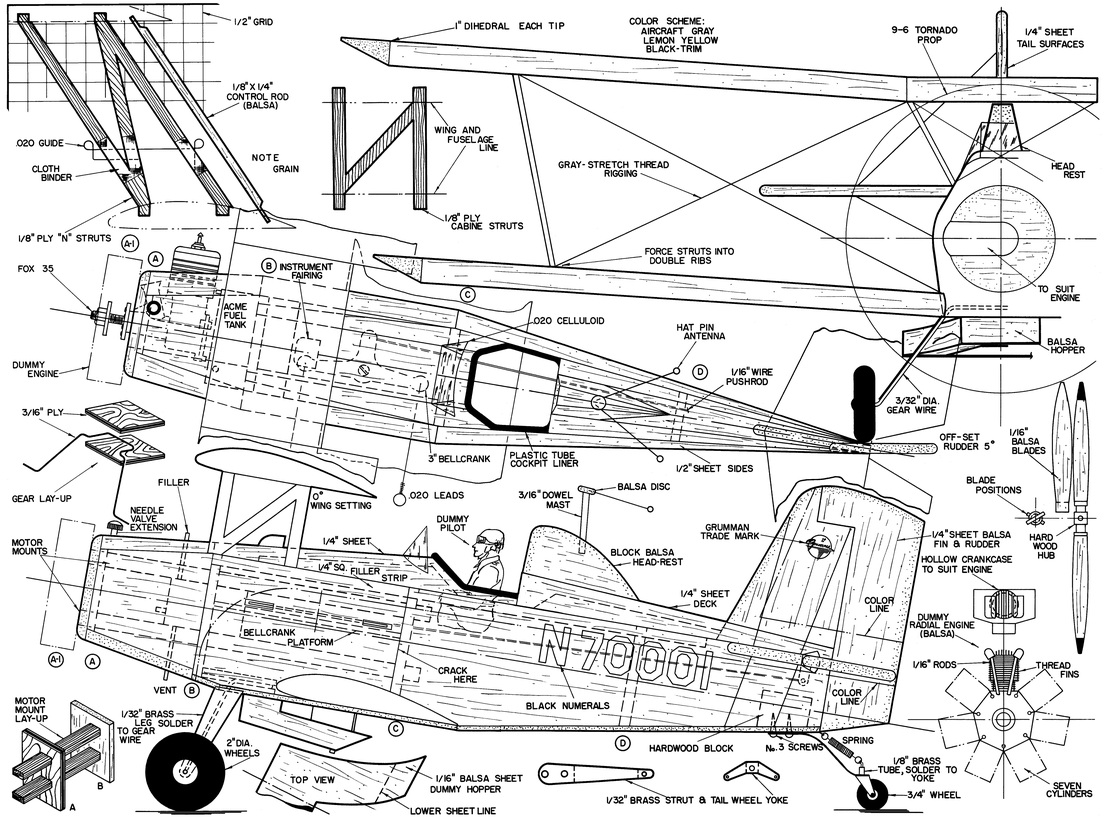

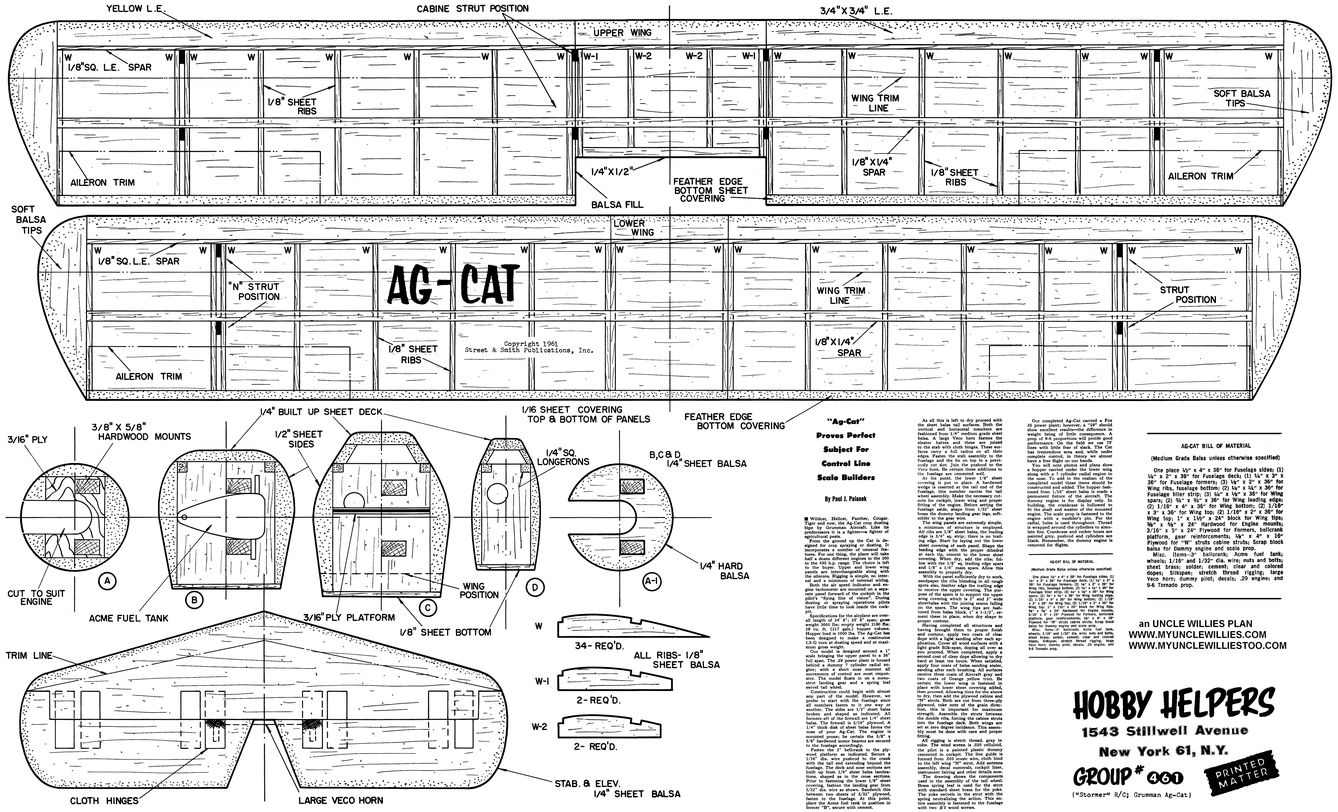

"Ag-Cat" Proves Perfect Subject For Control Line Scale Builders

By Paul J. Palatnik

■ Wildcat, Holiday, Panther, Cougar, Tiger and now, the Ag-Cat crop dusting biplane, are the latest entries in the competitiveness in a diminutive fighter or agricultural power.

The Ag-Cat, patterned by the Cat in designed for crop spraying or dusting, is a fine subject for control line scale enthusiasts. For one thing, the plans will take you through a complete cycle from the time the kits is begun, through the flight and to the hanger. Upper and lower wing panels are interchangeable for crop dusting or spraying operations since have little time to lose inside the cockpit.

Specifications for the airplane are some of the highlights of the Ag-Cat. Its wing span is 24", and gross weight 2 lbs. 8 oz. (1 1/2 lb. is ballast), leaving 22 oz. for the airplane. Wing loading is 18 oz. per foot, designed to make a continuous flight with the power speed and at minimum speed.

Our model is designed around a 1" bore Veco Cougar engine, with a 1" stroke full span. The 28 power plant is turned behind a dummy 7 cylinder radial engine. Its cylinder head and crankcase are dummies of control are mounted on the. The metal floats in a conventional fashion, with a spring leaf mount leaf mount.

Construction could begin with almost any part of the airplane, but it would be better to start with the fuselage since all members fasten to it one way or another. The fuselage is a box structure, broken and shaped as indicated. All formers off of the formed are 1/4" short of the fuselage length, to allow for the 1/4" thick deck of sheet balsa being cemented on top of the fuselage. Formers are numbered from the rear, the 1/2" x 1/2" hardwood mount formers are second and third formers.

