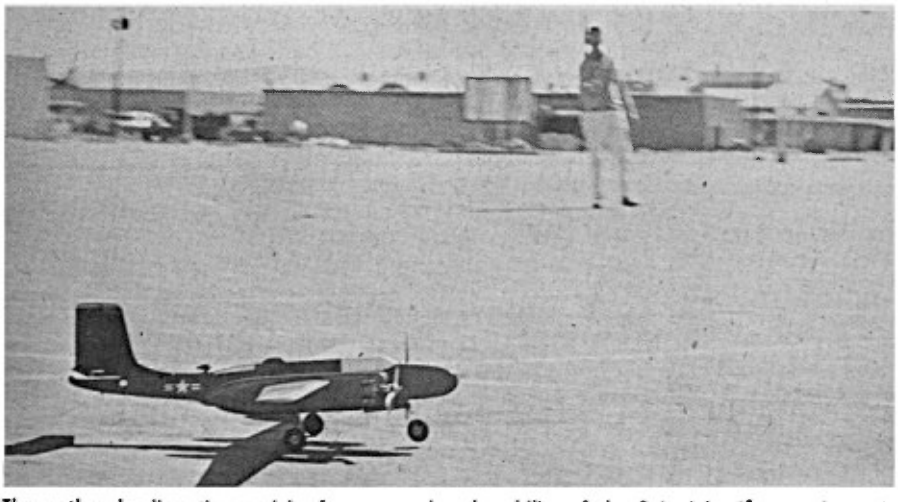
PROFILE A-26 INVADER

FINE CHANCE TO HAVE YOUR CAKE AND EAT IT TOO—GOOD SCALE EVEN IF IT IS PROFILE AND FLIER CAPABLE OF STUNTING; SINGLE ENGINE FLIGHT. TWIN ENGINES GIVE GOOD SPEED.

by CLAIR SIEVERLING

Designer with his well finished A-26 Invader. Attention to details will give that realistic look so frequently lacking in profile models. Note the simulated landing gear well covers and turret.



The author landing the model after a good flight. Only plenty of flying experience will give the ability of the flaired landing as shown in photo, nose wheel has yet to touch the strip.

► Are you interested in a realistic twin engine control-line plane which will require a minimum of construction time and cost and will give excellent performance? The A-26 Profile Invader may be just what you have been looking for.

I have always appreciated the clean lines of the A-26 but since I specialize in stunt flying, I didn't feel that I wanted to take the time to build a regular scale model of the plane. The profile was the answer. Expense and construction time are kept to a minimum, and performance is better than the usual scale model due to lightness.

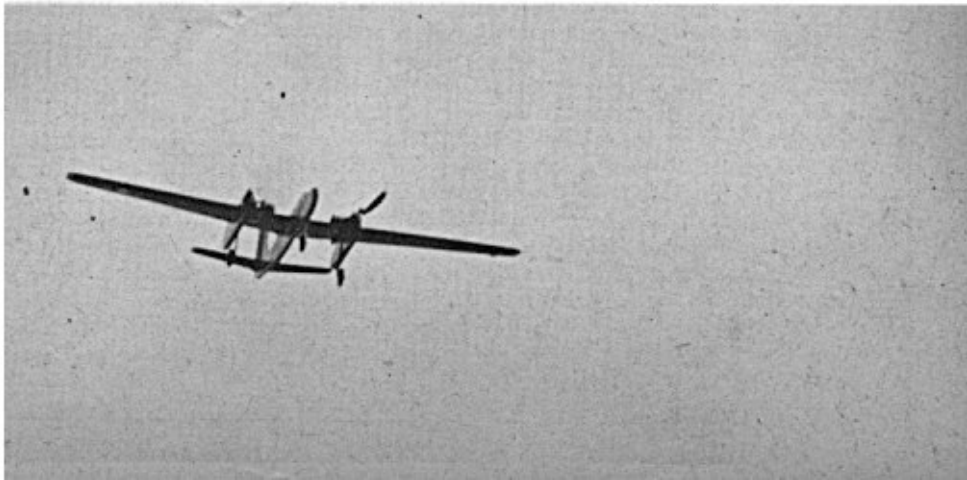
Two Enya .19 engines, with a top speed of 85 mph, were used in the original plane and found adequate. If weight is held to a minimum, there is no reason why this model cannot be successfully flown on two good .09's. The plane flies well on either of the two engines as can be seen in the photograph showing only the outboard engine in operation. Landings are fast, however unlike the usual scale model, the plane glides well and is completely responsive to the controls during landings. The addition of a simple throttle control unit will increase the versatility and realism of the model.

