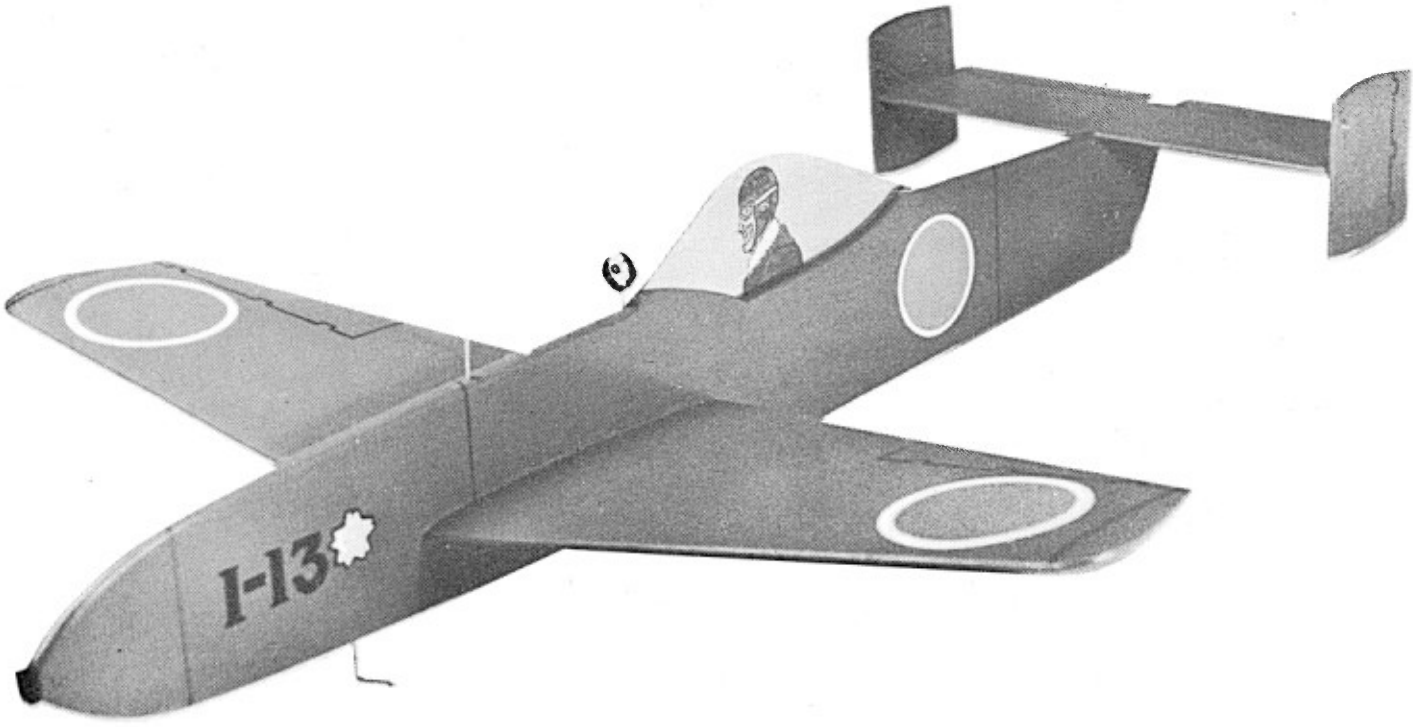

Balsa Baka Bomb

Our profile version of this one-way, piloted bomb is launched by catapult; original was bomber-carried.

W. C. HANNAN

THE Japanese "Baka" series of piloted bombs were developed as an emergency effort, toward the later stages of WW II, in an attempt to thwart the Allied naval attacks. These little one-way bombers were generally carried by twin-engined "Bettys" to within about 50 miles of the intended targets, whereupon the Bakas were released to glide the remaining distance, assisted during the terminal phase by three rear-mounted rockets.

The U. S. Navy bestowed the name Baka (fool) upon the tiny machines, but the Japanese referred to them as "OKAs" meaning Cherry Blossoms. Some examples of these aircraft are still in existence. One is on display at the Ontario Air Museum, Ontario, California; another is in the Air Force Museum, Dayton, Ohio, and at least one more may be viewed in Southern Japan.

Although several variations of Bakas were produced (even a two-seater!), our little catapult glider is based upon the OKA-11.

