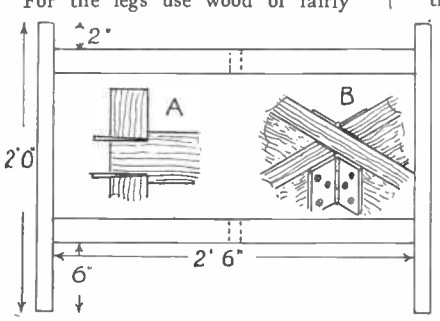
AN improved form of washing stand is shown, somewhat superior to the old-fashioned kind, being more stable. With this stand there is no fear of the bath tilting over and making a mess, not to mention spoiling a day's washing.

It is quite easy to make being just a plain carpentry job of work. It folds up after use and occupies little space, an advantage when room is limited.

### For General Size

The dimensions given will be right for the average sized zinc bath used for washing the family linen, but it is wise to measure the bath first if it is of large size as the length of the rails can be easily increased if thought necessary. Measure the bath across diagonally, not from handle to handle.

For the legs use wood of fairly stout substance, say $1\frac{1}{2}$ins. square. The rails can be cut from 1in. by 2in. wood or thereabouts. The length given in the diagram does not, of course, include the tenon.

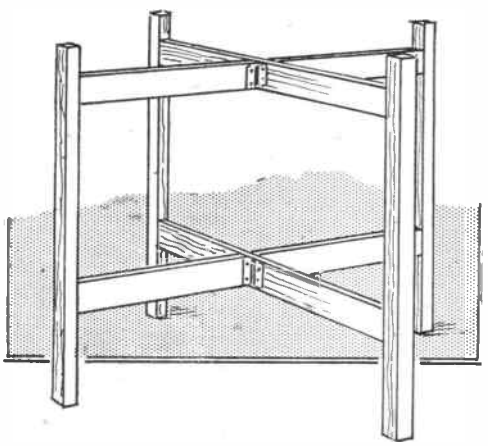



The rails are tenoned into the legs the joints being glued and wedged, as shown at A. The joints are quite easy to make, the mortises being cut to fit the tenons first, as in usual practice, making a good fit. The mortises are then enlarged lengthwise, $\frac{1}{4}$in. by a sloping cut at each end.

This will leave a wedge-shaped gap each end of the tenon, when the latter is in its place. Cut thin wood wedges to fit these gaps, then glue the tenons in, dip the wedges in glue and tap home with a mallet. When the glue is hard saw off any surplus wedge, or tenon, sticking out.

Two of the frames shown in the diagram are made. In the centre of them square two lines across, as shown by the dotted lines, 1in. apart or whatever the thickness is of the wood used for the rails. Square the lines a cross both sides.

One frame only is sawn across on these lines, thus dividing it into two halves, less of course, the 1in. wide waste bit sawn out. Hinge these halves to opposite sides of the whole frame, as at B, so when opened out the hinged halves of the frame will be in line. Use 2in. iron back flap hinges for the job.



### Hinge Places

Note that the cut ends of the rails are hinged to touch the left side of the double cross lines. Not at the centre, else they will not be in line when swung out.

The matter is not of importance, but the results look neater and more workmanlike. Now clean up the stand.

The work can be left plain, most of such articles are, but there is no objection to a coat of paint if a more finished job is preferred.



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# Some interesting information on sails and lights in SHIPS AND SHIPPING

SHIP model makers and others interested in our seagoing vessels should acquire information regarding sails, navigation lights, etc. Such matters make a very interesting study.

Talking, firstly of sails, although it is a rare sight indeed these days to see a full-rigged ship we all must wonder how these grand ships were handled. Each and every sail had its particular place and name, and where it is said that many of the old wooden ships had as many as twenty-seven or more sails, a truly wonderful state of efficiency must have prevailed then to handle such power.

