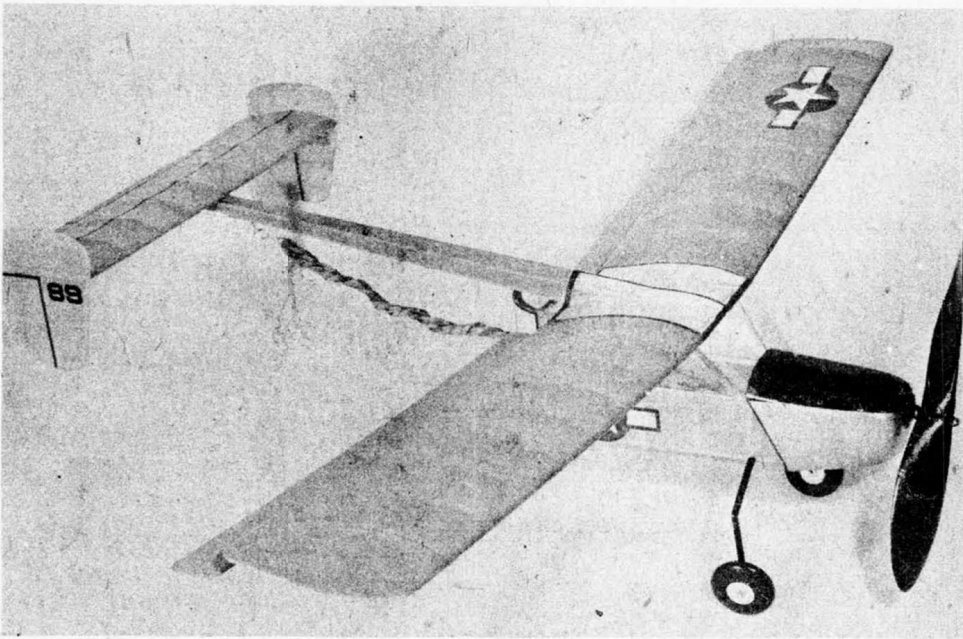


BUILD THE BOEING L-15A



Rubber passes through hole in fuselage rear window. Note straight wing and stab.

● Here's a most unusual flying scale model, the Boeing L-15A. One quick glance at the photographs of the plane will tell you that the L-15A has the most unorthodox configuration of any service aircraft today. Truly the plane resembles a "flying bath tub" with a tail boom. But no matter how unusual the design, it is the most efficient liaison type in the world. The L-15A was expressly designed and built to provide the versatile performance needed by the Army Ground Forces for observation, range-finding and liaison missions.

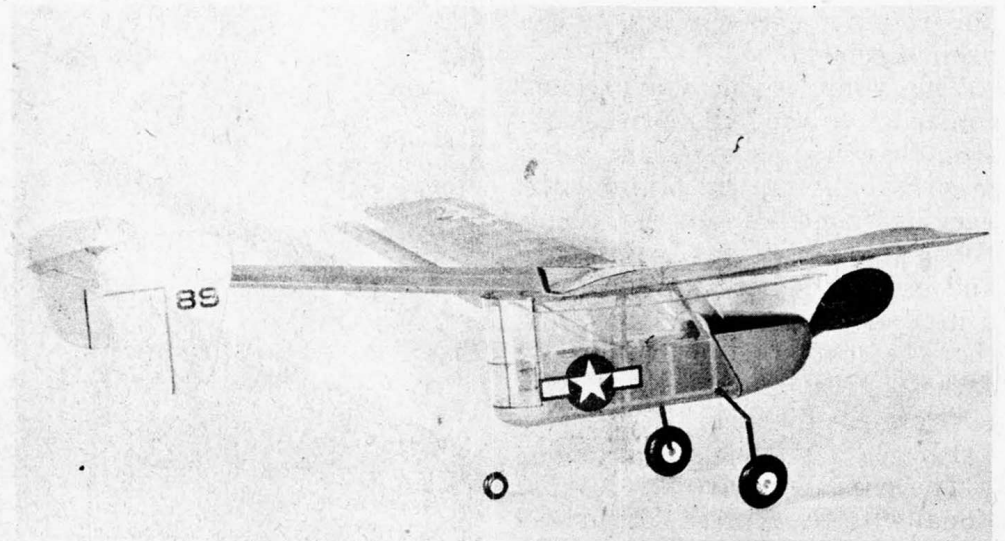
Powered by a 125 horsepower Lycoming engine, this little plane cruises at 101 miles per hour, with a total range of speeds from 50 to 112 miles per hour. The gross weight is just under 2,050 pounds and the useful load is 541 pounds. Wing span is 40 feet even and the length is 26 feet.

