



"CUT-LESS"

1/2A R/C PYLON RACER
BY DAVE KATAGIRI

PHOTOS BY AUTHOR



Get into the fun, grass-roots end of pylon racing with this fast-building little racer. Meets the rules being used by most clubs around the country that have found this to be a most popular "Sunday Flyer" event.

● As I approached the local R/C field to practice with my 60 powered ship I noticed the sky filled with little gnat-like planes doing an oval dance. The time was winter and the air was cold, with snow on the ground.

What I was witnessing was one of the monthly Frost-Bite series 1/2A Pylon Races sponsored by the Seattle "PROPS" (Pylon Racers of Puget Sound). An R/C buddy of mine once told me that a model airplane flown by a grown man must be a BIG model. Here were a bunch of old Sunday fliers being exposed to pylon racing using dinky little 1/2A ships, and they were having a ball! The PROPS races were scheduled during the winter months... first Sunday of each month, regardless of weather.

After that outing I parked my BIG ship with its companion gallon cans of fuel and cleared the ways to join the fun. The design I flew the rest of that season (and two more) was the "Cut-less," which was named after the advice my pit man kept giving me. It was good advice, because we placed a respectable 2nd for a 6-race season.

Half-A Pylon Racing has proven to be the most popular racing event in the Seattle area. The best thing about this class is that it is a one-engine class. Better yet, it is difficult to make big gains above the stock engine. Consistent flying can be a quick equalizer. If hop-up is decided, the steps are simple and inexpensive. The other advantages are the simple procedures and low man-power requirements. Also, a runway is optional.

Our races have been started by hand-launch and by a flying start. The latter is a greater challenge because it is one more potential cut.

The model was patterned after a full size mini-ptylon Formula-V (VW powered) racer "Soneri" by John Monnett ("Private Pilot," June 1972 pg. 38-43). His little V-dub does 175 mph max on 60 H.P.

The model weighs 22 oz. with iron covering (20 oz. is minimum). Minor extra weight won't damp straightaway speed, but induced drag due to lift will increase on turns. Next to a good engine, minimum weight seems to be the next important criteria for a winning racer. Weight control was achieved by using a 225 ma battery pack and light wood. The photographs show wheel pants and cheek cowls for show, but for go... take them off. The purpose of these races is to have fun, so the appearance rules have been informal.

CONSTRUCTION

The structural arrangement is simple and conventional, so only comments concerning assembly sequence will be discussed.

WING

The airfoil section is semi-symmetrical, and a shim will be required during construction in order to ensure a true wing. I used a 3/16 inch square strip, parallel to, and 1/8 inch forward of the trailing edge, to shim the ribs to position. The upper surface is sheeted on the board. Remember to glue the servo mounting strips at the center section before sheeting that area. At this point, the wing should be stiff enough to remove from the board to cover the under side. Wing thickness is at the minimum (7/8 inch), so don't sand other than to true the cap strips.

FUSELAGE

Select matched (adjacent slices) sheets for the body sides, and cut the 1/32 ply doublers in a way that initial warping will tend to be compensated when the nose and tail end are bent to form the plan view shape. Omit the 3/32 x 3/16 spruce stringers until after the 1/8 inch dowel holes are made in the top block. This is done by drilling through body frame holes in 5 and 5A.

The 4-40 nut plate for the hatch/wing mounting should be deformed out-of-round slightly to increase friction on the bolt if the fit seems too loose. Other-

wise, engine vibration may tend to cause the bolt to back out. The breakaway feature is the 1/4 inch plywood plate that pulls out. A 6/32 nylon bolt can be substituted, if the head is counter-bored into the hatch. The hatch can be fastened with either epoxy or silicone glue. Both have been used successfully.

TAIL ASSEMBLY

The elevator horn is enclosed. A suggested sequence for assembly is as follows: Cut and shape the fin fairing blocks while tack glued in place with Ambroid, and with small shims to simulate the thickness of the fin and stab. Separate and glue these fairing blocks to the fin. Cover the stab, elevator and the fin parts separately. Fit and adjust the elevator push rod and trim the recess in the rudder to clear the elevator push rod and trim the recess in the rudder to clear the elevator horn. Pin the assembly in place and check the elevator servo location and direction. After the body is covered, the entire tail assembly is glued together. Don't forget to attach the push rod before gluing.

ENGINE AND INSTALLATION

The only competitive 1/2A engine available today is the Cox TD .049 or .051 (favoring the .051). The engine compartment is sized to receive the Cox muffler. The new pipe version is a very effective unit and causes only about 400 RPM loss. This is minor for sport flying and can be tolerated in a race, considering the engines run 19-20 thousand RPM on speed fuel. Besides, the sound is smooooth. The prop is important as always in competition. Try those suggested on the plan to start.

FLYING

With the control deflections noted, the plane will be sensitive, so be alert on the test flights. The roll rate will be about one roll per second. Make further adjustments so overcontrolling in the excitement of a race will be minimized.

Good luck, and remember... Cut-less to win!

MODEL BUILDER

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