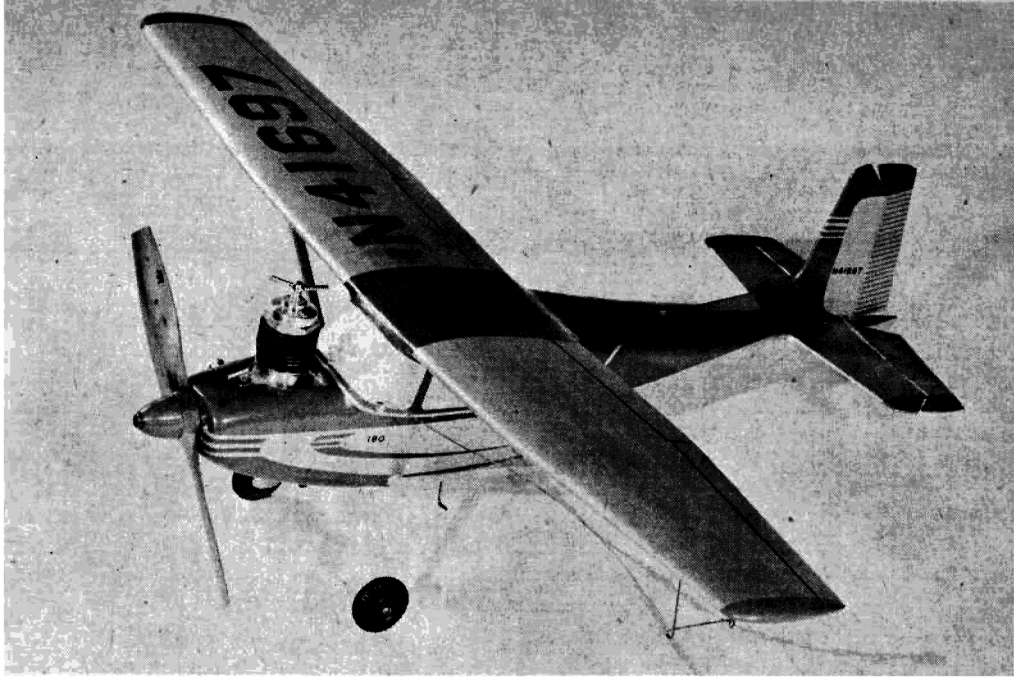
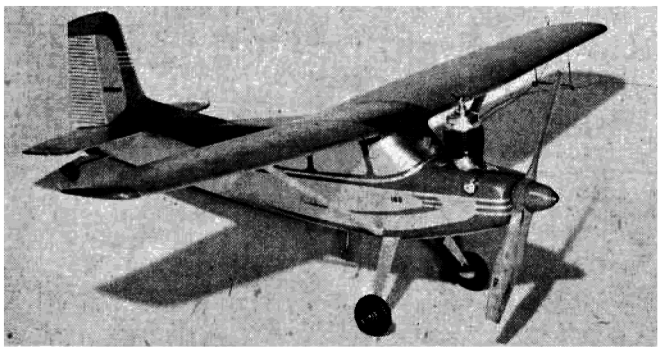
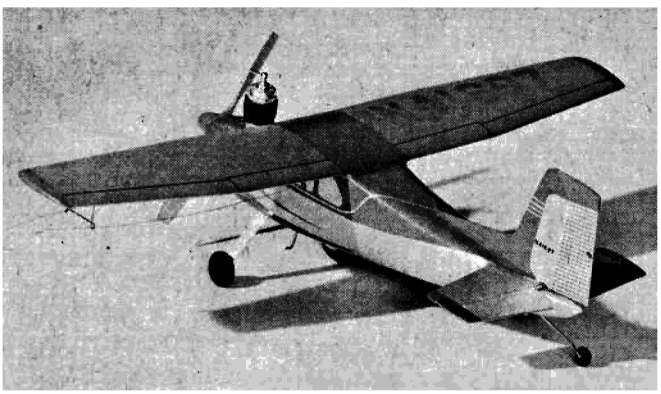
Restored by Hlsat.

