GOLIATH

(This was originally composed as a part of a letter to Jim Gray, then Editor of RC Soaring Digest. It appeared in RCSD as an article.)

We know you're interested in flying wings, and thought perhaps you would be interested in a recent experience of ours.

Dave Jones' Blackbird 2m has held a special fascination for us for quite some time. We have previously built it with only one exception to the plans; we tapered the main spar. Being the sorts of people who do a lot of reading, however, we decided the basic design had some other possibilities. What came from this was an FAI maximum wing area (2325 square inches), nine pound plus flying wing!

Our original intent was to construct a XC machine which would be visible at high altitude, be immune (by definition) to horizontal stabilizer blowoff at high speed, and be just as maneuverable as a "standard class" model. We used the CJ-$25_2$09 airfoil.

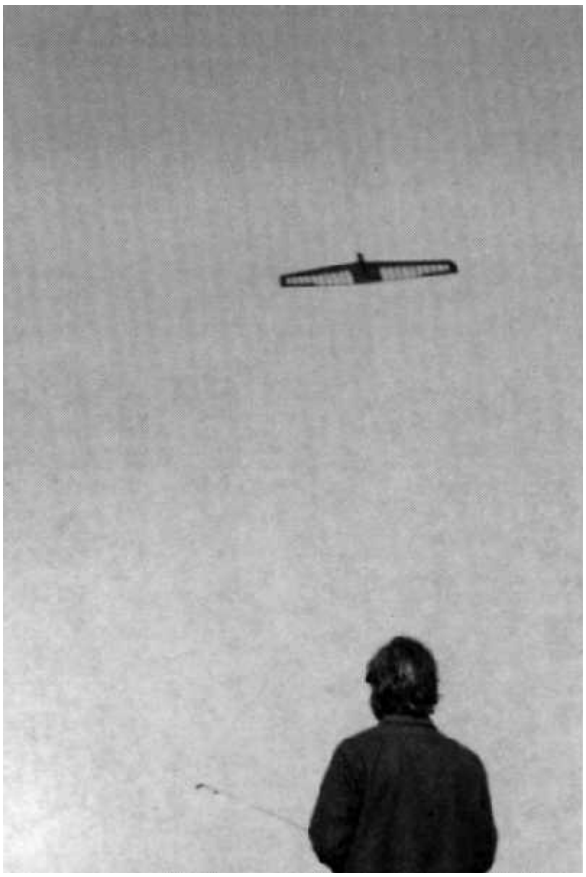
The first "flights" consisted of some hand launches (!) at a Portland Area Sailplane Society XC meet. Due to being tail heavy, this amounted to controlled crashes, however. Our next attempts, with more weight in the nose, took place at a local slope site. SUCCESS!

We had a highly modified Metrick (Selig 3002 airfoil on straight foam core wings, R E A F) and our Blackbird 2m with us. The wind was blowing pretty good, but from an angle, so the planes flew "upwind" and "downwind". You could really get some ground speed going one way, but had to fight your way back going the other. The Blackbird flies very well in thermals, but it's a real joy to fly on the slope, and the Metrick flies MUCH better on the slope than our previous modified kit. The enlarged Blackbird, however, was AWESOME!

Thrown over the edge, it immediately started climbing - much faster climb than either of the other two ships. In just a few seconds it

was higher than either of the other two ships had gotten in nearly two hours of flying.

Previous experience with the 2 meter version really cut down the learning time, and within a few laps it was really performing. Here was an airplane with a span of nearly 9 feet, whipping up and down the face of the slope like there was no diagonal vector to the wind at all. Some down trim and the speeds were phenomenal; we made some very close passes and there were no shrieks, no whistles, not even a whisper. If there was any noise at all, and there was some controversy, it could only be described as a soft hum. Beautiful, graceful loops. The turns were unbelievable - 75 to 80 degree bank, some up elevator, and the inner wingtip was close to being the pivot point. In nature films you often see flights of birds in which the birds flip directions. The only difference here was the absolute smoothness with which this airplane moved. If ever the term "like it was on rails" applied, it was here.

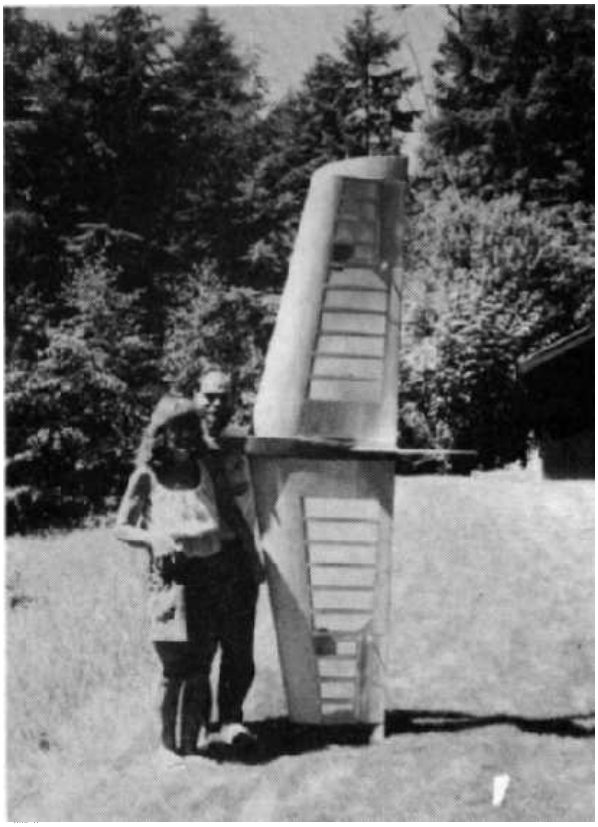


One of the difficulties we have is at times our piloting skills do not quite meet the challenges of situations we run into. Such was the case here. We lost sight of her below the edge of the cliff and lost control. Next thing we knew there was nothing but the shattered hulk in the water below.

It seems like when we finish building an airplane we always say to ourselves, "If we ever build this thing again, we're going to ...", and so it is with this one, too. We'd be happier with thicker sheeting over the leading edge, and a lighter fin structure, and both of these changes will be incorporated into the new one.

We're making rapid progress on the replacement. A couple of nights ago we spent some time watching the computer draw out the 26 new wing ribs, and we then cut them out. Tonight we used the table saw to cut the tapered spars.

Still, the emotional high we experienced during that 20 minute flight of the original will never be forgotten. What an experience it was!



Goliath's replacement - Pirouette