



RCM CONSTRUCTION FEATURE

SUN FLI III

The Sun Fli III is one of the most consistent contest winners in the nation — placing in virtually every contest in which it is entered. Its slow, nose-high main gear landings are sheer delight.

By Joseph Bridi

R/C Modeler Magazine is proud to present Joe Bridi's Sun Fli III. Joe, a member of the RCM field staff, is a top stunt and Goodyear pilot, usually ending up in the top five places of the majority of contests which he enters. Joe has been respectfully called, by his many friends, a "gentleman sportsman." The Sun Fli III is, somehow, this type of airplane. There is nothing radically different about it . . . it doesn't scream through the air at break-neck speed . . . it can be one of the most docile stunt aircrafts you'll ever fly . . . yet it has, over the years, placed in the top money in virtually every contest in which it has been entered including a first place win at the Mexican Nationals. The man and the plane are a familiar sight at contests throughout the Western States, as Joe has flown this same design for several years. A consistent winner, the Sun Fli III could be your entry into the winner's circle in 1968-69.

THE Sun Fli III, like the majority of Class C pattern model aircraft, had a host of ancestors. Different airfoils, tail moments, and shapes were used with the thought in mind that we wanted a docile type model that would still do the AMA pattern. The model itself had to be fairly easy to construct, cutting down the building time to a minimum in order that more time could be spent at the flying field rather than at the garage or basement workshop. I think that you will find the Sun Fli as easy to construct as it is to fly, therefore construction notes will be kept to a minimum.

CONSTRUCTION

The fuselage sides are made from $\frac{3}{32}$ " by 4" balsa sheet with continuous vertically grained $\frac{3}{32}$ " balsa doublers the entire length of the fuselage sides. Contact cement is used to laminate the doublers and sides together. Two balsa and one $\frac{1}{8}$ " plywood bulkheads are the only bulkheads used in the fuselage. I, personally, prefer hardwood beam motor mounts, so these were always used in the various Sun Fli models. Either maple or oak will work quite satisfactorily in this application. The top fuselage block was a tapered 1" by 4" by 42" soft balsa plank hollowed out to reduce weight. The hatch at the fuel compartment was made of pine to minimize warping or cupping of the hatch itself.

The rudder and elevator are constructed in the conventional manner — using an internal framework with $\frac{1}{16}$ " balsa sheeting on both sides. Once the framework was built over the plans, contact cement was again used to laminate the sheeting and the framework together. The rudder and elevator was also built flat to reduce the amount of labor spent in constructing these surfaces. I also feel that the flat surfaces are just as good, if not better, than the airfoil type sections.

The wing is the only part of the Sun Fli that is a little difficult to construct due to the progressive type airfoil. The actual method of construction is conventional except that close attention to proper blocking of the wing is necessary to reduce any possibility of building a warp into the wing. Any model aircraft that is not true is that much harder to fly. If you want to bring that hardware home from the next contest, make sure you use the best construction techniques possible. The trailing edge of the wing is straight and the leading edge tapers back. The only dihedral is the amount of taper in the ribs themselves on the bottom side of the wing. The top of the wing should be straight.

Cap stripping and sheeting was used in preference to sheeting the entire wing, keeping the overall weight, not to mention the cost, to a minimum. Several foam type wings were used with equal success — the only difference being an added two or three ounces to the total weight of the wing. $1\frac{1}{4}$ " strip ailerons were used on all of the models, again to reduce construction time. It is much faster to install strip ailerons than the barn door type. A medium to hard balsa should be used for the strip ailerons. No center bracing is necessary in the wing — just use cloth, Celastic, or glass cloth at the center of the wings to join the two halves together.

All of the hardware and balsa used was of conventional size sold in the local hobby shops. The fuselage with rudders and elevators, with all working surfaces attached, ready to silk, weighed out at approximately 16 to 17 ounces. The wing, with ribs, sheeting, and cap strips have been averaging out at approximately 15 to 16 ozs. before silking. With 744 square inches of wing area the model should weight out at 6 lbs. 4 ozs. to 6 lbs. 8 ozs, ready to fly.

Generally speaking, the model is fairly easy to fly with no bad flying characteristics. The amount of throws on the working surfaces should be up to the individual flier himself, and dictated by his personal preference. Some contest fliers prefer a faster or slower roll rate than others. The Sun Fli III seems to enjoy windy weather more than the calm air. Landings are sheer delight, with slow, nose-high main gear type landings the rule rather than the exception. Of course, a little practice would help!

The equipment used in the prototypes has been the E. K. Logictrol Single Stick 5. The dependability of this unit has made flying enjoyable, with the knowledge that a person could go out to fly without worrying about equipment failure. With so many flights to its credit that we have actually lost count of the number, there has never been a hint of trouble with this radio unit.

Good luck and happy flying with your Sun Fli III.