

Merlin Models

P.O BOX 5 WINCANTON SOMERSET BA9 9YJ

Frog Penguin Certificate

THE BACKGROUND TO THIS KIT.

Some twenty years ago I purchased a box of odds and ends of kits and models. To my amazement and delight I found amongst them a battered and warped Fairey Battle and Hawker Demon. A flood of childhood memories came back, and I decided to try to obtain as many of these wonderful models and restore them as near as possible to their former glory. Since then I have come a long way to realising this dream. Last year I had a visit from Mr Richard Lines of the Lines Family, who had introduced the whole concept of Injection Moulded Aeroplane kits way back in the late 1930s. Having examined my collection and also some of my own humble efforts Mr Lines suggested that I should try to reproduce some of the Penguin line. The result was our Penguin Replicas of the Hawker Hart and Hind, which met with immediate acclaim and popularity. We did indeed receive so many letters of thanks and requests for more of the same that we have now released our Replica Hawker Osprey. However this time we have increased production to 2000 as we had to disappoint so many people last time because the kits were an immediate sell-out. There are a couple of points we would like to explain to those who did not get the Hart or Hind. First of all the matter of the serial numbers. In the glorious days of the 1930s when the dreaded "Kit Reviewer" was yet to be born, Messrs Frog released all the "Hart Family" of kits with the same Serial Number! As we had decided to try to reproduce the kits as near the original as possible we have used the same number. Some parts were too fine or beyond the range of our relatively simple injection machine, and we have produced them in metal instead. We would like to stress that the Registered Trade Mark FROG is reproduced by agreement with the proprietors of Hornby Hobbies Ltd. These kits are produced entirely by Merlin Models and there is no connection with Hornby Hobbies. Lastly, a plea! We are still trying to complete the collection of Penguins. One day we hope we may be able to display it at suitable venues for all modellers to share in our pleasure. But there are still a few gaps. So if anyone has available a Penguin A.W.Scimitra, Hawker Fury, Monespar, Dianah and Sectioned Empire Flying boat we would pay a more than generous price for them, whether in kit form or made up. We would welcome even warped bits and pieces! And dare we mention it, we might even part with a beautifully restored Penguin SHORT SINGAPORE in an exchange for some of them!

Hawker Osprey No 0877





The

FROG 'Penguin' Series



MINIATURE NON-FLYING SCALE MODEL AEROPLANES.

HAWKER OSPREY

Of the seven or so variants of the World-famous Hawker Hart, the Osprey is undoubtedly the furthest removed from its parent, even when, as is frequently the case, it is supplied to the Navy as a land-going machine. It was designed essentially for operation from H.M. ships, either of the Fleet proper or in Aircraft Carriers and Auxiliaries, in any of which the most important consideration is that of space. It is therefore, necessary for all ship-borne aeroplanes to be fitted with folding wings and this feature, in the Osprey, forms the most radical departure from the standard Hart. A lower centre-section has been added to bring the hinge-centres into line, and the upper centre-section now ends immediately abaft the rear spar. The other noticeable difference is the increase in the fin size—necessary, of course, to balance the side area presented by the floats.

Structurally the machine follows standard Hawker practice, but every metal part is elaborately cadmium-plated and anodically-treated against salt-water corrosion. Both fuselage and wings are specially strengthened to withstand the shock of catapult launching, for when these aeroplanes are carried in battle-cruisers and cruisers they are always fitted with floats and are consequently launched out of the ship by that method. On their return they land alongside their ship and are hoisted inboard by a derrick hooked on to special-slings carried in the upper centre-section—another strengthened unit.

In many ways engine failure or a bad landing is a more serious matter at sea than it is on land, for either may occur when the aeroplane is out of visual touch with either ship or shore. This is particularly true of the land-going Osprey, operating from Coastal Stations or Aircraft Carriers but both types are equipped with an ingenious system of "floatation-bags" in the after part of the fuselage, which, when inflated from compressed air bottles, can keep even a damaged machine afloat for a very long time and so at least save the crew.

