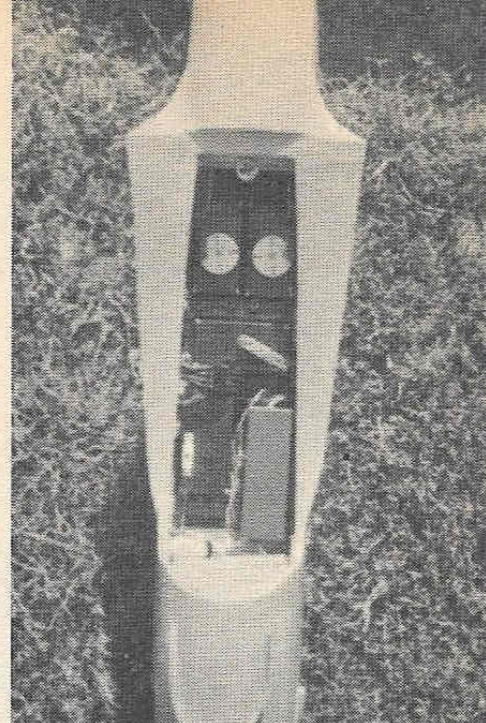


With .19 or 25 size engine it really moves out, without flaps take offs and landings would be difficult. Fifth servo used for flaps, here we see the little bird landing with full flaps.



Four Orbit type servos and Micro Avionics receiver use all possible space in fuselage.

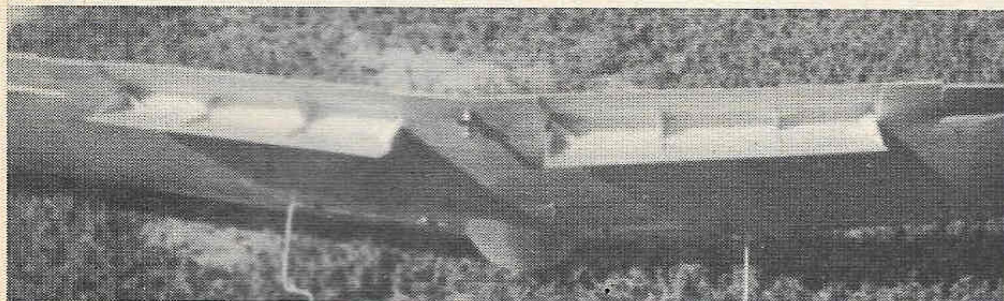


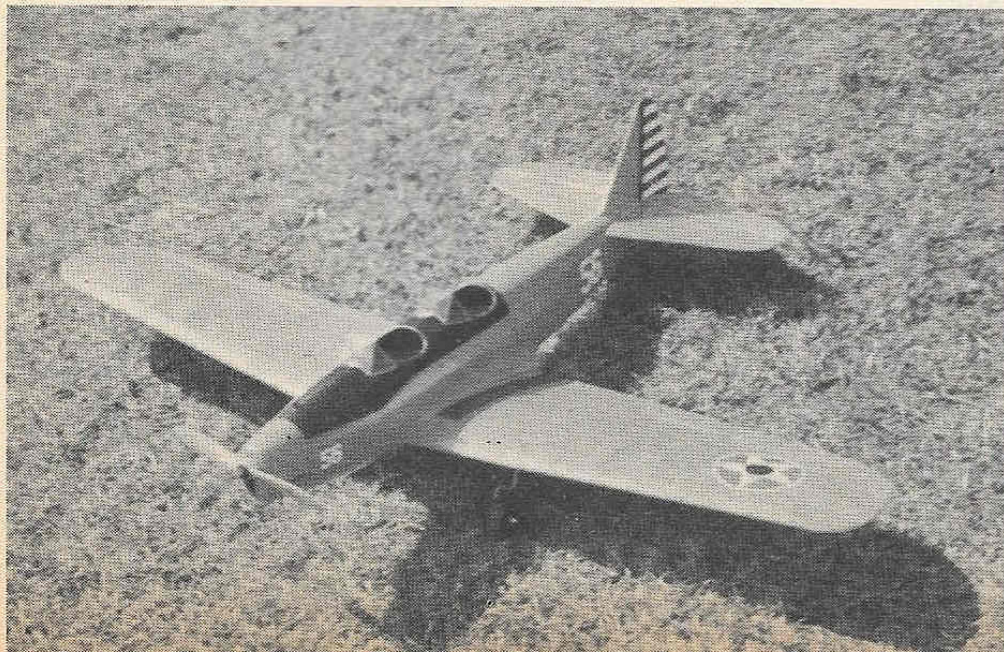
Photo above shows flaps partially extended. Flaps are made from 1/16" sheet with half ribs glued to it. In photo above right two rear servos are elev/rud., center flaps, front motor.

FAIRCHILD PT-19

By RAYMOND CLAPPER

Exciting full house scale is smallest multi plane seen on contest circuit—modified Sterling kit this 43" span machine designed for control line or escapement can win multi pattern/scale.

Plane is finished in military blue and yellow with kit decals. MAN at Work saw this machine in its first contest at Endicott and it stole the show placing among first five multi novice.



► This PT-19 was built from Sterling's FS-5 kit, and flies fairly well for a scale airplane. Weight is approximately 4½ pounds using Micro Avionics R/C gear with all five servos; four in the fuselage and one in the wing. It flies faster than scale with an OS Max 19, but needs the power for take offs and landings. The flaps are a necessity probably because of the high wing loading.

The .19 will be replaced with a Super Tigre 23 which should increase the ship's acrobatic ability. With a Max .19 it will do the complete pattern, with the exception of outside loops.