Construction: Here's a chance to use up some of that heavy balsa wood left over from the last kit that you bought! This bird should be built from medium-hard or hard balsa, in the interests of ruggedness. Extra weight will merely mean that it will need to fly a bit faster.

Fuselage: Trace the outlines of the fuselage onto thin paper, which will serve as a template. Transfer the outline shape to a sheet of flat (not warped) ⅛" balsa. Cut the fuselage to size, being careful to preserve the alignment of the wing opening and stabilizer mounting area. The section of the fuselage beneath the wing is removed, to be replaced during assembly. Give the fuselage a good overall sandpapering, and round all corners to a smooth contour, with the exception of the stab mounting area, which is left square. Cut two cockpit canopy halves from fairly thick clear acetate sheet. A groove is made in the top of the fuselage to receive them.

Wing: A sheet of ⅛" flat sheet balsa is used for the wing. After cutting the wing to outline, shape it to an airfoil section, as indicated on the fuselage side view. A razor plane and a sanding block will make short work of this operation. Slice the wing at the centerline, and bevel the inner sides to achieve the correct dihedral angle. Rub a little glue into each side, reglue, and block up one wing tip, while the joint dries.

Empennage: The tailplanes are cut to shape from 1/16" sheet balsa, and sanded to a streamline cross-section. Be sure that the stabilizer ends are parallel, so that the fin-rudders will not toe in or out, when the model is assembled.

Decor: It is easiest to decorate the Baka before assembly. All surfaces are given two coats of sanding sealer, with sanding between coats. If commercial sealer is not readily available, you may make some from thin clear dope and talcum powder. We elected to apply only a minimum-type of finish, consisting of two coats of sealer, plus two coats of color, in the interest of saving time, rather than weight. The various lines which represent aileron, elevator, rudder separations and such, are drawn on with india ink or a ball-point pen. Don't omit these, or your model will look stark and unfinished. A coat of clear dope will give the markings protection against moisture. The Japanese "meatball" insignias may be made from sheet decal material, or even paper disks, if you prefer. The small cherry blossom emblems are cut from pink-colored paper.

Assembly: Install the wing, being certain to check for correct alignment as viewed from the front and top, as well as the side. Don't spare the glue, because this joint will be subjected to severe stresses during catapult launches, and those occasional "dorks." Next, trim and install the lower section of the fuselage.

The fins may be glued to the stabilizer, bearing in mind the importance of keeping them parallel. The tail assembly may then be glued onto the fuselage, again checking for correct relationship. The decalage shown on the plans is recommended for good stability, but if you are more interested in top performance, particularly in respect to obtaining maximum altitude, the stab may be reset at or near zero degrees, in relation to the fuselage reference line. Naturally this will make launching much more critical, and is not recommended for beginners.

Sandwich the little folded paper pilot between the cockpit canopy halves, and insert the assembly into the fuselage groove. If desired, the various canopy frames may be simulated with strips of chart tape. Actually, the visual effect is quite good, even without them. Finally, as a finishing touch add the little ring and bead sights, which may be made from shim brass and wire.

Flying: Finishing nails or strips of solder are inserted into the fuselage nose as re-

Continued on page 51

Balsa Baka Bomb

Continued from page 42

quired, to achieve balance at approximately the point shown on the drawing. Hand-glide your Baka, using a vigorous heave to get the little beast up to flying speed. Add or subtract nose weight, until a smooth descent is obtained. If the model is free from visible warps, yet persists in "falling off on one wing," add a small lump of modeling clay to the opposite wing.

Catapult: In lieu of the Betty-bomber which was used to get the real Baka to altitude, we employ a simple catapult, which can be quickly and easily fabricated from a 6" length of ¼" diameter hardwood dowel, and a loop of ⅛" flat rubber. The catapult launching technique is worthy of some elaboration: First, it is important to recognize that the position by which the model is gripped will alter the launch angle (almost the thrust-line, in effect).

We have obtained entirely different results by gripping the model underneath the wing, rather than by the tail of the fuselage, for example. Also, you may wish to experiment with moving the launching hook slightly forward or aft. While flying under windy conditions, which the Baka doesn't mind, our best results have been achieved by launching across, instead of directly into the wind.

Oh yes, if through some stroke of misfortune, your little Baka happens to bury itself in the ground, you can always tell the onlookers that it was merely a demonstration of a scale landing!