Taken all round the Osprey may be considered the ideal sea-scout. It is readily adaptable to any duty up to its weight; it is fast; super-latively manoeuvrable; and possesses that particularly desirable attribute in deck-flying aeroplanes—the ability to land slowly. And when, in addition to its stronger and heavier structure, one considers its elaborate equipment of wireless, marine gear, floatation bags, electric heating, navigational instruments, parachutes, oxygen and so on, it is remarkable that it can still carry a very formidable offensive and defensive armament—that is, two machine guns, 1,200 rounds of S.A. ammunition and a complicated arrangement of bombs, depth-charges and sighting equipment operated electrically by the pilot.

Ospreys are to be found in naval sea ports all over the World, either in the service of foreign navies or in ships of the British Fleet. Their small size makes them eminently suitable for cruisers; and the beautiful ships of the "Leander" class never appear complete without two of them mounted on their midship catapaults.

INSTRUCTIONS FOR ASSEMBLY.

First carefully study the photograph on the box lid and the General Arrangement Drawings, checking over the various items until you are sure of where each part goes.

It may then be necessary to "clean-up" these parts with a penknife or sandpaper until their shape exactly conforms with the drawings. This is because, in manufacture, occasionally "flashes" and roughness at the corners are liable to occur.

1. **The Fuselage.** The two halves of this are first firmly cemented together, care being taken to see that they register exactly with each other. When absolutely dry the seams may be cleaned up with sandpaper or a file; taking particular care over the large recess in the deck. The cockpit-block may then be cemented in place and cleaned up when dry, any cracks being filled with cement.

2. **The Main Planes.** The only "re-touching" these will require may be a little sanding of the trailing edges in order that they may present a perfect "knife-edge" all the way along; but as little as possible should be done or the rib markings will be obliterated. The lower plane is now cemented firmly into the opening cut for it in the base of the fuselage. During this operation careful checks on the drawing should be made to see that the plane is "square" to the fuselage both in plan and when viewed from the front or rear. This latter is most important.

The two "N" interplane struts are next fitted to their sockets on top of the lower plane. Note that the upper interplane struts are further apart than the lower.

A monoplane has one plane, comprising two wings; a triplane three planes with a total of six wings, and so on.

Incidentally, the word aeroplane is derived from two Greek words, *eros* and *planos* (*eros* and *planos*) which together mean "a wanderer in the air." The word plane is the Latin one for a flat surface and implies the level surfaces presented by the aerofoils. Mono, bi and tri, are, of course, the Greek words for one, two and three.

3. **The Tail Surfaces.** The tailplane is supported at two points—at the rectangular "cutaway" in its leading edge which fits round the "step" in the tail-end of the fuselage; and on top of the projection at the extreme rear called the stern-post. It is thus nearly parallel to the line of flight and has a triangular gap beneath it. This is to permit the trailing edge of the tailplane on the full-size Hind, to be moved up and down by the pilot in order to compensate for variations in load.

