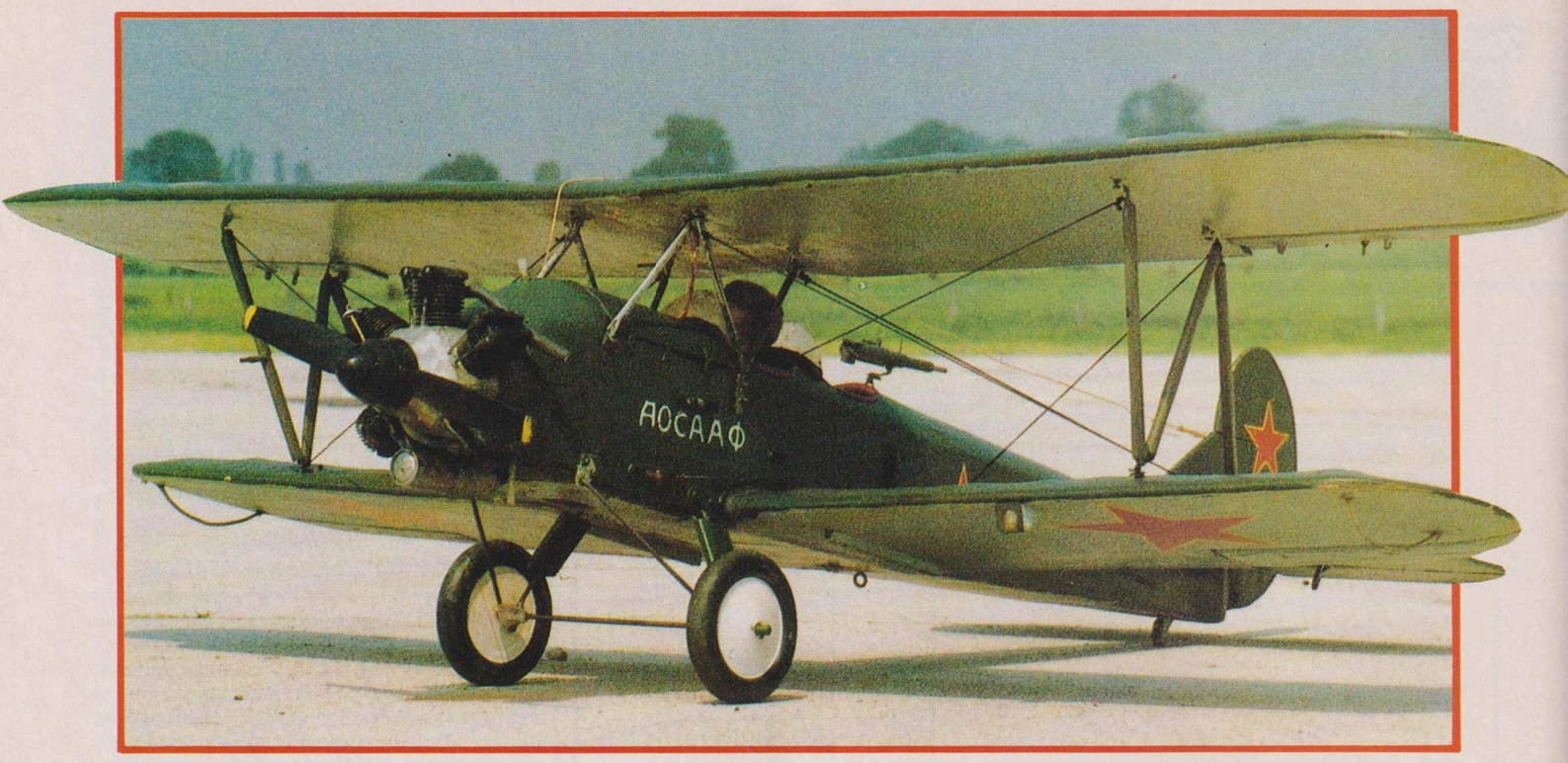


POLIKARPOV Po.2

Our full-size plan subject – Jack Elson's 48in span version of this famous Russian biplane

I had seen pictures of the Russian Po-2 but never taken much notice of it until I read Miles Bruce's book, *Night Witches*. Read that and, like me, it may inspire you to have a go at building the model!

The variant I chose was the Po-2 L.N.G. as used by a Russian all women's regiment, The 46th Guards. These young ladies bombed and machine gunned the Germans around Stalingrad and even followed them as far as Berlin on the retreat, and always at night.

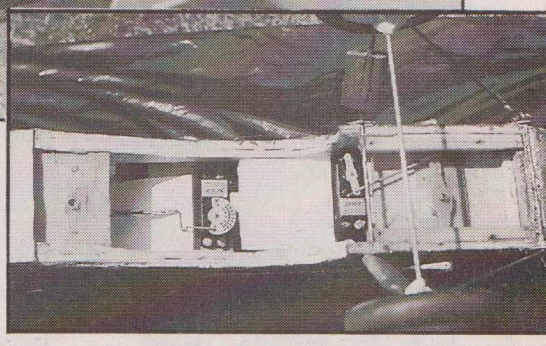
First built as a trainer, the Po-2 was later exported round the communist countries in numerous styles, and became the most built aeroplane of any country with up to 33,000 being built between 1928 and 1952. Many are still in use today being used in flying clubs, private flying and crop spraying so, after reading all about it, I sent for the *Aeromodeller* scale plan pack H2893. These were a great help, supplying lots of information, colour schemes and even full cockpit details. So much for the real one, now let's have a look at the model.

