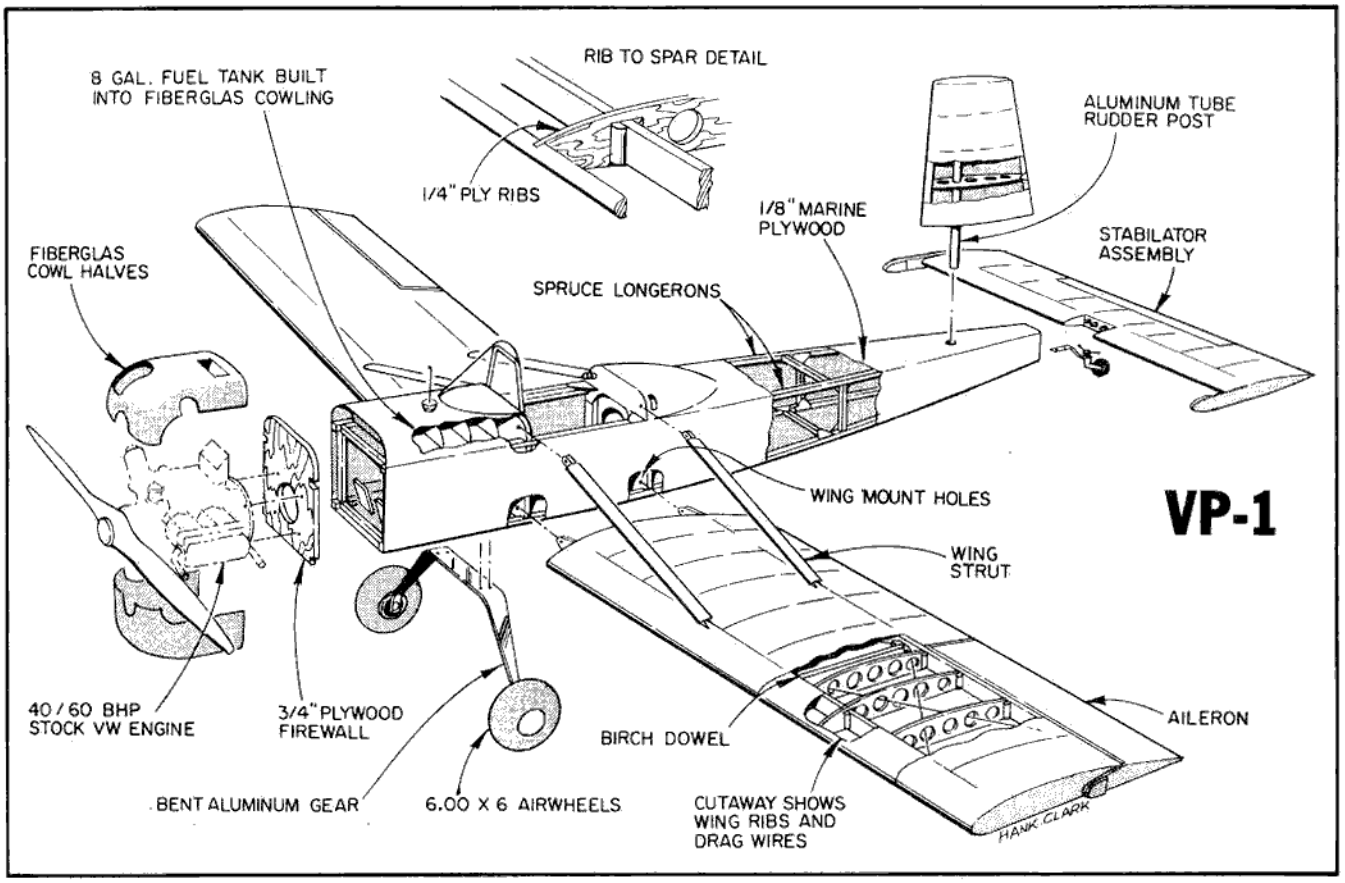
VOLKSPLANE VP-1

Miss Ethne Jean "E.J." McGeehe, a former student of Pauls, shows off the Volksplane.