Right: The clean lines and simple contours of the prototype made this an ideal candidate for modelling. Note the accessibility of the engine and the filler vents on the tank. Though small, this model is not overcrowded or jammed with parts.

Below: The Cub .075 diesel fits snugly within the neat cowling. Note how the needle valve clears the side of the model so that adjustments can be made on it without the use of an extension. This isn't typical of most cowls.







Above: This distinctive model is ideal for small engines and small flying fields. Full-size plans make it easy to duplicate the original, including the authentic Cessna color scheme. It's a sport model that will give you many hours of pleasure for a few hours of building time.

CESSNA 180

by Walter A. Musciano

The latest Cessna, the 180, makes an ideal control-line model suitable for all engines from .035 to .075.

● The newest addition to the famous Cessna family of fine airplanes is the "180." This all-metal, four-passenger airplane is powered by a 225 h.p. Continental air-cooled, opposed engine. Externally, the "180" presents a strikingly modern appearance, with the large angular fin and rudder, and long dorsal fin. The Cessna one-piece spring steel landing gear also enhances the appearance as does the neat, streamline nose. A constant speed propeller gives the craft a cruising speed of 150 m.p.h. for four and one-half hours duration. Luggage capacity is 120 lbs. One of the features of this Cessna "180" is the "para-lift" flaps. These flaps decrease the already low landing speed by 10% and are extremely valuable for short-field take-offs.

In model form this craft is most attractive, with its flashy red and silver color scheme. The prototype model, built to a scale of ½" = 1', is powered by a Cub Diesel .075 engine. Performance was quite lively but comfortable with this power plant. Any glow plug or diesel engine of from .035 to .075 cubic inch displacement can be used successfully in this model.

FUSELAGE: Begin construction by cutting the fuselage to shape from 3/16" soft sheet balsa. Bevel the rear of these sides and cement together, as the top view indicates.

While this is drying, the fuselage former "C" can be fabricated from hard 1/16" sheet. Cement this between the fuselage sides and gently pull the sides together until they are parallel. It may be necessary to wet the outer surface of the fuselage sides in order to have them bend easily.

The landing gear foundation and bellcrank support are used to hold the fuselage sides at the correct distance apart. Apply plenty of cement to all these joints.

Cut the bulkhead to shape at this time. If the engine you intend using has an attached fuel tank, it will be necessary to cut a hole in the bulkhead to accommodate it. The bulkhead is then cemented in place, using plenty of the adhesive.

Add the .016" music wire lead-out lines to the small bellcrank by twisting the ends. Bend the control rod to shape and pass this through the fuselage slot. Slip the lead-out lines through the holes, fasten the control rod to the bellcrank, and then screw the bellcrank to the hardwood bellcrank support.

Install the fuel tank next if it is of the unattached type. Make certain it is firmly attached.

We utilized a spring steel landing gear in the same manner as the full scale Cessna "180". This can be cut with a pair of tin snips from a heavy corset stay or an old hacksaw blade, following the pattern on the plan. Bend this to shape with flat-nose pliers, being sure not to bend and rebend one joint too often—this material is brittle. Drill holes as required and bolt the wheels to the strut.

It will be noted that only one nut is used instead of the conventional two. This was done to maintain a scale appearance. Do not tighten this an excessive amount, be sure the wheel turns freely. Then, solder the bolt and nut to the landing gear strut. Make certain

CESSNA 180

these are well heated before solder is applied, to insure a good, firm job. Screw the landing gear assembly to the plywood foundation. Add the fairing.

Cover the top and bottom of the fuselage next. Note that the grain of the forward lower covering runs spanwise. This was done in order to facilitate bending the sheet to fit the fuselage curve. Add the soft balsa blocks for the cabin front and fuselage nose. When thoroughly dry, carve and sand the fuselage to shape. This is quite simple—it merely consists of rounding off corners. Cut the slot for the stabilizer.

TAIL SURFACES AND RUDDER: Cut the tail surfaces from very hard 1/16" sheet balsa. Sand well and join the elevator by means of the 1/16" dowel. Add the standard commercial horn, and hinge this assembly to the stabilizer, using cloth strips. Connect the control rod to the control horn and cement the stabilizer to the fuselage. Check the controls for free movement. Cement the fin in place atop the fuselage and add the rudder, being sure to offset it as the top view illustrates.