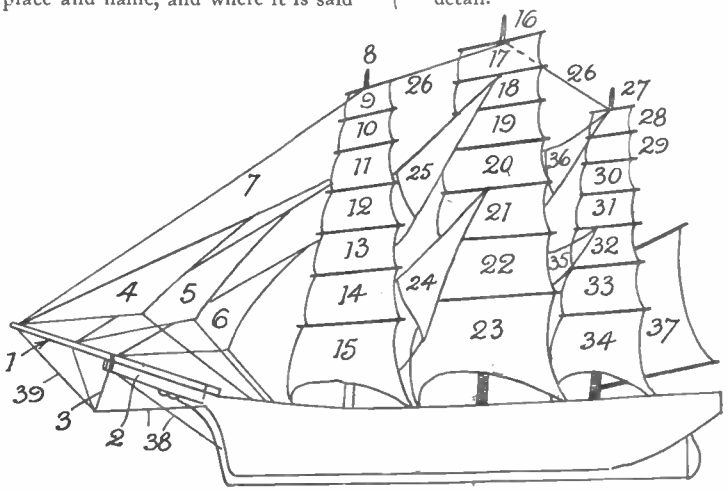


*Fig. 1—A full-rigged ship with sails and lines in place*

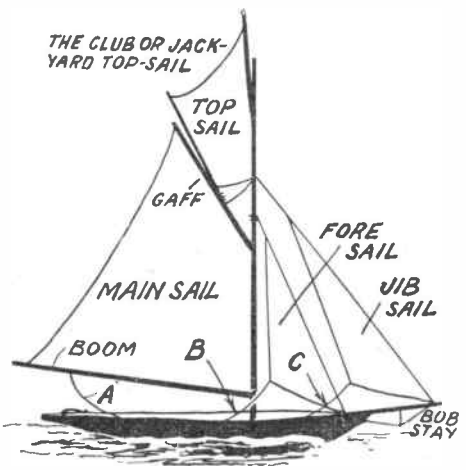


*Fig. 2—A type of popular yacht with names*

### Names of Sails

For sake of interest we give an illustration (Fig. 1) of a typical old-time sailing ship with all sails set. Each is given a number and in table form below the names of all the sails and some of the spars at the peak of the ship.

1. Jib-boom. 2. Bowsprit. 3. Dolphin-striker. 4. Flying jib. 5. Jib. 6. Fore-staysail. 7. Bobstay. 8. Foremast. 9. Fore-skysail. 10. Fore royal. 11. Upper fore-topgallant sail. 12. Lower fore-topgallant sail. 13. Upper fore-topsail. 14. Lower fore-topsail. 15. Foresail. 16. Main mast. 17. Main skysail. 18. Main royal. 19. Upper main topgallant sail. 20. Lower main topgallant sail. 21. Upper main topsail. 22. Lower main topsail. 23. Mainsail. 24. Stay-sail. 25. Upper staysail. 26. Braces. 27. Mizen mast. 28. Mizen skysail. 29. Mizen royal. 30. Upper mizen topgallant sail. 31. Lower mizen topgallant sail. 32. Upper mizen. topsail. 33. Lower mizentopsail. 34. Crossjack. 35. Mizen topmast staysail. 36. Mizen topgallant staysail. 37. Spanker or driver. 38. Bobstay. 39. Flying martingale.

The standing rigging of a sailing ship includes all those ropes and ladders, the latter being more properly termed the shrouds, which form the permanent braces to the masts. Running rigging comprises the ropes and braces which haul the sails into their proper wind positions. All have their own names but space will not permit here of giving each in detail.

Now we come to the racing yacht. It may be of interest to tell here the names of the sails, etc. of this type of boat. In Fig. 2, therefore, we give the side view of a yacht with names printed on.

One little thing worthy of note is that the "sheet" is not the sail but the rope which controls the angle at which the sail is set.

In Fig. 2, A, B and C are the sheets, A is the main sheet, B is the foresheet and C the jib sheet. Much could be said regarding the full use of the sails for racing but space will not permit.

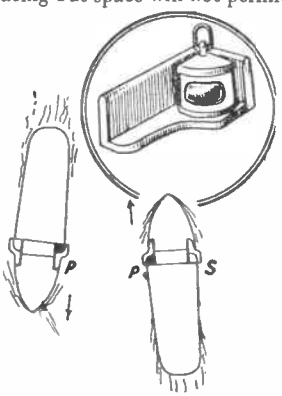


*Fig. 3—Explaining riding lights*

Another interesting phase of the sea going ship, is that of lighting at night. All ships are normally compelled to carry lights and certain rules and regulations governing these lights are enforced in peace time by the Board of Trade.

First it should be known and memorised which is port and which is the star board of a ship. Standing on the deck of a ship and looking forward (pronounced "forrard" in sea-going language) with the bow immediately in front, the starboard is on your right hand and the port on the left A good way to remember it correctly is to say "We have *left* port and gone to sea."

### Remember Port

Certain parts of the ship connected with the control bridge are painted green, while others are painted red. As port wine is red, so should it be simple to know the *port* side of the ship.

There are always two important light fittings on a ship known as side lights. These are usually at the extreme side of the bridge—port light, red; starboard light, green. Each lamp must shine only ahead and from the side the latter known as "abeam." They must not be visible from behind—or "astern" as the sailer knows it.

A typical side light is shown in our illustration in the circle at Fig. 3. It will at once be apparent from this that the light can only be seen at right angles to the ship's side.

In addition to the side lights, steamers always have a light at the fore mast-head, and sometimes one on the rear mast, the latter several feet above the forward mast light.