Try this One Quarter Scale version of the ever popular single place homebuilt.

By Paul F. Denson

The prototype VP-1 was designed in 1966 and built during the following two years by its designer William S. Evans. It was test flown early in 1969 by our modeling friend the "Old Professor," Walt Mooney. Since that time many VP-1's have been home-built all over the country. Stock 'Bug' engines of the 1500 to 2100cc range were used. In 1970 a larger 2-place version, the VP-2 was designed using the 1834 to 2100cc V.W. engines. If you have an interest in the full size or would like a scale reference, a modest fee sent to Evans Aircraft Co., Box 744, La Jolla, California 92037, will bring you a booklet full of pictures and drawings. It is full of information and



specifications regarding the two planes.

We do not remember when the inclination to build a R/C version of the VP-1 finally took hold. We have six or seven magazines all of which contain articles on the VP-1, either full size or models. Most of these magazines are turning yellow so we finally hauled out the butcher paper and tried the VP-1 Quarter Scale.

The original plan was to use an O.S. .60 4-cycle as the power plant but we also wanted to make it as near scale as possible. The weight began building up and at the last moment we switched to a K & B .61. The R/C prototype was flown on both the K & B .61 and an Enya .60. Full throttle was used only on take-off and 1/4 to 1/3 throttle was enough to keep it putting around the sky.

From what we can see of the full scale plane, Evans used modeling technique on a grand scale so all we did was to divide everything by four and use the same technique on a less grand scale. His fuselage was a long 4 stringer box covered with ply; so is ours. He used wing ribs slid on spars; so did we. The only place he departed from modeling technique was to add drag wires and compression struts. They look great and are fun to build, so we did too. The full moving rudder and stabilizer posed quite a problem, but by remembering a few things from mechanics in Physics 101 we were able to keep the movement within reason.

So to construction. This will not be a step by step article — if you need that, you shouldn't be building this plane. It is designed for builders with a fair amount of experience.

The majority of fittings in the wing and on the struts are sold by Proctor Enterprises. You should have his catalog when you start to build so you can see just exactly what each part called out on the plans looks like. You should be able to get all these fittings at your hobby shop.

Much of the wood used in the plane was cut at home. Straight grained soft white pine 1" x 4" x 6' was selected at

