



# ALCO SPORT

By BERNARD SHULMAN . . . A simple model of an all-but-forgotten homebuilt from 1920. It would be a good choice for your first Peanut.

- In 1920 the Allison Airplane Company at Lawrence, Kansas started selling plans and parts for a small sport monoplane. The aircraft was to be powered with less than 65 hp and carried one or two people.

The model is shown with a Lawrence two-cylinder 28 hp engine. For more details on the Alco Sportplane, see the 1930 Flying and Glider Manual. Copies of this and other books can be obtained from the Experimental Aircraft Association, P.O. Box 229, Hales Corners, WI 53130.

The model Alco follows the full-size aircraft in construction. The only deviation from scale is the addition of dihedral to the wing, and the landing gear is longer. The wing, stab and rudder area are scale.

Construction is simple and standard. The right and left fuselage sides are *not* the same in the cabin area. The left side is cut down for access of the pilot and passenger. Note the details on the plans.

Start construction by building the fuselage sides over the plan. Build one on top of the other. When dry, remove from plans. Glue the tail post together and add cross braces at the cabin. Add the rest of the cross braces from the cabin to the tail. Let dry. Bring the nose together and add cross braces. Add the soft balsa nose cowl block and hollow out as shown on plans. Put in the 1/16 sheet on bottom of fuselage for tail skid. Sand the fuselage smooth. Bend the landing gear from .020 wire; be sure to bend one right and one left. Glue the wire to the front of the forward and back of the rear bottom cross braces. Add a 1/16 sq. cross brace to hold wire in place in front and rear of wire respectively. Glue very soft 1/32 sheet balsa in place on sides and bottom. Sand very thin and blend into the sides and bottom.

From 1/32 plywood, cut out nose former F-1 and engine mounts. Cut out F-2 and glue to back of F-1. Be sure that F-2 is a snug fit into front of fuselage.

Glue the engine mounts to F-1 and sand smooth.

Build the Lawrence engine from balsa. Williams Brothers cylinders can be used and will help balance the model. The engine should be painted flat silver. Glue engine to mount. Fill space in back of engine with balsa.

The wing is built by cutting out 15 ribs from 1/32 balsa. The center rib is cut flush with back of front spar, and is added when putting in the dihedral. Pin the 1/16 x 1/8 trailing edge down. Pin down the 1/16 sq. spar. Glue the ribs in place (do not put center rib in at this time). Glue the 1/16 x 1/8 leading edge on. Add wing tips. Allow to dry. To add the dihedral, sand leading and trailing edges at the root. Prop up one wing tip 1/4 inch. Glue in the center rib. Add 1/16 sheet fill in front of center rib on top of spar. Sand wing smooth.

The tail is built from 1/16 sq. balsa. Leading edge of rudder is cut from 1/16 sheet.

Cover model with white tissue. Wet with water. Give wing and tail one thin coat of low-shrink clear dope (Sig Lite-Coat is very good). The fuselage should get two or three thin coats of dope. With thin black tissue strips, outline the control surfaces.

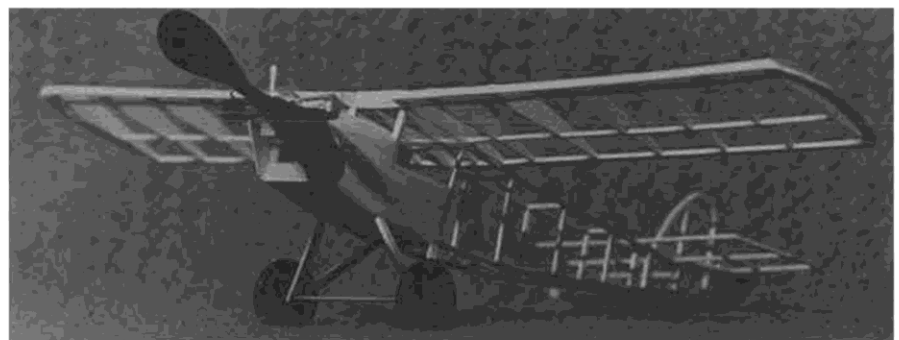
Glue wing to top of fuselage. Add stab and rudder. Be certain that parts are

aligned. The wheel axle is a 1/16-inch O.D. aluminum tube. Glue the tube to the landing gear. The landing gear struts are cut from 1/16 x 1/8 balsa. The balsa struts will hold the tubing in place. Add the wing struts from 1/32 x 1/8 balsa. Put a pin through each wheel. A slight bend should be put in the pin, then pushed in to the end of the tubing. Cut a hole for tail skid and glue in place.

From what I have read and photos I have seen, there are no numbers or markings on the Alco Sport.

Flying the Alco is no trouble. The original model needed no weight to balance. Use a plastic prop of 4 to 4-1/2 inches. Check the model for warps. If warped, remove with steam. Check balance as indicated on plans. With the rubber motor in place, start with about a 7-inch loop of 1/8 rubber. Put in about 25 to 50 hand winds. The model should fly level with a slight hint of left turn. Add more winds and check flight. If model stalls, add a very small amount of down thrust. Keep adding down and side (left) thrust as needed. A small amount of left rudder can help take out a stall. After model is flying okay, add a longer motor. Use rubber lube and a mechanical winder. Be sure to recheck the balance.

Make only one adjustment at a time. This is the first rule of free flight. Go slow with the adjustments, and the Alco will give many hours of enjoyment. •



Framework shot of the Alco reveals a framework about as simple as you could ask for. Structure looks a bit stout, could probably be lightened for indoor-only flying.