(*Continued foot of opposite page*)



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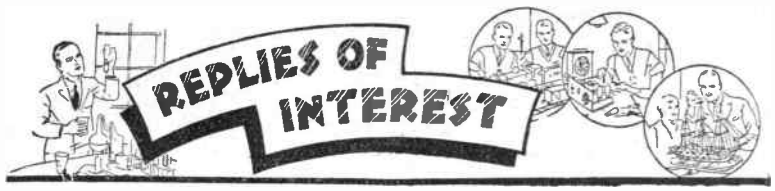


## Cabins and Turrets

*PLEASE tell me a way of making cabins and gun turrets. (D.H.L.—York).*

FOR very small gun turrets you could use a glass bulb such as provided for pocket flashlamp batteries. A transparent material like Cellophane or celluloid could also be used if the model is large enough. On miniatures, however, it is best just to paint the cabin and turrets on. There is, of course, modelling material such as Plasticine or plastic wood, or even Pyruma cement which can be shaped up as required and then hardens off to set solid.

## Oiling a Stone

*HAVING bought a new Carborundum sharpening stone, when I put oil on to sharpen a tool it dries away very quickly. Please can you tell me how to remedy it? (M.O.—Skewen).*

THERE is nothing unusual about the action of your carborundum stone. To keep it "in cut" you must constantly keep it wet with oil. You can make it cut more slowly by coating it with vaseline, or if it becomes too clogged with grease or oil, you can clean it by immersing in paraffin. Carborundum stone is made and intended to be used with oil, although it speedily becomes absorbed.

## Imitation Parchment Paper

*COULD you let me know the method of preparing imitation parchment from ordinary writing or brown paper? (F.V.W.—Fallowfield).*

THERE is no practicable way open to the amateur at the present time, of converting ordinary paper to parchment paper. There are, however, several alternatives suitable for the sails of models of old-time ships.

The ordinary thin, slightly brown paper used in toilet rolls answers very well if first cut to shape, then painted with light brown stripes to represent the "cloths" or separate pieces of the sail, and any other designs added in colour.

The sails are then dipped into a thin starch solution, fixed in place while damp and gently "blown" on to press the sails into a nicely curved shape, which they will retain when dry. Another method is to soak the paper in linseed oil, hang it up to dry for several days, then cut to shape and paint with oil colour paint.

## Shrinking a Rod

*PLEASE tell me how to shrink wood (kind unknown) as I have a fishing rod with a wooden handle which has swelled with the water. (M.G.—Mealsgate).*

YOU can shrink the handle of your fishing rod by first slightly wetting it and then rolling it backwards and forwards on a hard surface while pressing on the rolling handle with a fairly hot "flat" iron. Finish off the surface with fine glass-paper.

## Can I Take Photographs?

*WHAT is the position of the amateur photographer now? Can I use my camera when I get any spools? (C.W.F. Newcastle.)*

THE war restrictions do not say you shall not use your camera altogether. The Order issued in September, 1939, however, mentions many things you may not photograph —such as shipping, aerodromes, aircraft camps, military objects, electricity works, bombed areas, etc. but does not prevent your taking ordinary pictures. You can still use your camera for friendly subjects, but it is not advisable to take photographs anywhere near camps, or dromes or even of your local Home Guard on parade.

## Who Hit the Drogue?

*IS the drogue towed by an aeroplane for target practice very large, and how do they know who has hit it? (J.D. Chester).*

THE drogues for "live shooting" are usually about 20ft. long with a mouth of 4ft. diameter tapering to 2ft. at the rear. Ammunition used in the firing is marked wth different colours so the holes cut by the bullet or shell show which gun did the firing.

# Notes about Timekeepers

AS we must, of necessity, take extra special care of our wrist-watches and pocket watches these days, make a habit of winding them in the morning. That is the best—and safest—time. The spring, on account of the temperature, is not so liable to snap.

* * *

*TO keep dust and dirt from creeping into the works of a pocket watch, snip a small hole in the corner of the pocket lining in which the watch is always kept, usually a waist-coat pocket. This will allow dust and fluff to escape and there is no real danger of the hole becoming bigger so that the watch might fall through.*

* * *

THE first watches made were really miniature clocks and were intended for ships. It was not until early in the sixteenth century that there was a development in clock-watches. These were an oval shape and were known as "Nuremberg eggs." They were invented by one Peter Henlein of Nuremberg, who used a coiled spring as a source of energy.

* * *

*THE watches at first had just an hour hand, all moving parts being made from iron and held together by means of pins and rivets. It had many disadvantages, many of which were solved, in 1525, by a Swiss mechanic called Jacob Zech, a native of Prague. His watch became the fore-runner of the present-day watch.*

* * *

SPEAKING of timepieces, each of the four dials of Big Ben is 22ft. 6ins. in diameter—a total of almost 1,600 sq. ft. All this has to be kept clean and to do so, the hands are removed. Many people are apt to think that the great weight of the hands, on the upward grade, is bound to slow up the mechanism, with the opposite effect on the downward grade. Actually, the weight of the hands is, at the inside, counter-balanced by weights fixed on the hand spindles.