As the subject for a flying scale model, the L-15A leaves very little to be desired. The high wing and stabilizer, twin rudders, long moment arm, and the C.L.A. position all add up to a stable, dependable

flying model. Equally important is the ease of construction and ruggedness. The use of wing flaps has made the flight pattern quite varied. With the flaps in the down position, the model has a slow forward speed but the climb is like an escalator—straight up! And with the flaps in the normal or zero position, the flight path is quite conventional, with a floating glide.

The model was originally designed as a rubber-powered model but its 30" wing span lends itself

Wing flaps make many new and exciting flight patterns possible with the L-15A.



very nicely to CO₂ power. The necessary modifications are shown in the plans. Note that it is necessary to run the rubber motor out through the back window of the fuselage to hook onto the end of the tail boom. Of course when you have the model on display, you can remove the rubber motor. Incidentally, don't fret about the slender tail boom, it has been tested under fourteen strands of 1/8" flat rubber fully wound with no ill effects.

Due to the size of our pages, plans must be presented one-half size, except for the wing and stabilizer ribs which are full-size. The graphs on the plans are all 1/2" squares, so the enlarging job really isn't too bad. But enough talk, let's get to the pleasant task of building the L-15A.

Build the fuselage over full-size drawings of the side view. Use firm grade 1/8" square stock to make the basic fuselage framework. Build two sides, one directly upon the other for perfect alignment. When dry, remove from the plans and connect with 1/8" square cross members. Note that the extreme top portion of the fuselage under the leading edge of the wing is pushed out slightly over the rest of the fuselage. This outward

A flying scale model of the Army's liaison plane using rubber or CO₂ engine.

by Dick Struhl

slant of the windows gives the pilot much better ground visibility.

Cut the fuselage bulkheads from 1/16" sheet and install in their proper locations. The 1/16" square bottom stringers are now added. Cut the nose block from medium grade balsa and hollow it out before cementing in place. Now add the 1/32" sheet covering to the nose. If you do not care to cover the nose all at one crack, add a few 1/16" square stringers to the nose bulkheads and use smaller pieces of sheet covering.

