

Douglas Mailplane

Free flight flying scalars are coming into their own; here's an oldie and a goodie for Half-A fans

By WALTER A. MUSCIANO

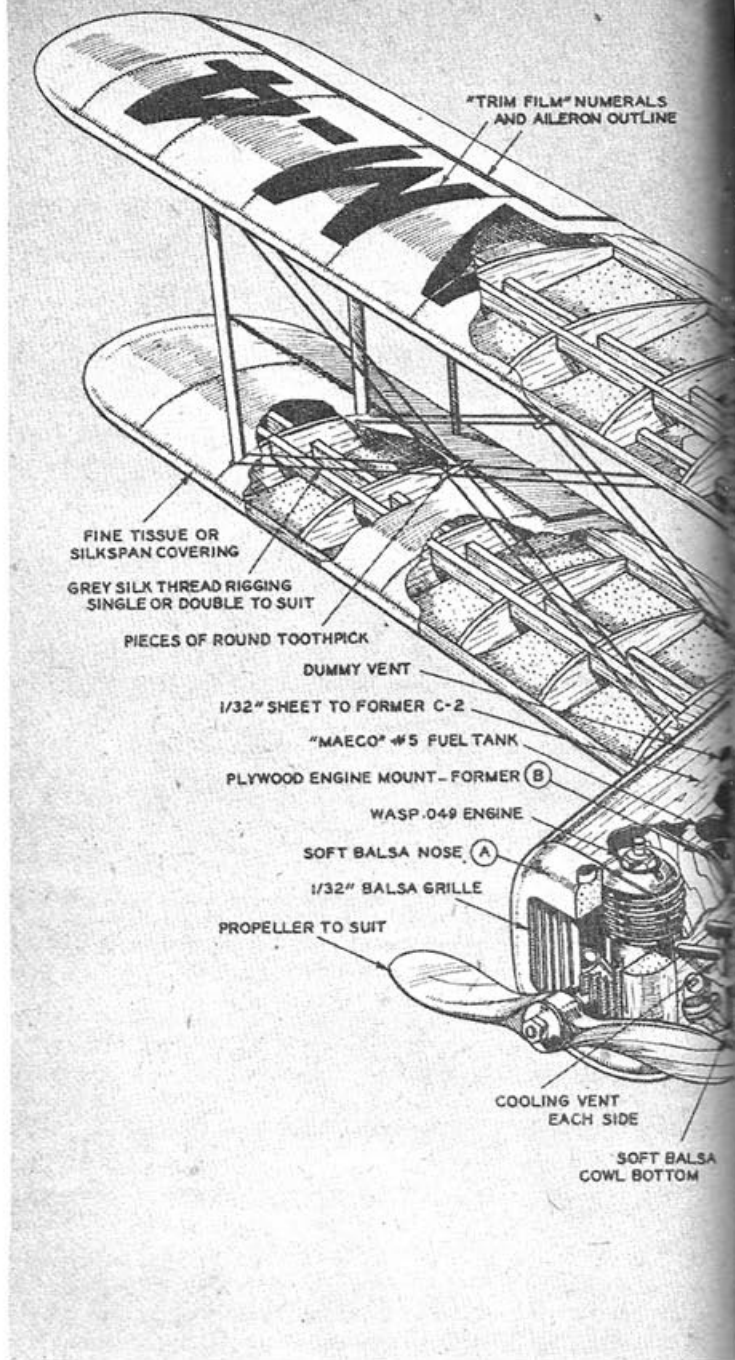
■ We were attracted to this "old timer" by its excellent qualifications for free flight model performance with either rubber or Half-A engine. Both .049 and .099 engines are illustrated in beam and as well as bulkhead mountings. Instead of using a fuel shut-off mechanism, we put in a Maeco No. 5 transparent flight tank which gives a run of 25 to 30 seconds for some real flying of this 234-square-inch-wing-area model. . . . We thank Messrs. Don Black and Chet Miller of Douglas Aircraft Co. for their cooperation in supplying information on the prototype airplane.