* * *

*LONDON'S famous big clock is driven by weights of immense size, but it is indirectly electrically energized, a motor being employed to reset the weights. Big Ben was built in 1854 and has remained a good, accurate time-keeper.*

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**Ships**—(*Continued from previous page*)

So, when a steamer is approaching, a red and a green light is visible and between them high up two white lights.

There are also rules of the road at sea. For instance, when ships pass each other the same colour must show on each ship. Looking at Fig. 3 again this is simply illustrated. So then it may be remembered "Green to green, red to red perfect safety, go ahead."

If two steamers are approaching each other, one of them must make room for the other to pass in safety or a collison will follow. Each ship must turn to starboard. The rule thus to be remembered is "When both lights you see ahead, turn to starboard—show your red." Many are the regulations and rules of the sea, and there are danger lights for sand-banks such as lightships, etc. which give flashing lights at intervals.



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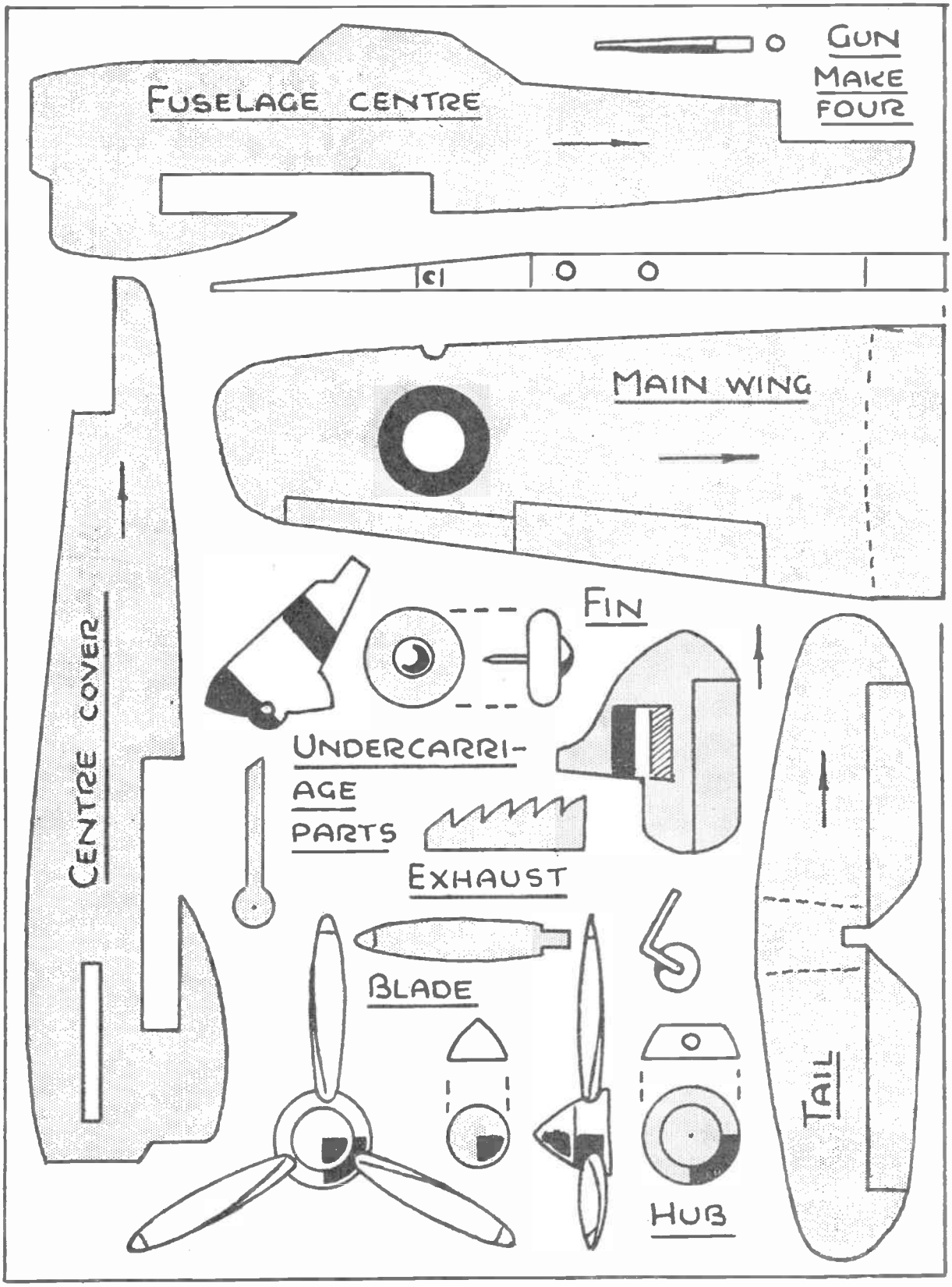
# Hawker Typhoon Model Patterns—See page 145