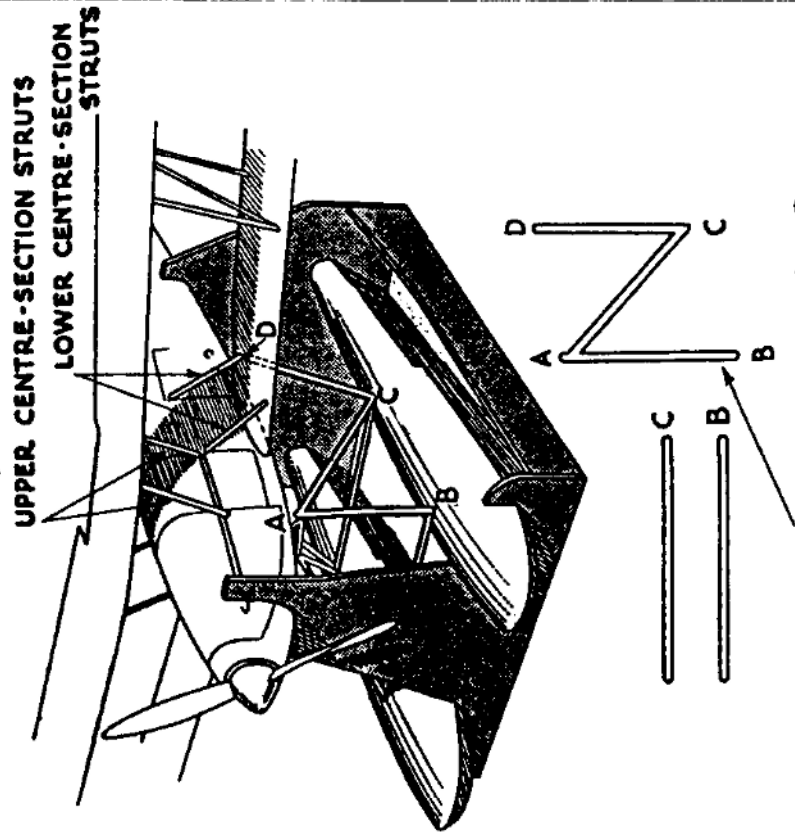
Cement the tailplane at these points, squaring it up to the fuselage in plan by holding the model over the drawing. The rudder is then cemented in place, taking care to see that it lies on the centre-line of the fuselage in plan. Finally the four tail-planes struts are cemented in exactly the position shown on the drawings.

4. **Undercarriage.** The two halves of each float are first firmly cemented together and, when dry, cleaned up with sandpaper so that (a) the decks present a perfectly smooth, rounded surface; (b) the keel presents a sharp "corner

from the front of rear. This latter is most important. The two "N" interplane struts are next fitted to their sockets on top of the lower plane. Note that the upper extremities of these struts are further apart than the lower; otherwise port and starboard are identical. Cement them well home in the wing sockets and, while drying, adjust to the approximate outward rake over the drawing. Also check that, when viewed from the end of the plane, both sets of struts slope forward the same amount.

When the lower sockets are quite dry the upper plane should be laid upside-down on the table, the rest of the model, also upside-down, lowered on to it and the upper ends of the struts cemented into their sockets, the whole being held firmly in position until dry. But at the same time, the upper plane must be squared up with the fuselage in plan and care taken to see that it is parallel to the lower plane—i.e., has the same angle of incidence—when viewed from the end.

Finally, the eight centre-section struts—four upper and four lower—are fitted, their position and arrangement being clear from the drawings.



UPPER CENTRE-SECTION STRUTS
LOWER CENTRE-SECTION STRUTS

How to fit the Centre Section Struts and Undercarriage.
LONGEST STRUT FROM A TO B

[N.B. Many people unconnected with aviation often wrongly refer to an aeroplane as a "plane," just as landmen frequently call a ship a "boat," and this leads to confusion when enumerating components. The supporting surfaces of an aeroplane are correctly called "planes," each of which is usually divided into two wings (right and left-hand) and a centre-section, or centre-plane. Thus a biplane, such as the Osprey has, as its designation implies, two planes. There are four wings and one centre-section, the place of the lower centre-section being filled by the fuselage.

first firmly cemented together and, when dry, cleaned up with sandpaper so that (a) the decks present a perfectly smooth, rounded surface; (b) the keel presents a sharp corner all along, conforming to the drawing in side elevation, and, (c) the steps are sharp and clearly defined.

Next make up the cardboard jig as shown in the sketch, and fit the floats into it. Their fore-and-aft position in relation to the jig is shown by a broken outline of the latter on the side view G.A. Drawing. They are now joined together by the two cross-bars, which are liberally cemented into the two grooves running athwart the floats.

The aeroplane is then placed in its cradle in the jig in the position shown in the G.A. Drawings and the floats connected up to it by the two "N" struts. But the following facts are of importance.

Firstly, note that the front strut of the "N" is longer than the rear one.

Secondly, the "N" does not lie in one plane, for the rear struts are bent outwards and cemented to the lower centre-section extremities and not to the fuselage as in the land undercarriage.

The above will be clear from a close examination of the drawings and the sketch, Fig. 2.