Formers the 1" hardwoods to the plywood mounts are cemented in place. 1/16" dia. wire pushrod is the crank with the tail and extending beyond the fuselage. The fuselage is completed with both by from 1/4" sheet balsa bottom, shaped as in the cross sections. Cut the sheet balsa to fit the top of the covering, leaving the landing gear from 1/16" dia. wire as shown. Sandwich this sheet balsa between the 1/4" hardwood formers to the fuselage. At this point, place the Acme fuel tank in position in former "B", secure with cement.

As all this is left to dry proceed with the sheet balsa tail surfaces. Both the fin and the rudder are constructed of balsaized from 1/4" medium grade sheet balsa. A large Veco horn fastens the rudder to the fuselage. The rudder is fitted to the stab with cloth hinges. Trim surfaces are cut from 1/4" sheet balsa and edges. Fasten the stab assembly to the fuselage. Cut the 1/4" sq. balsa to fit the stab and fasten in place with cement. Veco horn. Do certain these additions to the stab are in proper alignment.

At this point, the lower 1/8" sheet covering is put in place. A hardwood mount is cemented in place on the fuselage. Use extreme care in locating the wheel assembly. Make the necessary cutouts in the lower sheet covering for the fitting of the engine. Before fitting the fuselage sides, shape from 1/32" sheet brass the tail wheel yoke and solder to the gear wire.