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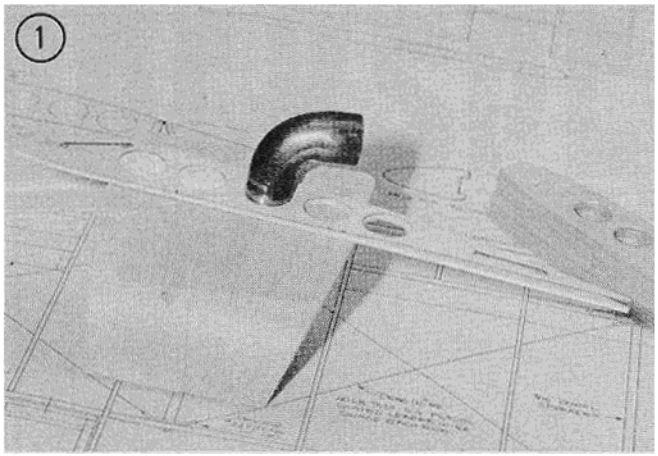
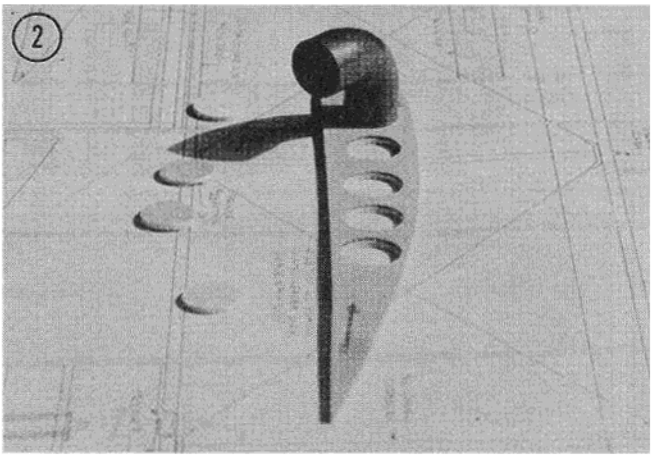
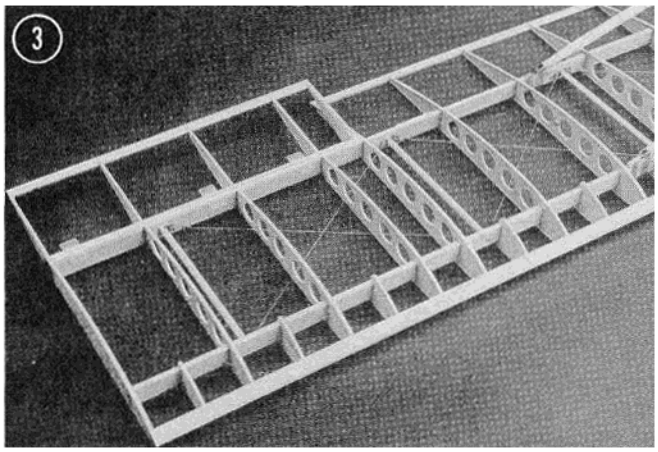
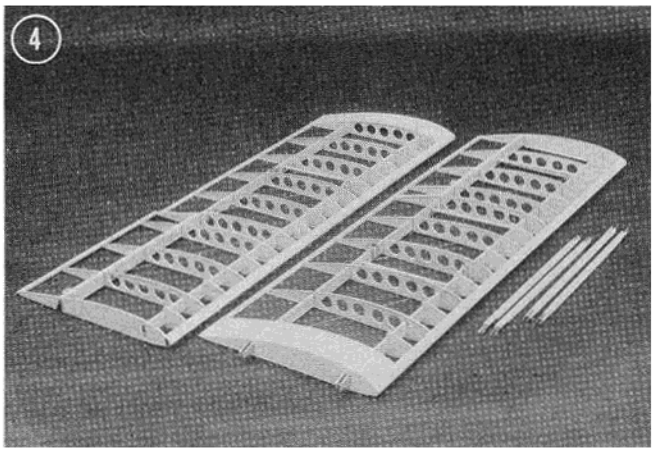
VOLKSPLANE VP-1
Designed By: Paul F. Denson

TYPE AIRCRAFT
Stand-Off Sport Scale
WINGSPAN
72 Inches
WING CHORD
12"
TOTAL WING AREA
864 Sq. In.
WING LOCATION
Low Wing
AIRFOIL
NACA 4412
WING PLANFORM
Constant Chord
DIHEDRAL EACH TIP
3 Inches
O.A. FUSELAGE LENGTH
55 Inches
RADIO COMPARTMENT SIZE
(L)12" x (W)5" x (H)4"
STABILIZER SPAN
24 Inches
STABILIZER CHORD (incl. elev.)
7"
STABILIZER AREA
168 Square Inches
STAB AIRFOIL SECTION
Symmetrical
STABILIZER LOCATION
Top of Fuselage
VERTICAL FIN HEIGHT
10 Inches
VERT. FIN WIDTH (incl. rud)
7" (Avg.)
REC. ENGINE SIZE
.60-.61 cu. in.
FUEL TANK SIZE
10-12 Ounces
LANDING GEAR
Conventional
REC. NO. OF CHANNELS
4
CONTROL FUNCTIONS
Rud., Elev., Ail., Throt.,
BASIC MATERIALS USED IN CONSTRUCTION
Fuselage ..... Spruce, Balsa & Ply
Wing ..... Balsa & Ply, Spruce
Empennage ..... Balsa & Spruce
Wt. Ready To Fly ..... 132 Oz.
Wing Loading ..... 22 Oz./Sq. Ft