Except for extraneous details the model is now complete; but before painting check that the gun-ring can be pushed into the rear cockpit down as far as its upper flange—in other words, only half the depth of the gun-ring should be left showing. Also that the disc forming the "nose" of the fuselage is circular; just a fraction larger than the airscrew spinner; and quite flat.

5. **Painting.** The whole aeroplane should now be given a coat of silver paint applied evenly and quickly with a fairly large soft brush, every effort being made not to "work" the paint more than absolutely necessary. Leave for at least 20 minutes to dry, and then apply a second coat in the same manner.

NOTE: To obtain a really good finish, the first coat, when thoroughly dry, may be sandpapered all over with 00 Grade sand or glass paper, and this process may be repeated over three or four coats if very great care be taken.

6. **Transfers.** The transfers of the Identification discs and the Service numbers may next be placed for a minute or so in a saucer of clean water. Lift them out and slide them straight off the paper containing them approximately into their positions on the aeroplane. They will take about twenty minutes to dry but, during this time may be moved about with a finger to get them in their exact position.

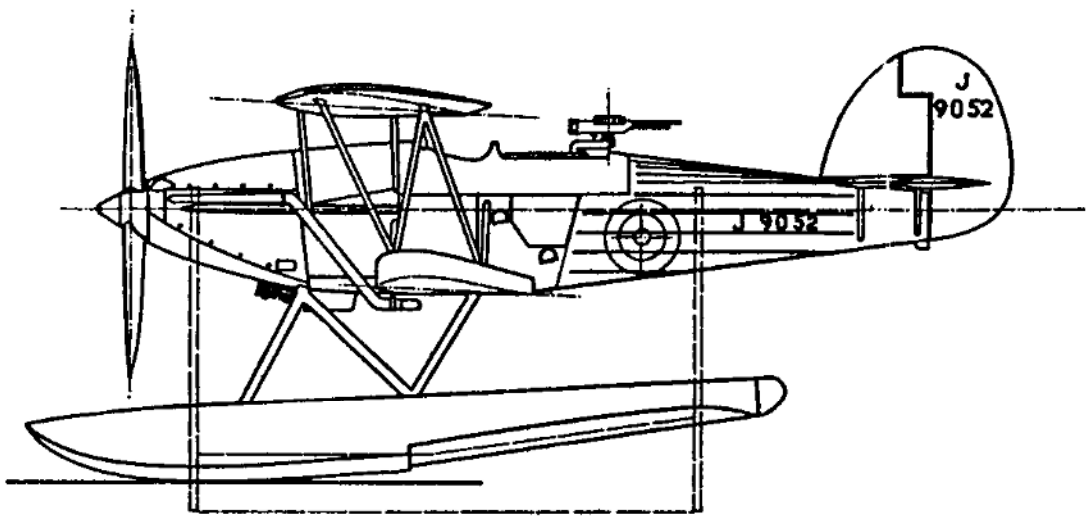
7. **Airscrew, etc.** A hole must now be pierced in the precise centre of the circular disc forming the "nose" of the fuselage. The airscrew is then threaded on to the pin provided for it and the latter cemented into its hole sufficiently far just to allow the airscrew to revolve.

The pilot's seat is then made up, painted and cemented to its balsawood block which in turn is cemented to the floor of the fuselage.