The wing panels are extremely simple. Cut the ribs from 1/8" medium grade sheet balsa. All ribs are 1/8" short, leaving the leading edge a 1/4" sq. strip, there is no trailing edge. Cut the 1/8" x 1/4" spars and sheet covering of each panel. Shape the leading edge with the proper dihedral angle. Cut the 1/4" sq. balsa to fit the ribs, bring the ribs, the spars, and the 1/4" sq. balsa together, fit the sheet and 1/8" x 1/4" ends spars. After this is dry, sand the leading edge.

With the panel sufficiently dry to work, sandpaper the edge blending in all rough spots. Cement the sheet covering. Cut out for center section. The 1/8" x 1/4" spar of the spars is to support the upper wing panel. Cement the 1/8" x 1/4" spar distributes with the center section cutout on the spars. The wing tips are fashioned from 1/4" sq. balsa. Cut the 1/4" sq. stock to fit the ribs. Shape the tips for proper contour.

The fuselage completed all structures and having brought them to proper finish and contour, apply two coats of Dope. Cut the sheet balsa covering for the fuselage. Cement all wood surfaces to the fuselage. Cut the sheet balsa covering to proper proportions. When completed, apply a coat of Dope to the covering and let dry for at least one hour. When sufficiently dry apply four coats of Dulco sanding sealer, sanding between each coat. Apply the exterior finish of Aircraft dope, first two coats of Orange yellow dope. Be certain to sand between each coat. Complete with the sheet covering added, then proceed. Allowing time for the above to dry, apply the black numerals and lettering. Both are cut out from Dulco pigmented, take care of the grain direction. Cut the lettering and numerals from the sheet, cement in place, fastening the cabine strips and the cockpit liner. Cement the cockpit liner in place, fastening the cabine strips and the cockpit liner. Cement the cockpit liner in place, fastening the cabine strips and the cockpit liner.

The rigging is stitch thread grey in color. The wood screws in .020 celluloid the pilot is a painted plastic dummy. Cut the wheels from 1/8" sheet balsa, formed from .020 lower wire, pitch bind to the left wing "N" strut. Add extreme wheel pants, the wheel pants are made of compressed fairing and other details now.

The drawing shows the components of the dummy radial engine. Use the three spring leaf is used for the strut with standard sheet brass for the yoke. The wheel is fastened to the yoke by a spring accomodating the action. This dummy assembly is fastened to the fuselage with two #3 wood screws.

Our completed Ag-Cat carried a Fox 35 power plant; however, a "29" should be used if the model is to be flown. Its weight being of little consequence. A prop of 9-6 proportions will smoke good and fly well. The Ag-Cat is a fine flier with little loss of stack. The Ag-Cat is a fine subject for control line scale complete control, in theory we almost forgot to mention the dummy pilot.

A low drag pilot is fashioned from a hopper carried under the lower wing panel. Cut the hopper from balsa and fit the nose. To add to the realism of the completed model these items should be considered: Cut the hatch in the fuselage from 1/16" sheet balsa to make a permanent feature of the aircraft. The hatch is hinged to the fuselage. For refueling, the crankcase is fashioned to fit the shaft and washer of the mounted engine. Cut the crankcase from balsa and fasten with a washer's pin. For the radial, tube is used throughout. Tuned pipes are fashioned from tubing and fasten into. Crankcase and rocker boxes are secured prop, pushrod and cylinders are fitted to the crankcase. Dummy engines removed for flights.

AG-CAT BILL OF MATERIAL

(Medium Grade Balsa unless otherwise specified)

One piece 1/2" x 4" x 36" for Fuselage sides; (1) 1/4" x 2" x 36" for Fuselage deck; (1) 1/4" x 3" x 36" for Fuselage formers; (3) 1/4" x 2" x 36" for Wing ribs, fuselage bottom; (1) 1/4" x 3" x 36" for Fuselage filler strip; (3) 1/8" x 3" x 36" for Wing ribs; (2) 1/8" x 1/4" x 36" for Wing leading edge; (2) 1/16" x 2" x 36" for Wing bottom; (2) 1/16" x 3" x 36" for Wing top; (2) 1/16" x 2" x 36" for Wing top; 1" x 1/2" x 24" block for Wing tips; 3/4" x 3/4" x 24" Hardwood for Engine mounts; 3/16" x 3" x 24" Plywood for formers, ballcrank platform, gear reinforcements; 1/4" x 1/4" x 36" Hardwood for Wing mounts; Hardwood block balsa for dummy engine and scale prop.

Misc. Items—3/8" ballcrank; Acme fuel tank; wheels; 1/16" and 1/32" dia. wire; nuts and bolts; sheet brass; solder; cement; clear and colored dopes. Sikspan; stretch thread rigging; large Veco horn; dummy pilot; decals; .29 engine; and 9-6 Tornado prop.

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