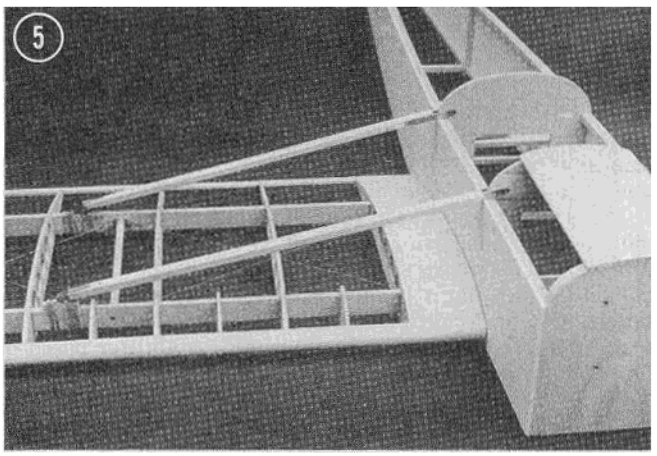


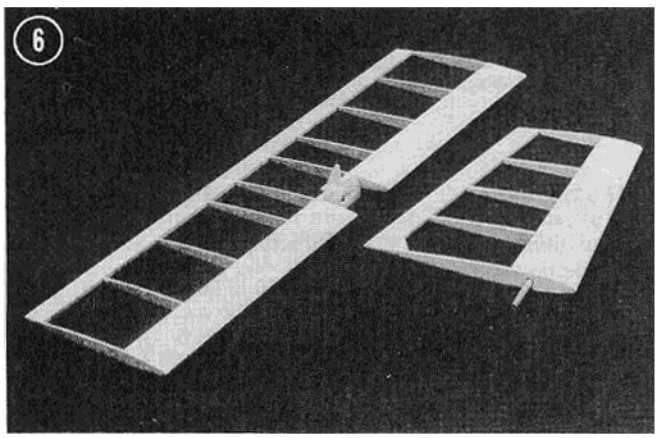


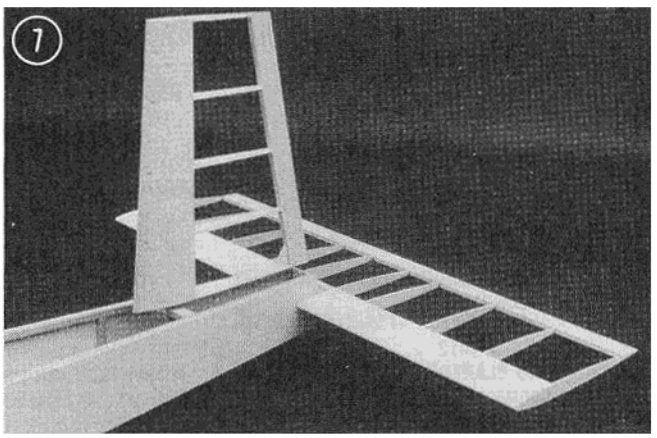


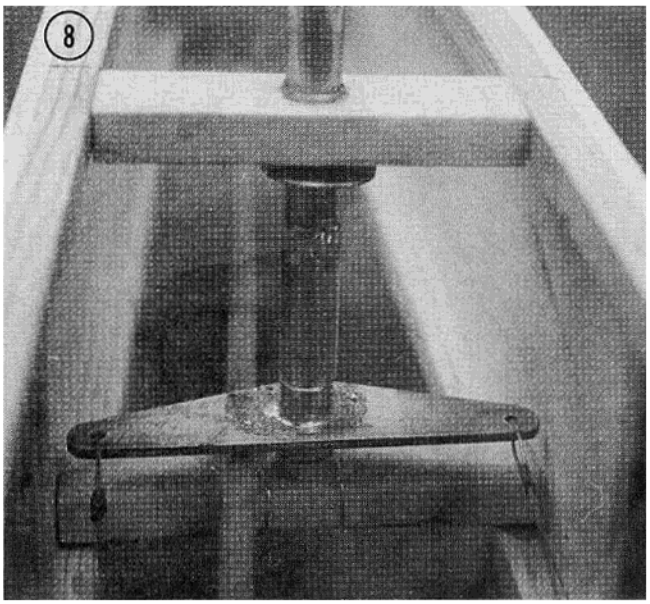


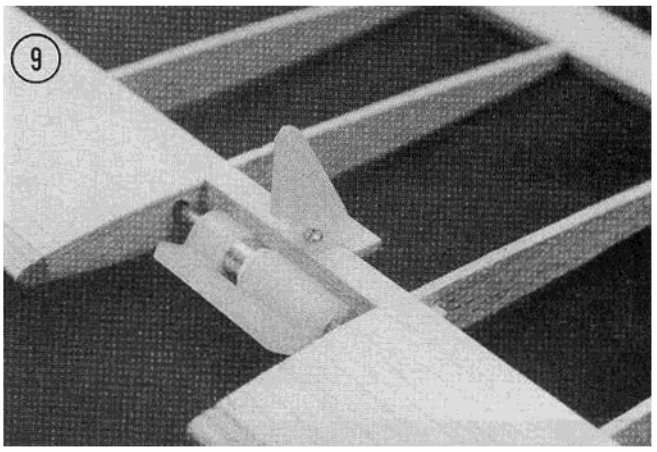
(1) Plummers copper elbow hole cutter. Note block of balsa, using end grain, gives cleaner cut. (2) Hole cutter, completed rib with ply template used as guide. (3) Right wing panel showing internal details, aileron shown in the up position. (4) Both wing panels complete with struts. (5) Right wing in place with struts attached. (6) Completed tail assembly ready to attach to fuselage. (7) Tail group in place on fuselage to complete control linkage hook-up. Rudder is by cable.