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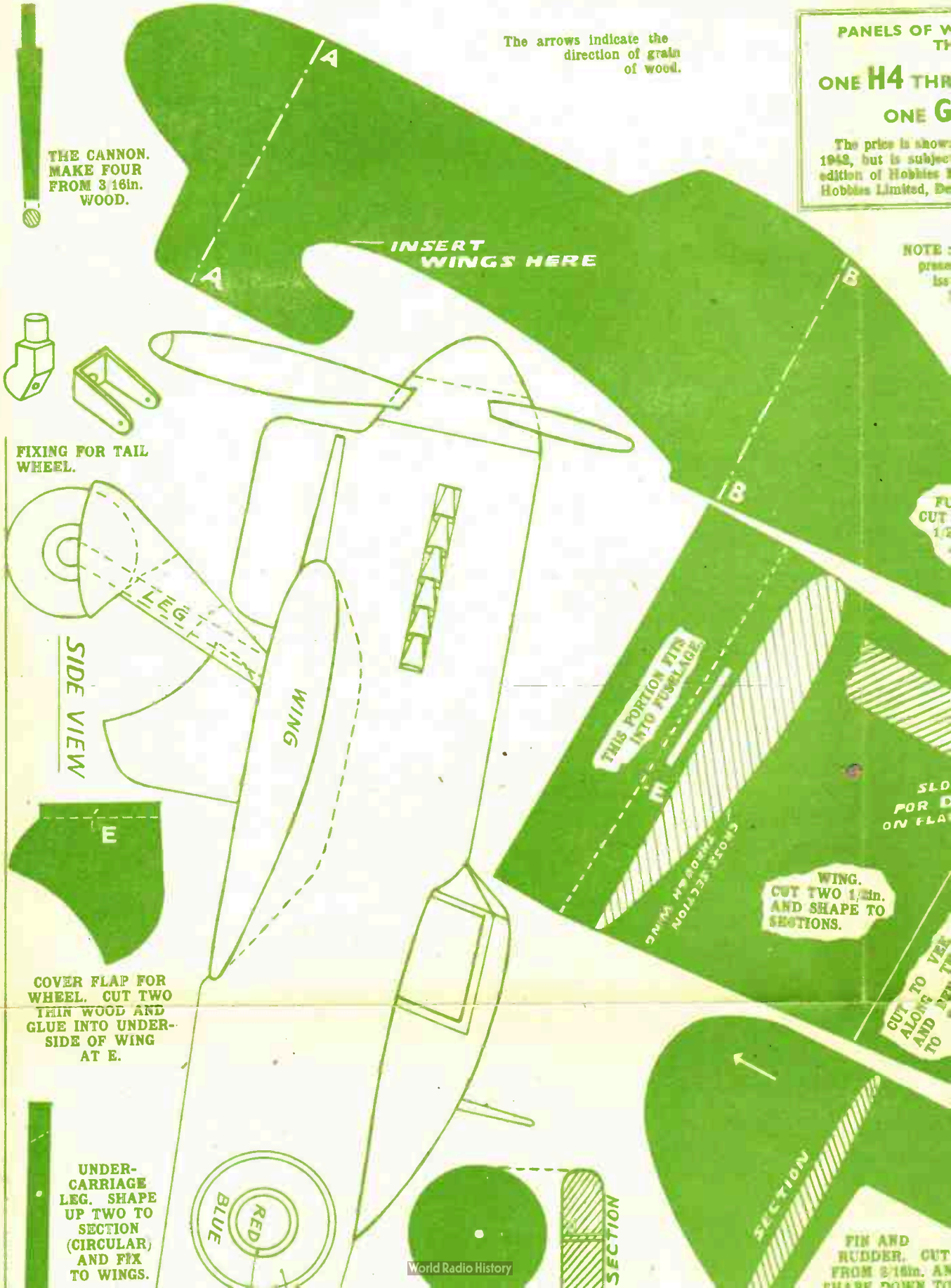

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PANELS OF WOOD REQUIRED FOR THIS DESIGN

ONE H4 THREE MD8 ONE ND8
ONE G3 ONE PPM

The price is shown in Hobbies Weekly, Sept. 15th, 1943, but is subject to revision. See the current edition of Hobbies Handbook, or write for price to Hobbies Limited, Dereham, Norfolk.

