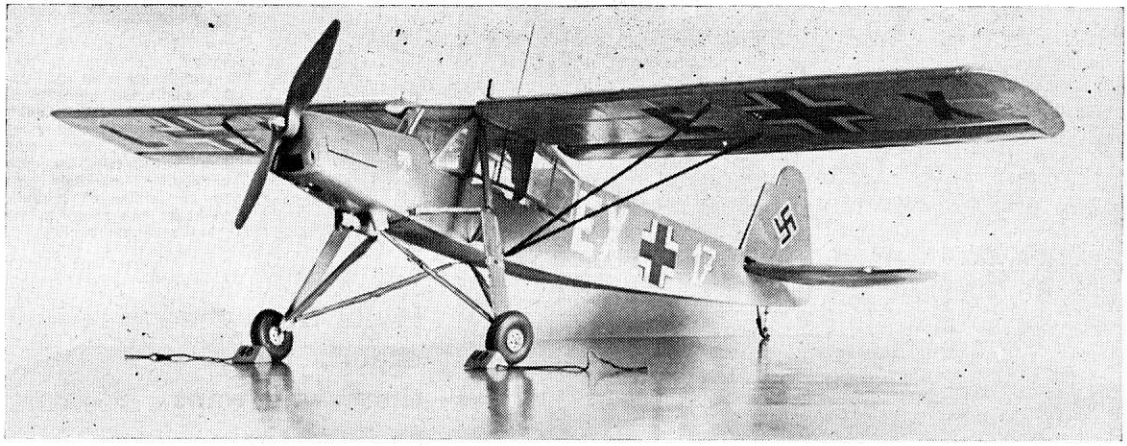
R/C or Free Flight 1/12th Scale
by P. L. Whittaker

FIESELER STORCH

TEN years of excellent service to hundreds of flying scale enthusiasts confirm the pedigree of this one twelfth size design which we are now re-issuing with radio control conversion. As a free flight model it has few peers. The proportions are near perfect. Only the odd fuselage section offers any difficulty and this is soon solved by use of a simple jig for assembly. The Storch is easy to trim and fly, with characteristics very close to the full size. Gliding speed is slow and response to the rudder will be immediate thanks to the long fuselage which now embodies a simple self neutralising two position escapement. The size of the model permits it to accept all known commercial single channel outfits. The novel fuselage is a former and stringer assembly. Start by pinning formers to temporary carriers and mount on the jig, spaced in line and at correct height. The dotted lines on the formers indicate where jig strips are held. Add hard balsa stringers and spruce cabin frame after cementing wing tongues to formers 5 and 6. These should be used to form the rolled tubes for the wings so that a good fit is obtained. Formers 7 to 12 must have areas cut away for radio installation, and harder balsa can be used to advantage forward of the centre of gravity. When the skeleton has become self supporting remove it from jig.

The undercarriage outriggers should now be bent into shape, bonded into position with Araldite or similar strong adhesives after "blocking in" the forward fuselage belly. The top u/c strut can now be formed and "Araldited" to F4. Bind and solder the intersection of the top strut with the outrigger and main leg tube on each side. *Note:* add oil cooler and exhausts *after* covering fuselage.

Paint cabin interior matt grey, glaze windows with stiff celluloid. Form window frame from $\frac{1}{8}$ in. strip celluloid and cement into position, to cover the spruce frame. This secondary frame will be painted later and conceal any cement bonds, on the real machine the windows are joined externally with strips of doped fabric to seal the gaps!



Main oleo struts are formed in 14 s.w.g. wire and pivoted in the brass tube soldered onto lower rear outrigger strut as shown on plan. Thus the legs will move back and outward under landing shocks, supported by rubber bands round the undercarriage. This is a good point for abrupt landings!

Fin and elevator profiles are formed around cardboard formers cut to accurate shape. Some may prefer to have soft balsa "solid" surfaces if 1.5 cc. is used. Determine which of the tail shapes you wish to employ by studying the 1/72nd scale plan data.

Assemble mainplanes (minus slats and flaperons over the plan. Next cut 4 *full* ribs (including flaperon) in $\frac{1}{16}$ in. ply and cement to each end of the panel. The second wing panel can be built over the back of the plan after it has been wiped with an oily rag to render it translucent. Note that the tubes for the wing tongues must be firmly fixed. Add wing tip blocks and carve the root fairing. Then build the flaperons by cementing "riblets" direct to $\frac{1}{16}$ in x $\frac{1}{4}$ in. leading edge and $\frac{1}{32}$ in. sheet lower surface. Sand trailing edge and cement upper $\frac{1}{32}$ in. sheet in position. Slats are formed wet by wrapping around a broom handle and attached to $\frac{1}{4}$ in. dowel. L.E. Shape a section on the slat before fixing in place. The assembly is tissue covered. Cover the entire model with silk or nylon, well tautened with glider dope then attach slats and flaperons. Note the reflex T.E. position of flaperon which helps for stable flight performance.

Cut wing struts to length for dihedral of your choice ($1\frac{1}{4}$ in. at tips is sufficient with care in trimming). The struts are plugged into a paper tube across the cabin floor and drawn together by a rubber band, each plug being formed as a hook. Do not fix the tail assembly to the fuselage until after first glide tests.

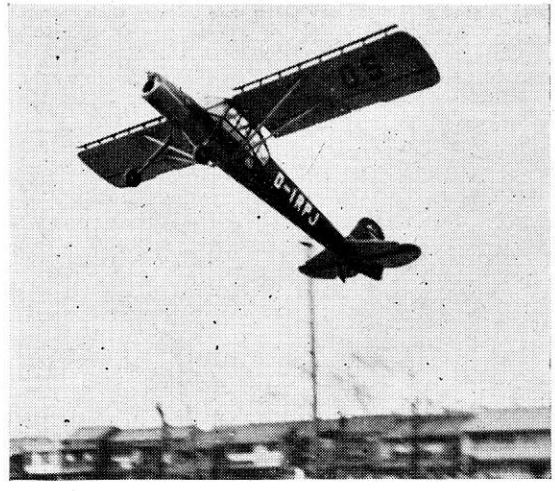
Use the colour scheme of your choice over adequate clear dope and grain filling treatment and finish with fuel proofer. Before flight tests, fit all the internal R/C gear and check for balance.

Ensure that the C.G. is on mainspar and set the tail assembly to give a long flat glide, cement at the best position and make a flight on reduced power using an 8 x 4 in. plastic prop. Adjust engine offset as necessary to give very slight turn to starboard at low power.

A flight at full power should result in a short straight take-off, followed by a climbing turn to the left.

Rate of cimb can be controlled by reducing, or increasing downthrust and it is possible to get a 50 in. take-off run (in still air) followed by a typical Storch-like steep climb.

One can imagine the possibilities with engine speed control. Development flying on the prototype was completed using only two bolts to retain the motor. At this stage the remaining holes were drilled in the bearers and bolts screwed home. This is a handy tip, worth using on any scale subject. All set! Right! Now who'll be the first to make a V/STOL spot landing?



At right and far left, two versions of the Storch made for radio control by Japanese modellers (note the 'OS' under the wingtip to advertise the engine). These ably illustrate the practical qualities of the subject for scale model flying. At top of the page is Peter Whittaker's original model from the plans, as designed for .5 to .8 cc. power and pure free flight. Modern radio control equipment has permitted easy modification to further extend the already long life of a very popular model. See other pages in this issue for colour data.