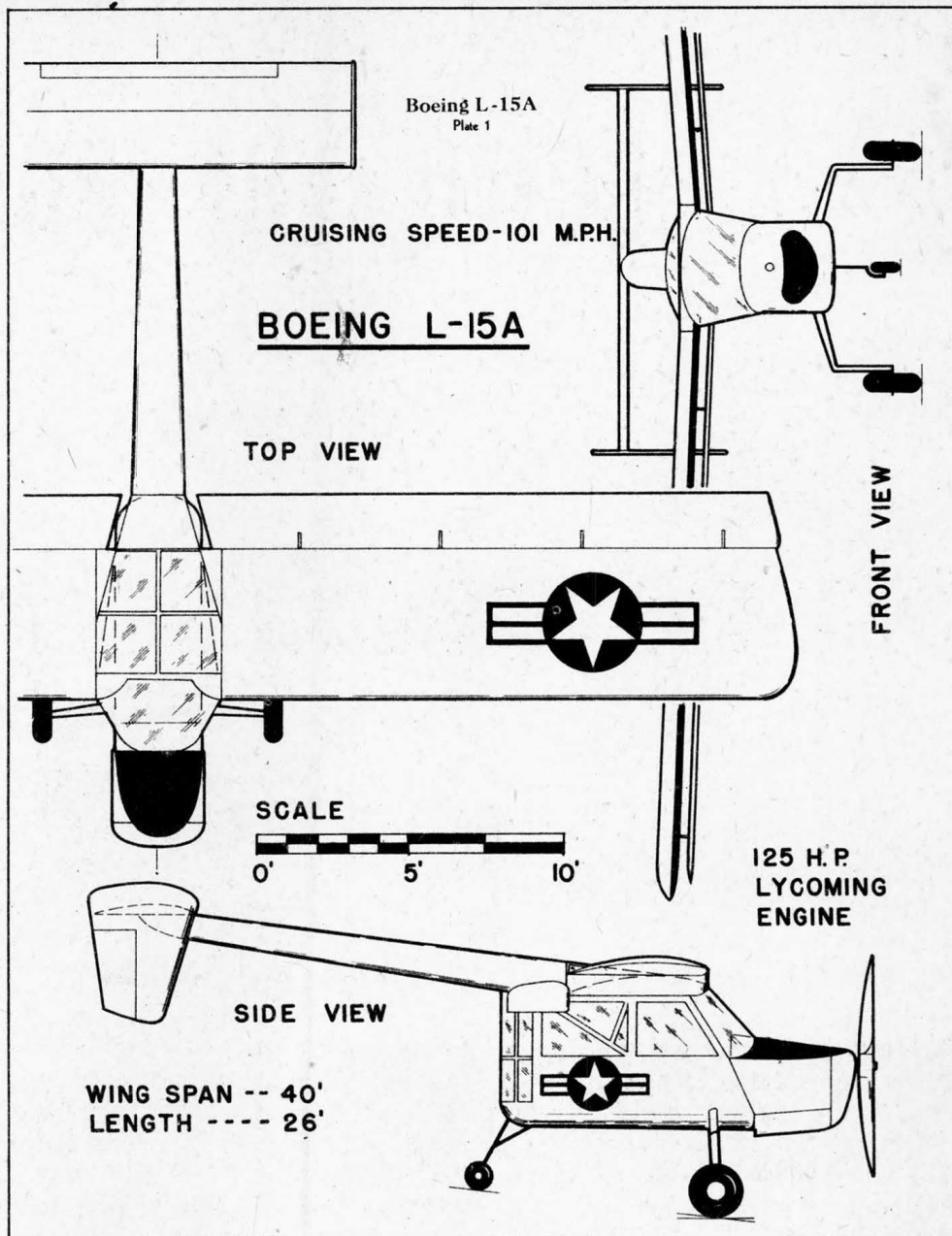
Carve the rear fuselage block to shape from soft balsa and cement in place. Do not add the celluloid windshields until the model has been covered and assembled. Bend the landing gear to the shape shown, from .040 steel music wire, and bind in place with thread and several coats of cement. Add the small gusset.

The main landing gear strut is backed up by 1/16" x 1/8" balsa strips sanded to a streamline cross-section. The rear landing gear strut is .040 wire and is attached to the rear fuselage block. The main wheels are three-ply 1/8" sheet balsa cut to 1 5/8" diameter, the rear wheel is 1 1/16" diameter from 3/16" sheet balsa. Cement a washer to each side of the wheels and retain them in place with a drop of cement.

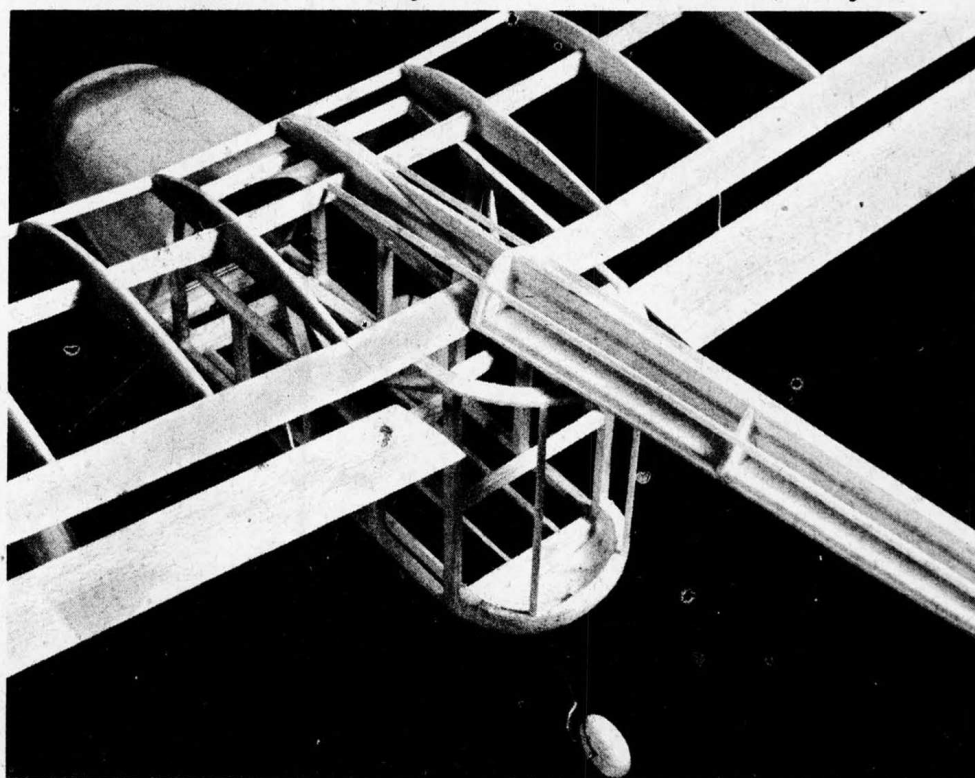
The wing is of conventional construction and is built over full-size drawings. The entire wing may be built flat by pinning the various members on the plans. When the cement has set, remove and install the necessary 2" dihedral under each wing tip. Note that the center section is flat and covered with celluloid. It is wise to brace the dihedral breaks with 1/16" sheet gussets and braces.