Hobbies DESIGN

No. 2500 15.9.43

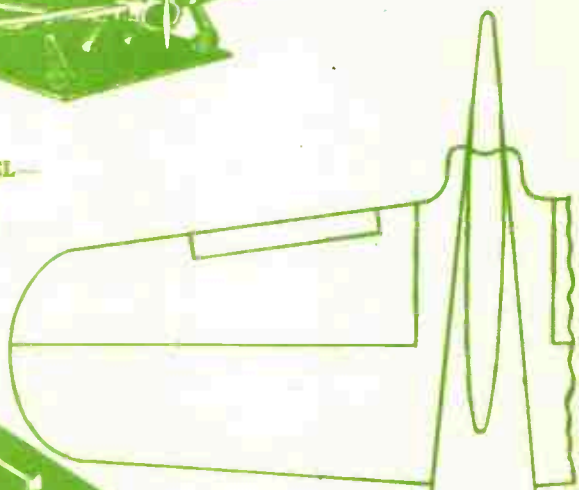
SUPPLEMENT TO HOBBIES No. 2500.

# MODEL OF THE HAWKER SINGLE-SEAT FIGHTER TYPHOON

SPAN 41ft. 7ins., LENGTH 31ft. 11ins. SCALE 3/8in.=1 FOOT.

NOTE :—This design sheet is only presented free with the current issue of Hobbies and not with back numbers. Further copies may be obtained.

SIZE OF MODEL—
SPAN 15½ins.
LENGTH 12ins.



FUSELAGE. CUT THREE PIECES 1/2in. TO THE OUTLINE AND GLUE TOGETHER AND AFTERWARDS SHAPE TO SECTIONS A, B AND C.

SLOT FOR D ON FLAP

WING. CUT TWO 1/2in. AND SHAPE TO SECTIONS.

CUT TO VEE SHAPE ALONG THIS LINE AND BEND UPWARDS TO GET DIHEDRAL ANGLE

LONGITUDINAL SECTION THROUGH WING

UNDERCARRIAGE FLAP. CUT TWO THIN WOOD AND FIX TO LEGS.

FIN AND RUDDER CUT

ENGINE EXH... CUT

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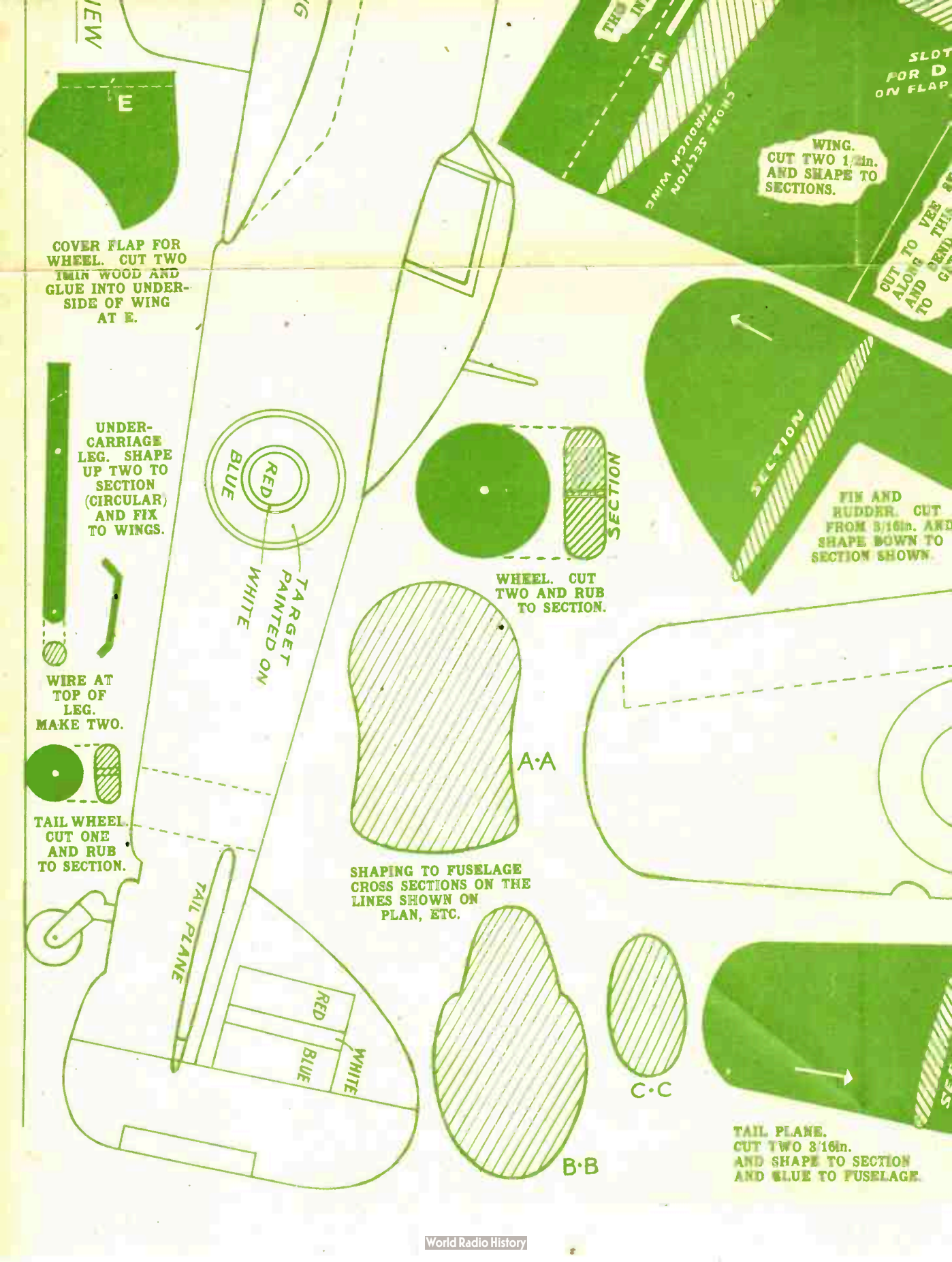


