

Grumman F4F-4 Wildcat



This one will keep you busy for awhile but she's a fine ship to add to your collection markings are for early Marine fighting squadrons in the Pacific by Walter Musciano.

One of the first monoplane fighters of the United States Navy, the Grumman Wildcat was the standard naval fighting airplane force through, 1942, exacting a heavy toll of Japanese planes until its replacement by the Hellcat and Corsair fighters.

The weight of 6,100 lbs. and span of 38 feet gave the Wildcat a comparatively light wing loading and, therefore, maneuverability to meet the Zero on more equalized terms than the ill-fated P-40. Powered by the R 1830 Pratt & Whitney Twin Wasp of 1,200 horsepower, the cruising range was 1,120 miles. Top speed was in the neighborhood of 325 miles per hour. Ceiling, 31,000 ft.

Four .50 caliber machine guns were located in the rigid wings of the F4F-3 six guns were installed in the manually operated folding wings of the F4F-4. A number of stripped Wildcats (F4F-7) saw reconnaissance duty. Countless F4F fighters were delivered to the Royal Air Force and were designated "Martlet." Used by the Navy and Marine Corps, the F4F was operated from land bases as well as airplane carriers. The Wildcat was one of the first United States planes to employ self-sealing fuel tanks and protective armor plate for the pilot.

Most engines from .14 to .29 cubic inch can power this 3/4" equal V' 0" scale replica of the F4F-4. For some extra speed a .49 engine can fit in the extra large nose. This is for the expert speed demons only! Utilizing a vertical keel and formers, you can fashion the fuselage planking with considerable ease. Shall we begin?

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Cut the sheet balsa wing covering to shape and butt join two 3" widths to form the correct chord distance. Taper the spar as the plans specify and cement these to the bottom covering. The wing is made in two panels. Cut the spar joiner from plywood and cement it to the balsa spars. This automatically forms the correct dihedral angle. Add the wing ribs at this time. It is important that a slot be cut into the spars as the plans illustrate. This is necessary in order to allow space for the bell crank which is mounted in the wing. Drill a hole in the hardwood bell crank mounts. Two mounts are used, cemented to the spar. Use plenty of cement.

Attach the wire lead out lines to the bell crank by twisting and soldering the ends. Pass these lines through the holes in the ribs and slip the bell crank between the bell crank mounts and hold in place with a bolt. Smear cement over the nut to prevent it from loosening. We fly in a counter-clockwise direction and therefore locate the bell crank and lead outs in the left wing (port side). Install the wire control rod by either using an offset bend or by soldering a washer to the control rod end to prevent it from slipping off the bell crank.

Bevel the leading and trailing edges of the lower covering to fair into the upper wing rib curvature. The top of the wing is now covered. With the sheet covering butt joined and cut to outline shape, it is cemented to the spar and held in place with pins. Now, apply cement to the rear portion of the ribs and the beveled lower covering. Pin the upper covering to the ribs until the cement is dry. Repeat for the forward portion of the ribs. Add the solid balsa wingtips at this time. It will be necessary to drill holes in the port side wing tip to admit the lead out wires. When the wing is completely dry it should be thoroughly sanded smooth with 1/0 and 3/0.

Cut the sheet balsa vertical keel, cut out for the wing, cut the large space in the nose for the engine and combine the lower portion of the vertical fin as part of the keel. The stabilizer will rest upon the keel and the fin placed atop the stabilizer. Slide the wing through the slot and cement well. This is followed by the addition of the formers to the keel. When this is complete the landing gear platform and former "H" should be firmly cemented in place. The fuselage keel is cut to receive the plywood platform which is made in one piece.

The type and make of engine should be determined before construction progresses further because this governs the height and distance between the engine mounts. We bolted the engine to standard commercial K&B metal mounts which can be used for any engine. These mounts should now be bolted to the plywood firewall. They are of steel and therefore the nuts should be soldered in place onto the mount. However, if aluminum mounts are used the nuts can be soldered to a piece of thin brass or tin can metal and held in place on the engine mount by means of a self-taping sheet metal screw (1/4").

Bend the three landing gear struts to shape and force through the keel. Bind the joint with fine soft wire and solder well. With this complete the landing gear struts are firmly attached to the plywood by several coats of cement.

The elevator halves and stabilizer are cut to shape and sanded to a streamline cross section. Cement the elevator halves to the dowel spar and, when dry, install a commercial metal bell crank. Hinge the elevator assembly to the stabilizer, using cloth patches for hinges. Note that one half of this cloth is cemented to the top of the stabilizer and the other half to the bottom of the elevator, and this is alternated top and bottom with the remaining strips. Securely cement the stabilizer atop the keel and connect the control rod to the horn. Check control system to be sure it does not bind.

Complete building details are available on the full size plans.

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Bill of Materials

1 1/4"x3"x36" med. balsa, keel, empennage, spar. 1 1/4"x3"x36" med. balsa, keel empennage, spar. 1 1/8"x4"x10" plywood, spar joiner, bulkhd. landing gear supports and platform. 24 3/32"x1/4"x36" med. balsa, fuselage planking. 4 3/32"x3"x36" med. balsa, wing covering. 1 1/8"x2"x36" hard balsa, wing ribs, fuselage formers. 1 1/16" dia. 36" lg. music wire, landing gear struts, control rod. 2 1/2"x5/8"x4" soft balsa, wingtop (laminated 1/4" sheet). 1 .020" dia. 36" lg. music wire, lead-out lines.

Miscellaneous: thread, 4 oz. light grey dope, 4 oz. med. blue dope, one ounce green dope, cement, 4 oz. Testor Sanding Sealer, pins, sandpaper, rubbing compound, .005" plastic sheet, plastic tubing, red, white, blue and black Trim-Film, K&B metal mounts, nuts, bolts, scrap hardwood, tin can, Scientific pilot, 1-3/4" wheels.