Sand all balsa before it is cut and assembled. This pre-sanding removes nap and eliminates some weight that is neither structural nor an asset to appearance. The fuselage basic sides are cut from sheet balsa and followed by the formers. Cement the sides to each other at rear and attach former "F" in place. When dry, cement the remaining formers in place including the plywood bulkhead engine mount or beam mounts. Bend the fine music wire cabine struts and cement them rigidly to formers "D"

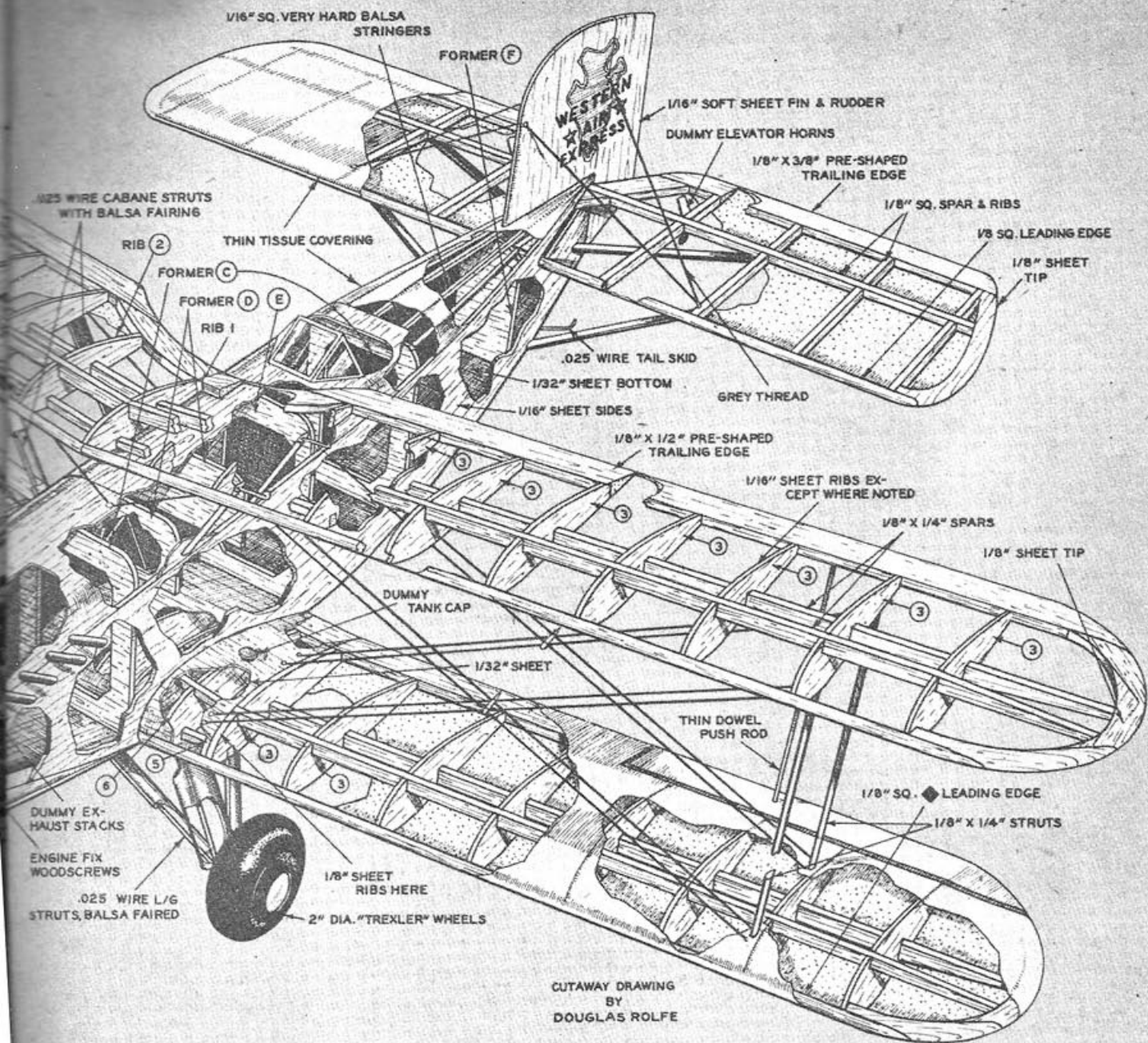
Add the nose block, then the 1/32" sheet covering of fuselage top. Add the 1/16" square stringers to turtledeck. They are cemented directly to top of the formers and not set in notches. The turtledeck is covered with very fine tissue.

To install landing gear we must first construct the lower wing center panel. This was used as gasoline tanks on the full-scale plane which accounts for its thick section. Cut spars and ribs from sheet balsa and pin spars to the work table. Cement ribs to spars, followed by the leading edge. Bend the landing gear, solder all joints lightly. Bind the gear assembly to the spars, cement well. The center section is covered with pre-sanded 1/32" sheet and cemented to fuselage. Install fuel tank and pass engine fuel supply line through bulkhead (bulkhead mount only). Fuselage bottom aft of the wing is 1/32" sheet covered while that portion forward of the wing is carved from a very soft balsa block and hollowed. Sand entire fuselage lightly.