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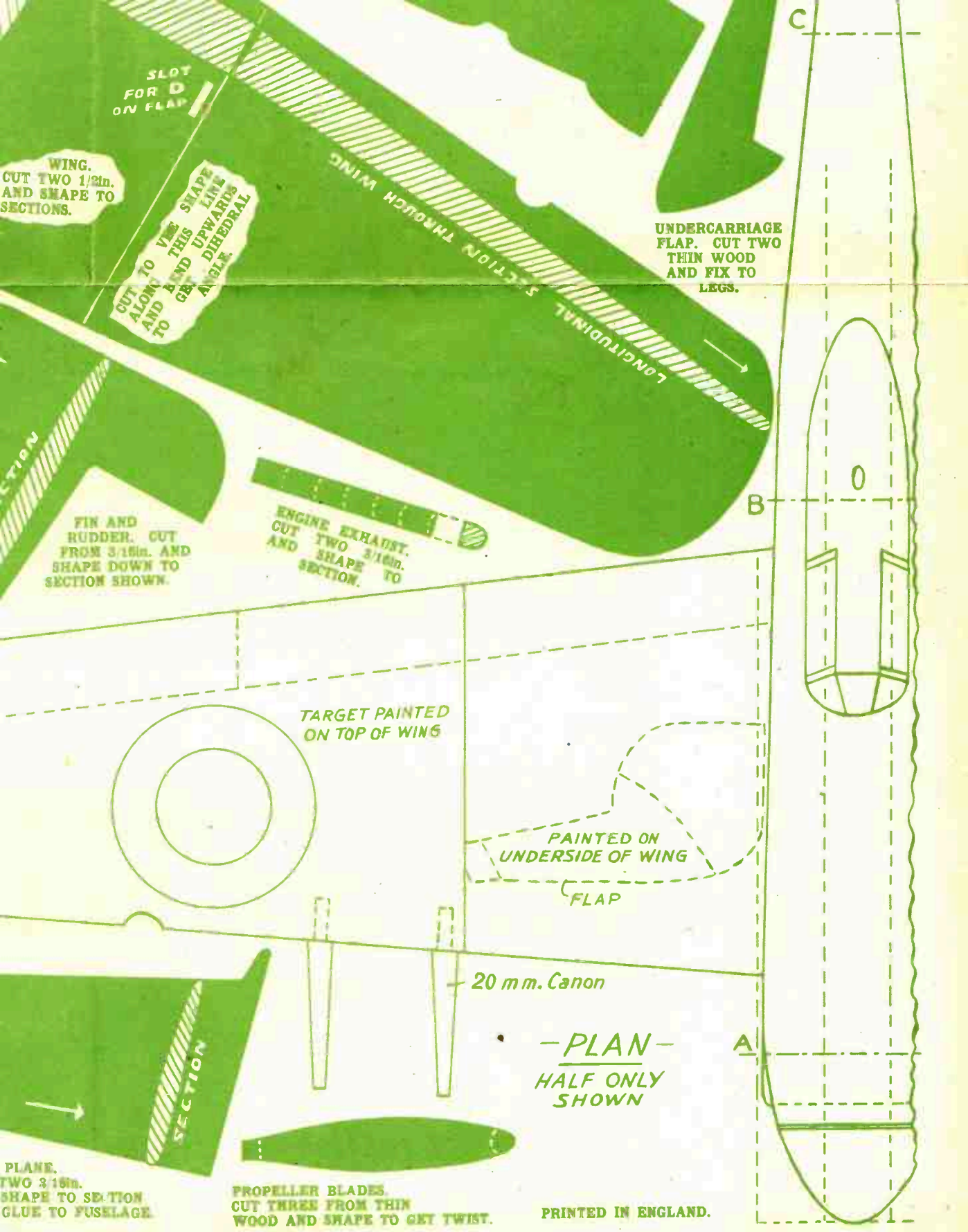