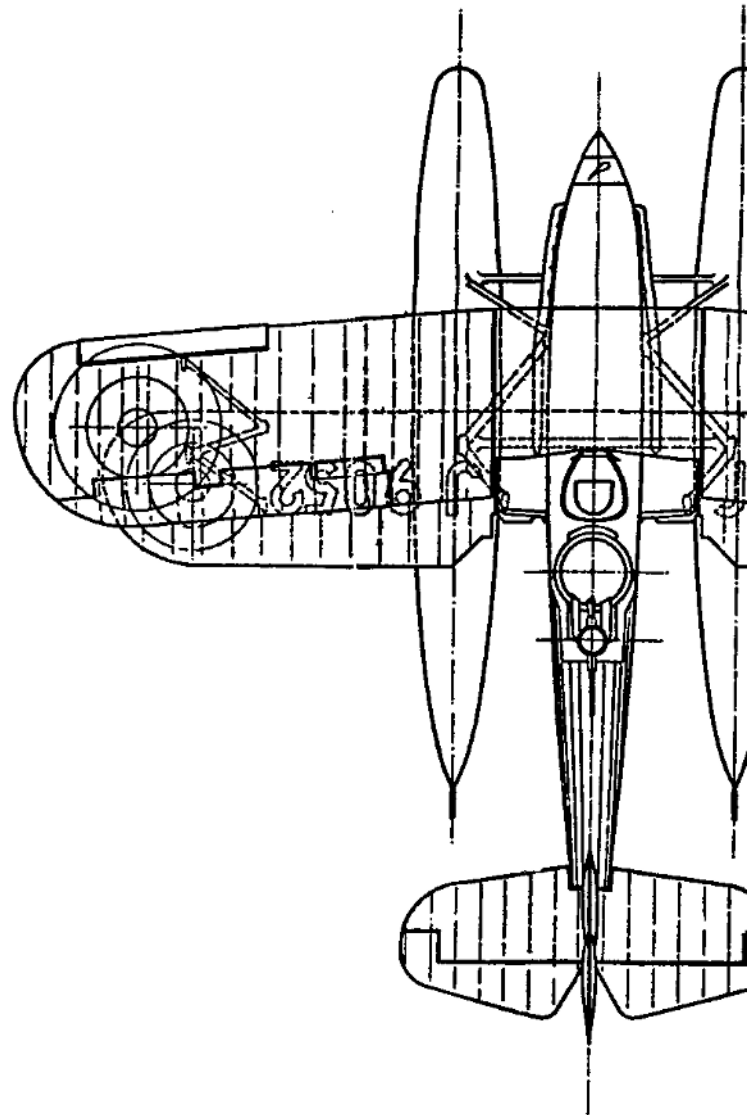
The instrument board is painted, cut out and cemented to the front edge of the pilot's cockpit.

The gun-ring and exhaust pipes are cemented in position.

Finally, details should be touched-up with Indian ink or black paint—the front and rear faces of the radiator, for example, should be black, as should the engine louvers, outlines of the foot-steps, machine gun cartridge shuttes, etc. These and other details can be obtained from the drawings.



SIDE ELEVATION.



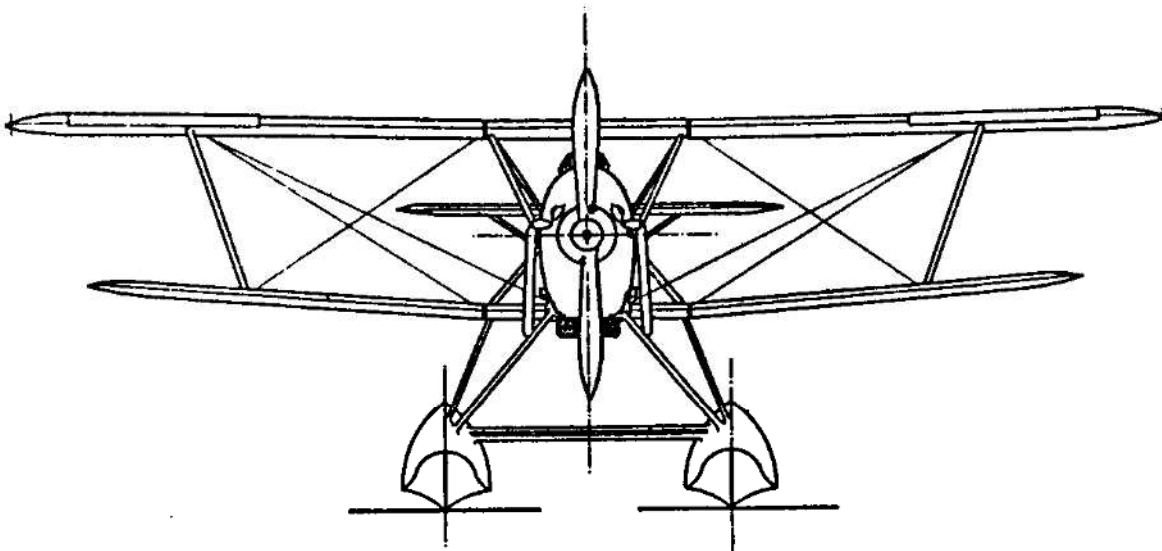
PLAN. Viewed from above

THE
FROG
 SOLID SCALE MODEL
 of the
HAWKER 'OSPREY'
 Mk. IV.