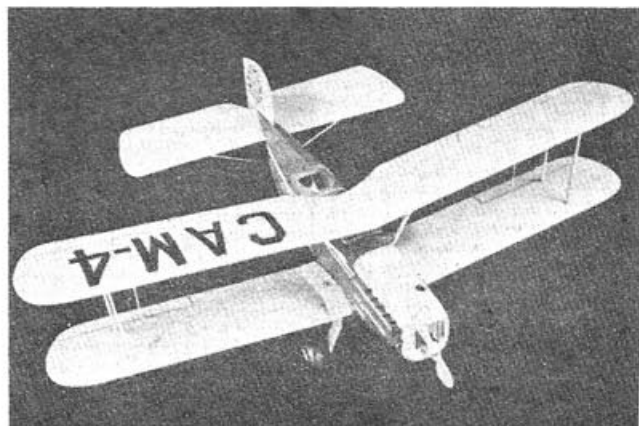
Pin the stabilizer structure to work table and cement all joints liberally. Remove and sand well. Recement joints and cover the structure with light-weight tissue, using dope as adhesive. Pin stabilizer to the work table again and (Continued on page 49)



One of first specially designed mail carriers, the 400 hp "Liberty 12" powered M-2 did 145 with 1,000 lbs. of mail—a fast job then.



Operating coast to coast in 1926, the Douglas cruised at 125 mph and landed at 52 mph. Cruis. range 750 mi.; plane weighed 4,300 lbs.



Engines from .049 through .099 cu. in. displacement can power the Mailplane. Very realistic flights will result with the small motors.

water the tissue lightly. When thoroughly dry and taut, the covering should receive two coats of plasticized dope (three drops of castor oil to each ounce of dope).

Repeat this procedure for the other side of stabilizer. Dope should be very thin. The vertical fin is very soft 1/16" sheet balsa sanded smooth. Cement stabilizer to the fuselage at the correct incidence angle; follow with the vertical fin which is cemented to both the fuselage and stabilizer. The tail bracing and thread rigging are added at this time to prevent the empennage surfaces from warping out of shape.

(Further construction details may be found on the full-size plans available.)

Rubber-Powered Douglas M-2

Those modelers who have cultivated a taste for the absorbing sport of rubber-powered flying scale models will be quick to recognize the basic requirements for rubber jobs in our Douglas Mailplane. The long nose is one of these outstanding requirements. Using a 3/16" dia. birch dowel as the motor rear anchor and 1/16" wire for the propeller shaft spinning a 9 1/4" dia., 2" wide blade propeller, the M-2 should turn in some sensational flights.

The rear rubber motor anchor should be located 1/2" above the fuselage centerline and 5/8" forward of former "F"; this setting will automatically result in downthrust without the usual shaft vibrations. Twelve strands of 1/4" flat T-56 rubber with slack should do the trick as far as power is concerned. It is suggested that the structure be lightened somewhat for rubber power; use 1/8" square spars and sand the 1/16" ribs to about 1/32" plus; wing tips can be 3/32" sheet while the basic fuselage sides can be cut from firm 1/32" sheet balsa.

Needless to say, colored dope should not be used and by all means use a ball-bearing propeller washer and lubricate that rubber!

Bill of Materials

Fuselage. 1 pc 1/16" x 3" x 36" medium balsa, sides & formers. 1 pc 1/32" x 3" x 18" soft balsa, top & bottom. 1 pc 3/8" x 2" x 8" soft balsa, nose block & nose bottom. 1 pc 1/16" x 1/16" x 36" rock-hard balsa, turtledeck stringers. 1 pc 1/8" x 2" x 2 1/2" plywood, bulkhead engine mount.

Wings. 4 pcs 1/8" x 1/4" x 36" medium balsa, spars & struts. 1 pc 1/16" x 2" x 36" medium balsa, ribs. 1 pc 1/8" x 2" x 18" medium balsa, tips & ribs. 2 pc 1/8" x 1/2" x 36" medium balsa, trailing edge. 1 pc 1/32" x 2" x 24" soft balsa, center section covering. 2 pc 1/8" x 1/8" x 36" medium balsa, leading edge, auxiliary spars.

Tail. 1 1/2 pc 1/8" x 1/8" x 36" medium balsa, structure. 1 pc 1/8" x 4" x 2" medium balsa, tips. 1 pc 1/8" x 3/8" x 18" medium balsa, trailing edge.

Miscellaneous. Tissue or light Silkspan, clear dope, colored Testor's dope, Tuff fuel proofer, Trim Film, cement, thread, brushes, sandpaper, .025" music wire 36"