She is a 48in staggered wing biplane that will go into most cars ready rigged, is fully aerobatic on ailerons, with no vices although movement on aileron control would be best kept to a minimum for the first flight. She will, however, fly quite happily on rudder without the ailerons as that balanced rudder helps, especially on take off.

You don't have to make it full scale like mine as I am sure she would make a very good sport scale plane and probably lose some weight doing it. So take your pick. I'm sure you will enjoy it as much as I do. You know what they say: If they look right, they fly right. Well, she does!

When you are all ready to fly, check that the centre of gravity and controls are all the right way round, give full engine, face into wind and let her go. The wind pressure on that big rudder will keep her straight and she will take off in a nice steady climb out, then it's all up to you (don't panic, she'll be O.K.). The model has only flown on our own field but has been doing so for three seasons; several members have flown it and all agree she's nice, and it's not unusual to have your elbow nudged with someone saying "Let's have a go"!

Those coupled ailerons really swing her round so cut down movement until you get used to them, especially for the first flight. The engine is an old Fox 25 two stroke given to me by Duke Fox himself when I met him in London about twelve years ago, but any good 25 or 30 motor which should give a slow flight on tick over for those slow fly pasts and give plenty of power for take off and general flying will be O.K. I used a 9 × 6 Modelhob prop which seems just about right. Those low fly pasts are a dream - she just seems to be going at walking speed.



Scalish external rudder and elevator control wires enhance realism on the Po-2; note rudder servo connected to paxolin rudder bar which protrudes through fuselage sides in photo above to drive closed-loop wires (heavy Laystrate) to rudder.

The author's prototype is now three years old and survivor of countless flights; not a pretty biplane by any stretch of the imagination, the Po-2 does, nevertheless, possess a certain rustic charm and, more importantly, in model form is a real pussycat to fly. You'll find the full-size drawings in the centre of this issue - but you'll have to flip this page for supplementary information in the form of interplane strut, rudders and elevator rocker bar details, etc. Try one - you'll find it endlessly forgiving and great fun to fly. Photos: The author and Clive Smalley.

Construction

Now the bit that you have to do before you can enjoy yourself! Cut out the 1/16in ply sides then build the basic airframe over the plan using 3/16in spruce for the four main longerons and fill in the uprights with 3/16in balsa spacers. Fit ply sides making sure you have a left and right hand. Cut out F1 and F2, fit engine to 1/2 × 3/8in bearers, leaving enough length to fit into F2. Offer up bearers to F2 and make holes in F2 for engine bearers so that the real engine exhaust comes out bottom centre. This will bring your needle valve at the 11 o'clock position. Leave to set while you build the tailplane and rudder which are also built over the plan. Fit elevator hinges and rudder - you could cover these now if you wish as they are not finally fitted until the rest of the fuselage is finished.

So, back to the fuselage. Draw rear end together and glue, then make up the rudder arm and the elevator fittings and install. Servos can also be fitted at this stage. The paxolin (1/8) rudder arm is fitted under the tank bay floor using a 6BA nut and bolt with wide washer to stop any sloppiness.

Glue the floor in place, then add tank and top section, boxing it in - but please make sure you have a good tank and good plumbing. Take the fuel pipe, filler and overflow through F2 and now top decking can be added, making a hatch through which to get at your engine servo and the Rx which both fit in the top bay.

Cut out the cockpits and fit the radio switch inside the front cockpit on the left of the pilot (mine is a lady - actually a plastic doll from Woolworths). Aileron connection comes out through front hatch. Next, make up your dummy engine by glueing 1in balsa around the engine bearers and fit cylinders. I used Veron items cut to length to match the real engine.

The wings

So now we can start on the wings using the same ribs for both top and lower wings which are the same except for span. Fit ailerons in the top wing with servo and pushrods, the bottom ailerons are coupled from the top ones using servo pushrods with adjustable clevises at the top. Fit the aluminium centre section strut fittings to the 1/8in ply in centre of top wing. This also serves as the servo base for the ailerons.

Drill and screw, or bolt on, the centre section struts to the fuselage sides making sure that your incidence is correct and that you have 1in dihedral on both wings. When all in set, sand the whole airframe ready for covering. The balance point is shown on the plan and you should check this carefully.

Covering

I covered my model with nylon and doped it but there is no harm in using your own favourite covering material. As for colouring, I used Tamiya's deep green on all top surfaces and light blue underneath and fuel proofed the whole model with Ronseal clear matt finish wood varnish. Both are very easy to apply and leave a nice sheen without being too glossy. It *does* work - as I said, the Po-2 is three years old now and it is still my Sunday best model...

Have fun - and don't break it!