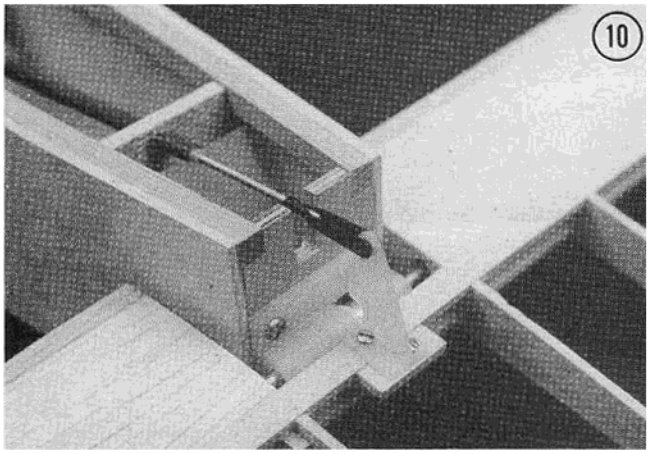


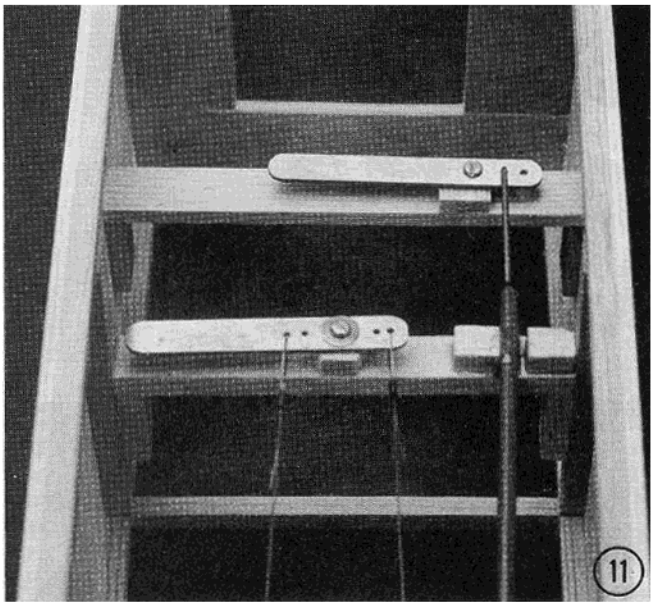


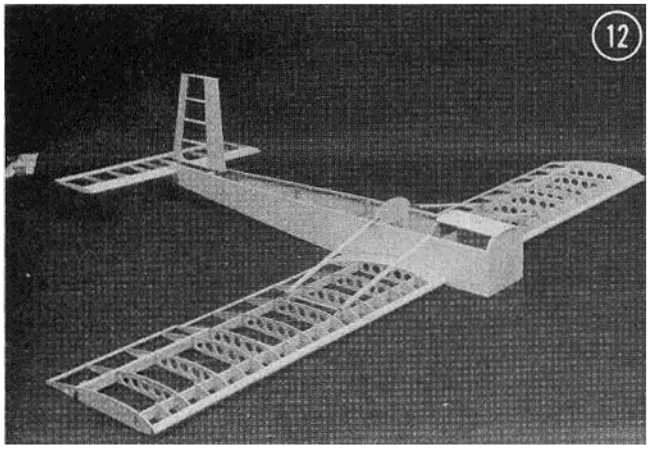


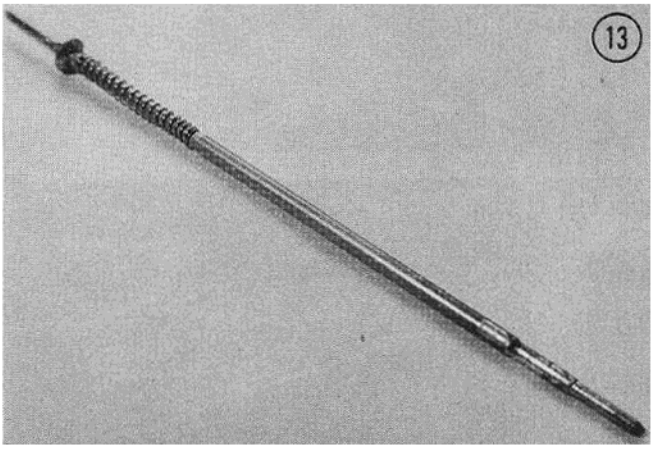




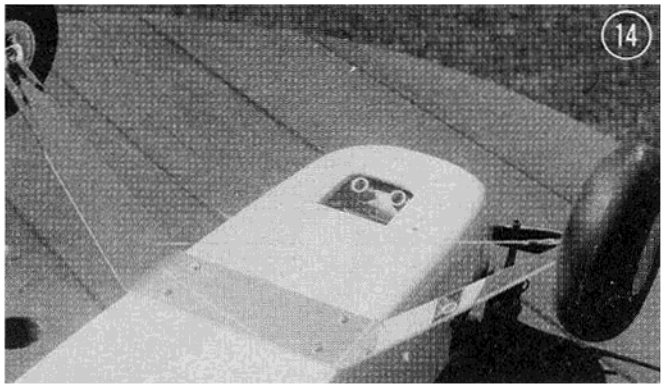


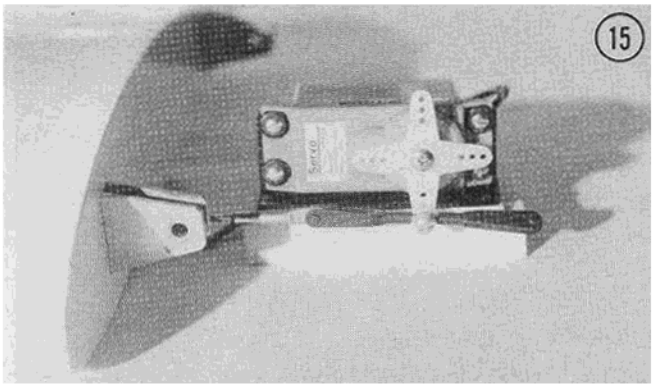


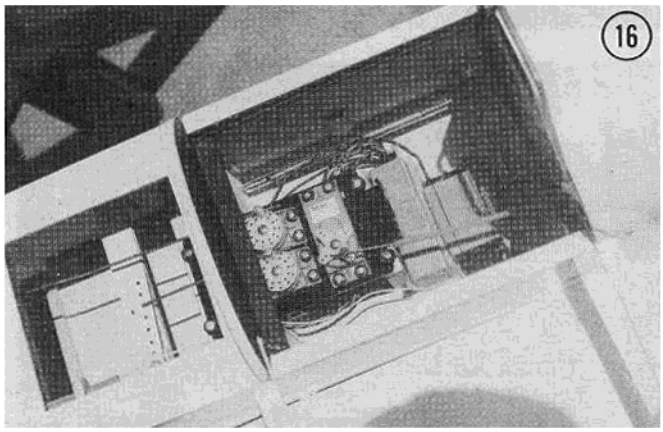


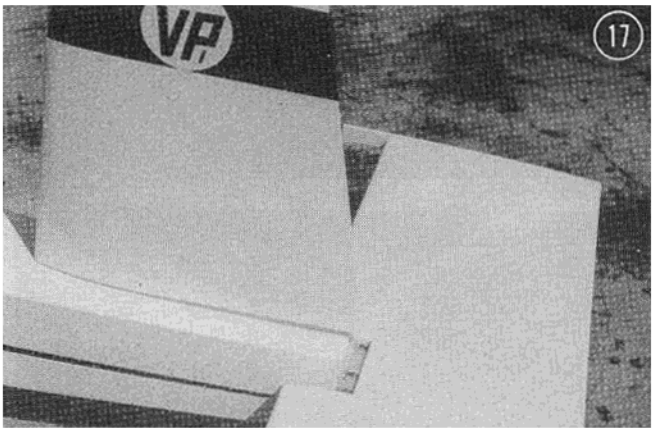


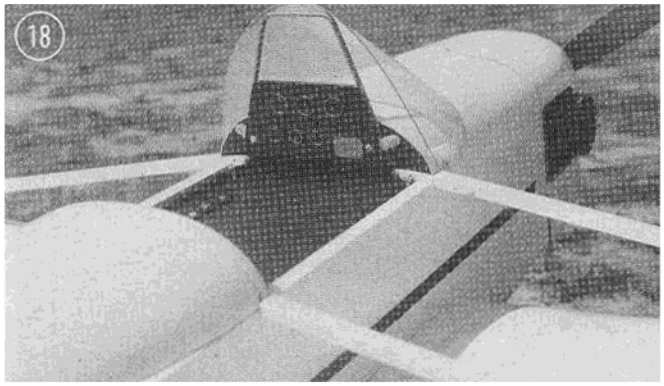
(8) Rudder post shown inside of fuselage. Rudder sits on post and is cable controlled. (9) Nose wheel bearing is used to connect elevator to rear of fuselage. (10) Bottom view of fuselage showing elevator attached to rear of fuselage. Very neat arrangement. (11) Tail surface bellcranks. Top one is elevator and lower is rudder. (12) We all do some bench flying while building. Is that why it takes so long sometimes? (13) Spring loaded pin to secure wing panel to fuselage.

