RED TAIL

Early in 1991 we received a package and letter from Willie Bosco of Garberville, California. The package contained a small balsa model constructed of some scraps left from a completed kit. Willie asked what we thought of the design and asked if we could make some suggestions concerning airfoil(s), location of CG, and methods of assuring stability in all three axes. The balsa model, although small and having just a flat plate airfoil, flew surprisingly well.

Willie has told us he has watched and flown with birds for years. Buzzards, Red Tailed Hawks, and Black Eagles are all in evidence in Northern California. At one time Willie considered getting a falconer's license to keep and train a Red Tailed Hawk. That dream was never pursued, but Willie did get involved in RC sailplanes. Little wonder Willie's 'ship looks like a bird!

Willie's original drawings showed a rather novel method of roll control involving moveable wingtips. Since this was a new planform, and Willie's first flying wing, we suggested he stick with more conventional control methods. Failures would thus be traceable to basic difficulties with the design itself rather than being complicated by too many other variables.

The next package to arrive was a full sized drawing of what is now known as Red Tail. We made some other suggestions, such as location and size of the ailerons, setting up the elevator, and an easy method of gaining some directional stability, and printed some airfoil plots to be used as templates. The plans were then returned to Willie.

The next letter we received from Willie was most gratifying: "I appreciate your strong advice about all my wild ideas I had at first. I told my wife while I was building one night, 'Even if this doesn't fly it's been a great design and building process.' It was easy to bring my own ideas into reality once I could visualize what I had in mind.

The project moved right along and I finished it up last Sunday night on a marathon finish.

"I couldn't believe how the whole thing went from the time I cut the cores and sheeted them with veneer, to when the radio gear functioned, 'til when it balanced with only one ounce of lead in the nose, 'til when - and I'm not lying - it flew right out of my hand.

"I finished very late Sunday night. Monday, today, I went half way up my slope out my back yard for a hand toss. I didn't know what to expect. You can imagine my cool as it moved out, floated up, covered ground, rolled over and banked up, leveled out and sped home to my feet. That's when I knew that all your advice and my hard work paid off.

"The thing is a total success. It looks so good in the air and it is fast! It has already met and surpassed my expectations. I'm really happy!"

Red Tail operates on two channels: ailerons and elevator. Span is 82 inches, wing area is 468 in^2.; at a weight of 22 oz., the wing loading is under 7 $oz./ft^2$. As mentioned above, Red Tail utilizes a foam core and veneer skin; the body is fiberglass and epoxy, wrapped over a styrofoam mold; the elevator is sheet balsa. All radio gear is located within a removeable "nose cone" for accessibility. Construction is very rapid. Since Red Tail is capable of high speed, yet has a low wing loading, Willie feels he has a slope 'ship and a thermal machine all in one airframe.

We met and talked with Willie and saw Red Tail for ourselves at the Mid-Columbia Cup slope race in Richland the end of May 1991. Red Tail is a unique good flying design.