WING: The wing is very simple to construct. Cut out the plywood joiners. Shape the leading edge taper as the front view indicates, and cement the leading and trailing edges to the joiners, thereby forming the correct dihedral. Cut the wing ribs to shape and sand smooth.

Pin the leading and trailing edges to a flat board over the plan, one half at a time because of the dihedral. Cement the ribs between the leading and trailing edges, being certain to follow the taper in the leading edge. This will require some blocking. Use plenty of cement. Add the solid wing tip.

When the entire wing is complete, it should receive a thorough sanding after the leading edge, trailing edge and tips have been carved to shape. Cover the wing with silkspan, water-shrink, and apply four coats of clear dope.

When completely dry, the wing can be firmly cemented to the fuselage and the music-wire control-line lead-out wire guide installed. Bend the loops first and then push the ends through the wing at the location shown. Carefully form the return bends or hooks and force these into the wood. Cement well and slip the lead-outs into the loops.

FINAL ASSEMBLY: Carefully cut off the cowl and install the engine, using roundhead wood screws. Hollow the cowl a little at a time until it clears all parts of the engine by at least 3/32". An easy method for determining exactly where to hollow the cowl is to force the cowl slightly against the engine, so as to make an impression on the cowl interior. Hollow where the impression is formed. Repeat as required.

Cut holes to make the intake opening and needle valve accessible. Apply three coats of fuel-proofer to the cowl interior and cement it to the fuselage with droplets of fuel-proof cement.

FINISHING: Sand the entire plane lightly and fillet all joints with cement. All wood surfaces should receive at least two coats of wood filler. More can be applied if desired. Sand well after each coat is dry, using 3/0 sandpaper.

Color the entire model with silver dope. Two coats should suffice. When this is dry, outline the red areas, illustrated on the plans and photographs, using paper masking tape—available at most hobby shops. Paint the red areas and carefully remove the tape when dry.

The smaller, more intricate designs can be cut from red decal paper and attached in place. The control outlines and door are ruled onto the model with an inexpensive draftsman's ruling pen and India ink. Cut, sand and paint the wing strut and cement in place. Add the miscellaneous details, like the step and exhaust stacks, at this time.

The entire model should receive one coat of clear fuel-proofer.

ADJUSTING & FLYING: We used a 6" diameter 4" pitch Tornado propeller cut down to 5½" diameter. A solid aluminum Scientific spinner fits this model perfectly.

Be sure the model balances as shown. We had to add a very slight amount of weight to the tail to compensate for a hard balsa nose, only slightly hollowed. However, if built as the plans show, with a well-hollowed soft nose, no weight should be required.

Twenty-five foot lines of heavy carpet thread were successfully used in flying our Cessna "180" model. Fly from a smooth surface if possible and always take off down-wind in order to give the model time to gain sufficient speed before becoming airborne. If your model weighs over 6½ ounces a slight amount of "leading" may be required when landing. Our Cessna was very easy to fly and required no adjusting after the initial flight.

BILL OF MATERIALS
(Balsa unless otherwise indicated)

1—3/16" x 2" x 36" (soft)	Fuselage sides, top & bottom wing tips
1—1/16" x 2" x 12" (hard)	Wing ribs and former "C"
1—1/16" x 1' x 4" (plywood)	Wing joiner
1—3/32" x 2" x 3" (plywood)	Bulkheads, landing gear foundation
1—1/4" x 1/2" x 18" (medium)	Wing leading edge
1—3/16" x 1/2" x 18" (medium)	Wing trailing edge
1—2" x 2" x 2" (soft)	Nose block; cabin front

Small sheet Silk-Span; .040" x 18" music wire; Small bellcrank; Small elevator horn; Aluminum spinner; .016" x 24" music wire; 2 oz. sanding sealer; 2 oz. silver dope; 1 oz. red dope; Pins; Wood screws; Nuts and bolts; Cement; Solder; 3/0 sandpaper; 2 oz. clear dope; 2 oz. fuel proofer; Corset stay or old hacksaw blade; Cub Diesel .075 or similar .035 to .075 engine.