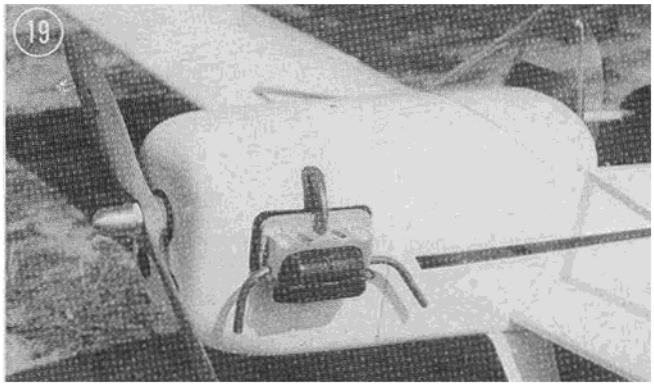


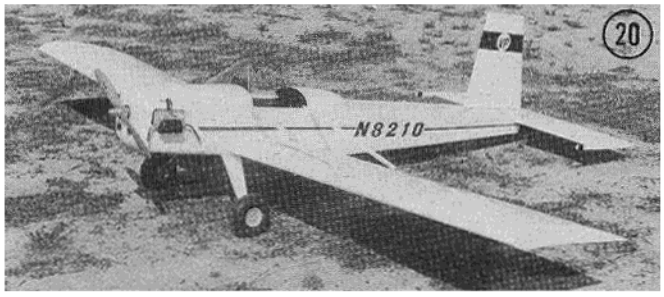












(14) Tatone muffler blows exhaust out the cowl opening in bottom. Note crossed L/G brace wires. (15) Designers method of attaching servo to aileron pushrods. (16) Cockpit floor and rear turtle deck removed to show radio installation. Note left wing securing pin. (17) Finished and covered tail section. Very clean installation. (18) Close-up of cockpit area. Builder can go as far as they want. Full size is very simple. (19) Close-up of dummy VW engine. Adds much realism to model. (20) Completed model makes a beautiful One Quarter Scale model. (21) The Quarter Scale Walt Mooney is out for 1/4 of a sandwich. No need to look for him Paul.

the lumber yard. A lot of strips can be ripped from one of these. We spent one whole afternoon ripping stringers and spars, leading edges and trailing edges. Another evening was spent cutting ribs from balsa. Templates were made from 1/16" ply and each rib was cut individually. Then a hole template was made and a sharpened copper plumber's elbow was used to cut the holes in the balsa ribs through the ply template. The rectangular holes for the spars were cut with a #11 X-Acto blade.

Designing the hole location was fun, getting things set up so there was always a hole in the right place in each rib so the drag wires could pass through. Since we live on the Pacific Coast, finding plastic coated stainless steel leader wire wasn't too hard as many streets in our city have wall to wall bait and tackle shops. You can perhaps order the wire from the catalog of your favorite fishing supply house. Do not forget to order the bronze swages necessary to close off the ends of the wire.

The only real problem in constructing the fuselage is the pivot for the rudder. Do not cover the top of the fuselage nor add the cross brace until the pivot tube is finished. It is better, too, to put the blind mounting nuts in the rear former for the stab pivot before adding top ply sheeting.

We fabricated our own landing gear but Sig has a blank, as mentioned on the plans, and the HallCo heavy with 18" tread will come close. The wide fuselage complicates things because the mounting surface on the gear is too small.

The struts are functional and must be attached firmly at both ends. At the wing end, they are pinned permanently with 1/16" wire. At the fuselage end, the brass strips were threaded and a 2-56 machine screw holds the two brass plates tight on both sides of the cockpit formers.

A spring loaded set of pins are used to hold the metal spar retainers to the proper former. When you place your servos and receiver in the radio compartment, you must leave room to get these pins in and out. We remove only one wing and what is left will fit in our compact station wagon.

In the finished plane, the aileron servo wound up flat rather than upright as shown. This we we avoided bending the aileron pushrods. See picture to clarify the hook-up method.

Be careful that your plane balances where indicated on the plans. A slip-up in this area almost caused a disaster during the first flight. Eight ounces of weight was added inside the cowl; the second and succeeding flights were excellent. The VP-1 is a floater; do not use the same landing method you use with your Super Duper .60 Speedster or it will float the full length of the field and you will see it disappear over the fence at the boundary of the field. Come in low and slow.

If you insist on pure scale, order the booklet mentioned in an earlier paragraph; the stab is a little over size. We hope that you, as we did, find the Volksplane a challenge to build and a joy to fly. □

From RCModeler Feb. 1983