

Golden Girl R/G

C Rocket/Glide

by Dan Wolf

The Golden Girl R/G is a rocket/glide version of the Golden Girl B/G plan that was published in a previous issue of *Sport Rocketry* magazine. It uses the same wing size and planform of the GG B/G. I initially designed the R/G version of the Golden Girl for D R/G by adding a second engine pod for a 1/2A3 to push it into D class. It performed well in D R/G at NARAM-42 (2000), but I was unable to find the "good air" and had to settle for fifth place.

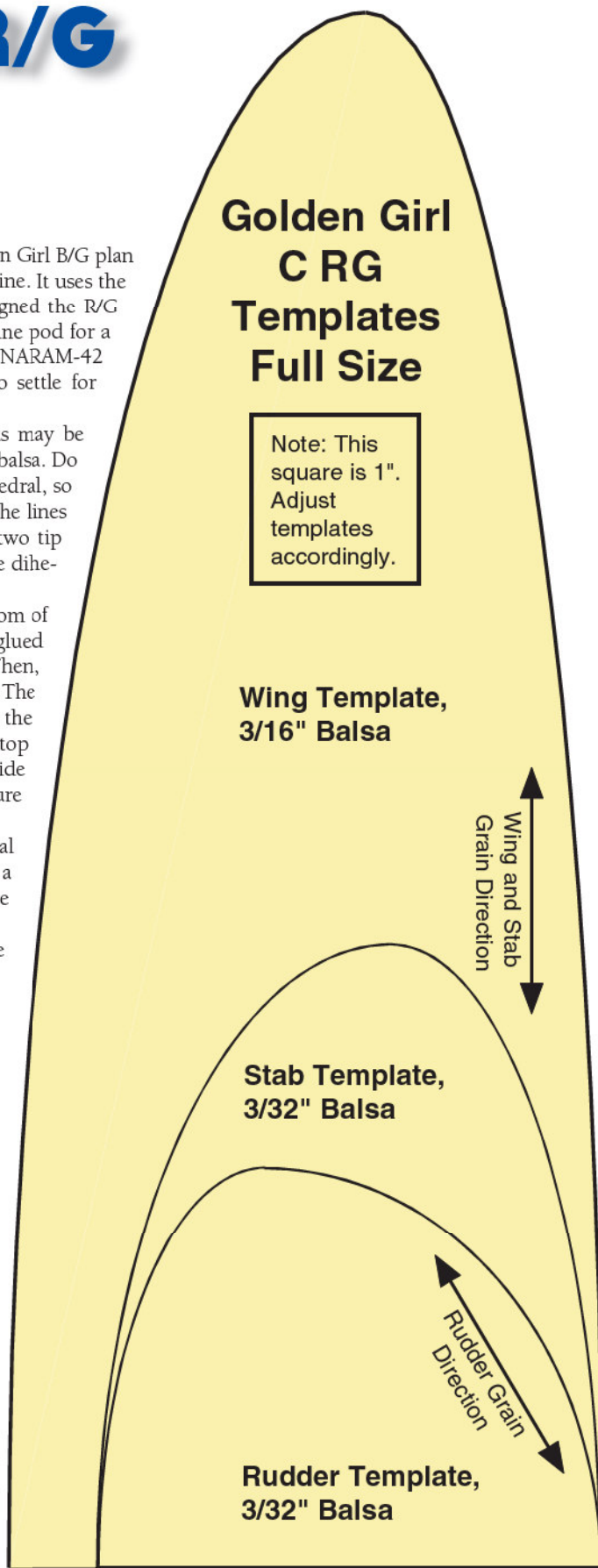
The plan is mostly self-explanatory, but a few comments may be helpful. Cut and airfoil the wing as one piece from 3/16" light balsa. Do not cut the wing in half on the middle line. The wing is a trihedral, so after airfoiling, separate the outer wing panels by cutting on the lines shown in the plan. The center section is 3" wide and the two tip panels are each 7 3/4" long. Bevel the cut edges to achieve the dihedral angle as shown in the plan and glue the wing together.

After the wing is dry, glue the plywood pieces to the bottom of the wing. Two 5/16" x 3 1/2" strips of 1/32" plywood are first glued down, 5/8" apart (each is 5/16" from the wing centerline). Then, two 9/16" x 3 1/2" strips of 1/64" plywood are glued on top. The bottom of the wing and the strips form a channel that allows the wind to slide along a 5/8" x 12" plywood rail attached to the top of the boom. I prefer to cut the rail first, and then use it as a guide when I glue the pieces on the bottom of the wing, making sure the wing doesn't bind on the rail.

The launch lug is in two sections. One is a conventional 1/8" lug glued to the side of the standoff. The other lug is a 0.020" thick music wire loop glued to the top of the wing at the high point of the airfoil.

To fly the rocket glider, tie a rubber band to one of the piano wire loops on the bottom of the wing. Then attach the rubber band to the pin at the front of the glider. The rubber band should be loose enough to allow the wing to slide back to the boost position, but strong enough to pull it forward to the glide position. Now tie a piece of thread to the loop on the opposite side of the wing from the rubber band. Loop it around the rear pin, then bring it forward under the forward pin, and finally through the gas vent hole in the front of the motor mount tube. With the wing held back in the boost position, tape the end of the string on the side of the motor tube. When the ejection charge fires, it will burn the thread, allowing the rubber band to pull the wing forward to the glide position. Make sure the rubber band doesn't fall off, but will hold the wing forward in the glide position during the glide phase. Insert an engine and tape it securely in place to prevent the engine from being ejected.

To trim the glider, insert a spent engine casing and gently hand toss. If the glider stalls, build up a "stop" out of masking tape on the front of the rail to prevent the wing from sliding as far forward. If the glider dives, there are two options. First, do not insert the engine as far into the pod. Second, take a notch out of the middle of the front of the wing to allow it to slide farther forward.



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