CONSTRUCTION:

Let's begin with the wing. Both right and left wing panels are identical except for the control system parts on the inboard (left) wing. I did not weight the outboard wing tip; however, you may want to add approximately one ounce of lead to insure tight lines. The wing may be constructed over the plans on a bench or board, or the "in hand" method of wing construction may be used. Cut the leading edge from ¾"x2" medium balsa. Notch out as indicated on the plans for rib locations. Use a knife or plane to taper the leading edge from ¾" at the root to ⅜" at the tip.

As shown on the plans, the control system may be mounted inside the wing for better appearance. If this is to be done, the easiest method is to construct the inboard leading edge of two layers of (*Continued on page* 60)

Proof of the fact that the Invader will fly on single engine only—inboard engine has cut.



Profile A-26 Invader

(*Continued from page 17*)

⅜" balsa. Groove the pieces to clear the front lead out wire and bellcrank, insert the wire and glue the pieces together.

Join the leading edges at the center with white glue or fiberglass resin. At the same time, attach the ⅜" plywood dihedral brace and let the entire leading edge unit dry thoroughly. Add the ribs, tips, and trailing edge; carefully align the trailing edge with the leading edge before cementing ribs permanently to insure a warp-free wing. Add the control system components and plank the center section as shown and your wing is complete.

Tail surfaces are cut from medium soft 3/16" sheet. Note that there is dihedral in the stabilizer. This necessitates the plywood dihedral brace at the center section. The center joint should be joined with fiberglass resin or white glue. Two control horns are required due to the dihedral, to avoid stiff controls. Refer to the fuselage side view and top view of the control hook up on the plans for the details of connecting the push rod to both control horns.

The fuselage and nacelles are cut from ½" medium balsa sheet. If this is not available in your area in 4" width for the fuselage, use a 3" width and splice a strip on the top. Fiberglass the ⅜"x½" hardwood nose wheel mount in place, and cut a groove to receive the landing gear wire held in place with epoxy.

Assemble the hardwood engine bearers and the plywood nacelle doublers with either white glue or resin. Note that the doublers are 12" long (the standard commercial length available in most localities); 1/16" balsa is used to fill in the remaining 3" of the nacelle. Round all corners as shown in the nacelle front view. When assembling the nacelle, be certain to mark the top and bottom for identification after the doublers are added. This is important since the landing gear is bolted through the bottom engine bearer for added strength. Cut the nacelle out to slip over the wing as shown. Make certain that the wing cut is parallel to the thrust line.

The various components are now ready for assembly. Slip the wing into place in the fuselage and fill any crevices with epoxy or resin. Attach the tail surfaces with resin or epoxy. Slip the nacelles in place and cement thoroughly with resin after being certain that alignment, both from a top view and side view, is correct.

Cover the wings, preferably with silk. Apply several coats of clear dope or balsa grain filler to all wood parts, sanding between coats. Several color schemes are available; I chose olive drab with yellow tips, although it is not particularly scale but it adds a dash of color to the model. Silver with red tips will result in a striking model, however silver will magnify any defects in finishing. A third alternative color is dark blue. I used a ruling pen and india ink for the flap outlines, ailerons. Add turrets and guns as shown on plans and photographs.

Throttle control may be installed if desired by using a Roberts bellcrank connected to any of the popular engine throttle systems on the market.

The size of the gas tank will depend upon desired flight duration. It is preferable to use a smaller tank on the outboard engine so that it will stop first. I used a tank of about two-ounce capacity for inboard engine and a one and one-half ounce tank for the outboard engine.

Balance the model as indicated by the CG position on the plans. Modify the CG position after flying to suit individual preferences—add weight to the tail for more maneuverability; add nose weight for more stability.

Check the model thoroughly before flying for free control action, proper tire tracking. Make certain there are no loose parts which will cause vibration during flight. The most efficient method of starting will depend upon the characteristics of the engines used. If the particular engines used start better when hot, pre-run each engine individually prior to flight. Start the most critical engine first and have an assistant keep the tank full until the second engine is running. Fill both tanks completely just prior to takeoff. Let the model pick up speed before applying very slight up elevator for the lift-off. If the model has been built correctly, no flight difficulties should be encountered.