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# NON-FLYING MODEL "TYPHOON"

THE design patterns on the other side of this sheet are for one of the outstanding fighter planes of the war—the Hawker Typhoon. It is a single-seater fighter with 2,400 h.p. Napier Sabre motor providing a top speed of more than 400 miles per hour. It is armed with four British Hispano 20 m.m. cannon, and has already done much valuable service in various theatres of the war.

The model to make is of non-flying type, built in wood to a scale of ¾in. to the foot. It has a span of 15¾ins., and an overall length of 12ins. The patterns are full size and should be either marked out direct on to the boards indicated, or can be pasted down. The former plan is preferable as leaving the design sheet intact for reference during construction.

### Cutting and Shaping

The various parts are cut with the fretsaw to the outline shape shown, and then have to be curved and rounded with a small plane, rasp and glasspaper. The shape of the fuselage is shown at three points—A, B and C—and a section of these is shown shaded at the bottom of the sheet.

The fuselage itself is built of three pieces as can be seen at the righthand edge of the sheet on the plan. This plan has had to be slightly broken owing to lack of space, but the three pieces of wood are distinctly shown by the dotted lines.

Notice how the tail tapers off quite sharply, whereas the nose is quite blunt. Three pieces of wood are glued together first after being cut to outline, of course, and then the shaping done carefully to get the correct balance.

The wings are cut and shaped with the usual rounded leading edge, and tapering trailing edge. A portion of the root is sunk into the gap cut on the underside of the fuselage. This must bed down nicely after the rest of the wing has been shaped according to the shaded portion shown.

There is also a dihedral about 2/5ths distance from the inner end. This lift to the outer portion is obtained by a sawcut run nearly through the wood, and then the material steamed and gradually bent upwards to close the V so made. Be sure to get the dihedral the same.

### Wings and Tail

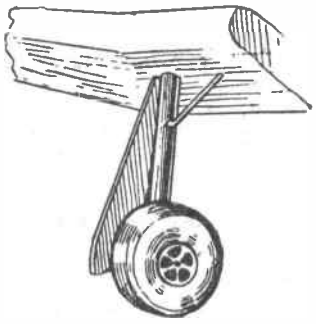
If you prefer, of course, you can cut the wing right through and very carefully chamfer the cut end to get the angle required. If you do this, place two or three headless pins in each portion to give strength to the glue.

The wings are glued under the fuselage when complete, and it may be also advisable to add the cannon and wheel portions before doing this.

The tail portion is added separately. The fin and rudder are cut and shaped as shown and glued down flat at the rightangle of the tail tip. This can be seen in the side view on the left of the sheet. The two horizontal tailplanes are glued into the side of the fuselage at the position also shown on the side view.

Here again, it is as well to add a couple of headless nails, half being driven into the fuselage itself and half into the butt end of the tail.

A detail of the construction of the wheels and their cover pieces is given herewith, and on the design. The wheel itself is rounded from a 5/16in. piece of circular wood, to which



is added the undercarriage leg leading up to be fixed into the wings.

The cover flap is glued to the side of the leg, and can be pinned also, and then the extension piece D is let into the tiny slot cut as shown on the pattern of the wing itself. On the opposite side of the wheel a further cover flap is required, and this is fitted into a similar slot (E) near the root of the wing itself.

### Additional Details

The cannon, prop, tail-wheel, aerial mast and engine exhaust are small pieces to be added, the shapes of each being shown on the sheet.

The finished model must be carefully painted, a priming coat being first given and allowed to soak into the wood before the second is added. The usual camouflage is provided with the additional marking shown. The cabin windows and frame can be painted on, as well as the roundels and target in their proper place.

The under-marking of the wing, of course, includes the black and white straight strips running across it near the root. These can be seen in some pictures of the plane, and are clearly shown in the miniature model, patterns for which were given in our issue of August 11th.

### Care in Painting

Remember that the excellence of the finished model will be largely due to this finishing operation of painting. Take care with it, therefore, and do not add a second colour until the first is thoroughly dry. The lining can be done in black with a pen or very fine brush.

The targets and roundels can be painted on separate pieces of paper, cut out and pasted on. The paper should be thin enough to stretch to the curve of the wings and fuselage.

Experienced workers will add a number of other details, but if they are not able to make a good job of these, it will be better to omit them rather than spoil the general effect.

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