The plane has some down trim in it, but it balances according to the plans, so the down trim must be due to the down thrust in the engine. It is very difficult to put in the down thrust since the engine is mounted close to the firewall. The down thrust which is called for according to the plans can and should be increased. How much to increase it will have to be determined by experimentation. The following paragraphs will describe the modifications for the various parts of the airplane.

Fuselage

The frame of the fuselage was built according to the Sterling plans, with the exception of not building the wing on the fuselage. The wing was built separately and camlocked in place. The firewall former, F-1A, is made from 1/8 plywood. The entire fuselage is planked with 1/16 balsa which makes it considerably stronger. This fact has been proven in a few good crashes. The planking adds very little to the weight.

Plans show that the top of the fuselage is removable. However, since the wing is removable it can be glued in place. A 1/16 inch plywood platform is added on (Continued on page 59)

Fairchild PT-19

(Continued from page 27)

The inside of the fuselage from former F-3C to former F-7C. This gives a solid platform for mounting equipment.

The shaded portion on the fuselage, just in front of the wing, was made from a solid balsa block. This gives a solid mount for the removable wing. The darkened portion attached to the wing can either be built up or made from a solid block. The portion of the fuselage where the wing rests was reinforced with 3/16 inch balsa sheet. Break away plates in front of the wing, and in the rear of the wing, were made from 1/8 inch plywood. These work well and have saved the wing many times.

A deBolt 4 oz. metal clunk tank was used as shown on the plans. Mounted below the engine mounts, because the engine is inverted. In this way the fuel line will be even with the needle valve of the inverted engine.

Make a pattern for the fuselage fairings out of light cardboard. They are glued on the fuselage after the wing has been built and secured in place on the fuselage with the camlock. Lay 1/16 inch sheet balsa on the wing and glue it flush with the fuselage. Then glue triangular fillets on the 1/16 inch sheet and fuselage. After this is dry, remove the wing and glue on the cardboard fairings. When this is dry, trim off the excess balsa.

The cowling was made from fiberglass cloth. First make a balsa form from a

solid block, 1/16 inch under-size, then wax it. Next, place the fiberglass sheet on the block and pour on the resin. After it has hardened, slide the cowl off the block and cut out the necessary openings. The cowl is simple to make and it is very strong.

The engine is mounted according to the plans, however, the down thrust was not enough. It is very difficult to keep the engine cool with the cowl on, because it is mounted right up against the firewall. Cut larger openings in the cowl to cure this heating problem.

Scale details such as the crash bar, windshield, and bottom cowl vent, were made according to the plans.

Wing

The wing is made in one piece. It has a slighter larger wing area than the kit calls for. This extra area is too noticeable, but it certainly helps in the glide. Increase the chord only at the center by a 1/2 inch. The wing tapers to the same chord at the tips. The airfoil is made thicker at the center in order to fit the servo. The rib shape at the center of the wing is 1/16 inch higher at the point indicated on the plans. Plank the wing out to the point indicated on the plans.

The flaps and ailerons are cut out of the wing after it is built. They are made the scale size. The ailerons are large enough and roll the plane beautifully. The placement of the aileron horn and bell-crank is shown on the plans. The wing had to be strengthened behind the ailerons since it was not planked there. Use 1/16 inch balsa on the top and bottom of the wing as shown on the plans. Change the dihedral in the wing to 1 5/8 inch under each tip. It's not scale, but it makes the airplane fly more like a multi-airplane this way. If you wish, you could put in the scale dihedral. It would make the airplane more stable.

The wing is held on with one camlock in the center of the trailing edge. Use two 3/16 inch dowels in the leading edge of the wing. Most planes use one dowel and two camlocks, but there just isn't room for this type of installation.

Stabilizer and Rudder were not changed. They were built according to plans.

Landing Gear is like most of the newer multi kits, such as the Taurus, using slotted hard wood blocks, the gear is added after covering and finishing, held on with

aluminum straps in the position shown.

The tail wheel is not scale, but works well. Use a Bonner tail wheel bracket with 1/16 wire.

Flap hook up

Flaps work from the fifth channel in the original, however, they can be connected to work from the engine control servo if four channel equipment is used. The flaps are scale and are hinged on the bottom of the wing.

Comment by R/C Editor

Flaps cannot be directly hooked up to the engine speed servo. If done this way, you would have varying degrees of flap during all throttle changes, including *no flaps* in high engine for takeoff.

If flaps are spring loaded in the *up* position and can be deflected *down* by the last 3/16 inch or so of servo movement at the low speed end, it is possible to have flaps for landing only. However, it is indicated that they are also needed for takeoff at high/engine.

In this case, the only alternative is the use of an auxiliary or slave unit which would be switch actuated by the throttle servo. Micro switches closed by the last 1/16 inch of movement of the throttle in either direction would operate the slave unit, allowing almost a complete range of throttle without affecting the flaps. Limit switches and separate battery pack would also be in order. It's pretty safe to say that five channels is just about the only way to go. . .

Comments on Flying

It is recommended that only someone with considerable flying ability take the PT off the ground for the first time. It is tricky, and very unstable at slow speed. You simply can't "horse" it off the ground. It doesn't need much runaway, but does need its flying speed. A lighter model would not be so unstable.

Landing the PT is another problem. Flaps are just about mandatory, in order to gain a little more lift at slower speeds. The ship is difficult to flair out until you become familiar with its slow speed characteristics. It stalls very easily. It is best to make wheel landings for a while until you get the feel of it. The original has been cartwheeled quite a few times trying to make three point landings.

This plane can be flown as a Class III ship at any contest, as demonstrated at Endicott. Of course, it can also be flown in scale, for which it is meant. With a little work you can make it almost perfect for scale competition without worrying about the scale features hindering its flying ability. It is used mostly just for sport flying.

The PT is a beautiful scale airplane airplane whether used for scale, sport flying, or Class III contest flying.