The wing flaps are strictly optional with the builder. The model was flown

FLYING MODELS



Main construction before covering. Note boom sandwiched into center wing ribs.



Boeing L-15A

without the flaps and the results were, as would be expected with a reduction in wing area, increased speed, reduced climb and steeper glide, etc. So for top-notch performance we advise their use. The flaps are cut from light 1/16" sheet

balsa and sanded to an airfoil section as shown in the plans. Attach to the trailing edge of the wing with soft copper or iron wires. Milady's hair pins are excellent for this, as they are flexible enough to be adjusted many times.

The tail boom is now made and set in place. Note that the tail boom keel is cut from hard 1/16" sheet balsa and installed in place between the two inner-

most center section wing ribs. Cut the side pieces from 1/16" sheet and cement them in place along the keel sides and to the top of the trailing edge, as seen in the sketch. Add the tail boom bulkheads and then the four 1/16" square stringers.

Note that the top stringer is butt-joined to the wing spar. The rear hook is shaped from

BOEING L-15A

.040 wire and cemented in place behind bulkhead "H". Using a needle and thread, sew right through the keel to bind the hook in place. Apply four coats of cement at this section.

The tail surfaces are built over full-size drawings. The rudder is cut from 1/16" sheet stock and is flat in cross section. Two are required. Build the stabilizer in the same manner as the wing.

The entire model is covered before assembly. Use red silkspan for the cover medium. Apply with clear dope and use water to shrink tight. Brush one thin coat of clear dope on the wings and tail and two on the fuselage. Cover the cabin and the wing center section with thin sheet celluloid. Cut a smooth-edged hole in the rear window to allow passage of the rubber motor. Apply decal insignia and black dope control surface outlines and other details as you see fit.

Assemble the model by cementing the wing firmly to the top of the fuselage, attaching the windshield and then cementing the stabilizer in place. Form a cement fillet between the tail boom and the stabilizer. Now cement the two rudders in place.

Carve the propeller from the block shown in the plans. Use .040 wire for the prop shaft, a ball-bearing washer, and a hardwood nose plug for the nose bearing. It is wise to employ some type of free-wheeling device.

Eight to ten strands of 1/8" flat rubber should be right for most models, but with different weight ships this may

vary. Lubricate the rubber with a mixture of tincture of green soap and glycerine to attain most power and longest life from the rubber motor.

Careful handling and correct adjustment are required to get maximum flight performance from any model. Select a place where the ship will not get damaged while flying it—a tree or the side of a house is hardly a suitable place.

First make shoulder-high test glides, adding weight to nose or tail to correct the center of gravity position. Fine adjustments may be made with the flaps. Try a few turns on the rubber motor at first, then gradually increase the number of turns as flights improve. Offsetting the thrust line is an effective way of adjusting against unstable power flight attitudes and controlling the amount of circle under power.

Just a word about the CO₂ version. Notice that the nose is slightly shorter than the rubber version and a 1/16" sheet plywood firewall has been added to act as engine mount. The bottom of the fuselage is carved from soft balsa and then hollowed out. Locate the cartridge holder one inch behind the wing spar to balance the model. Cut a hatch in the bottom to allow replacement of the "fuel". The wing spar and stabilizer spar should be 1/8" stock rather than 1/16" as in the rubber ship. Use the recommended 8" propeller of 4" to 6" pitch.

Treat your L-15A with care and you will be rewarded with a fine, attractive flying miniature.