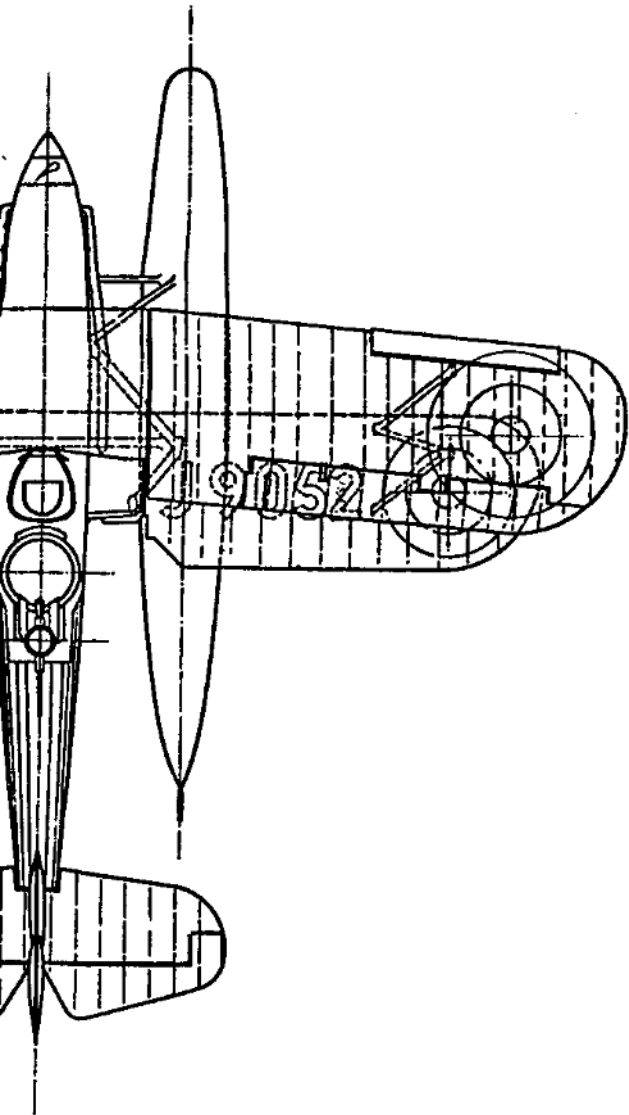
2-seat Fleet Fighter Reconnaissance Seaplane
 (640-h.p. Rolls-Royce "Kestrel" 12-cyl.
 vee water-cooled engine).

Reproduced on a scale of 72 : 1 (6ft. to the
 inch) from drawings supplied by Hawker
 Aircraft, Ltd., Kingston-on-Thames, Surrey.

Designed and made by
INTERNATIONAL MODEL AIRCRAFT LTD.,
 MERTON, SURREY.



FRONT ELEVATION.



Viewed from above.

**Specification of the full size
aeroplane.**

Span	- - -	- 37ft.
Length o/a	- - -	- 29ft. 4ins.
Overall width, folded	- - -	- 15ft. 7jin.
Height, folded	- - -	- 11ft.
Area	- - -	- 339 sq. ft.
Weight, empty	- - -	- 3,503 lbs.
Weight, loaded	- - -	- 4,790 lbs.
Fighting load	- - -	- 423 lbs.
Fuel	- - -	- 644 lbs.
Speed at 6,500 ft.	- - -	- 161 m.p.h.
Speed at 13,000 ft.	- - -	- 176 m.p.h.
Climb to 16,400 ft.	- - -	- 13 mins.
Service ceiling	- - -	- 25,000 ft.
Endurance at 10,000 feet	- - -	- 2:25 hours.