On the ’Wing... #126

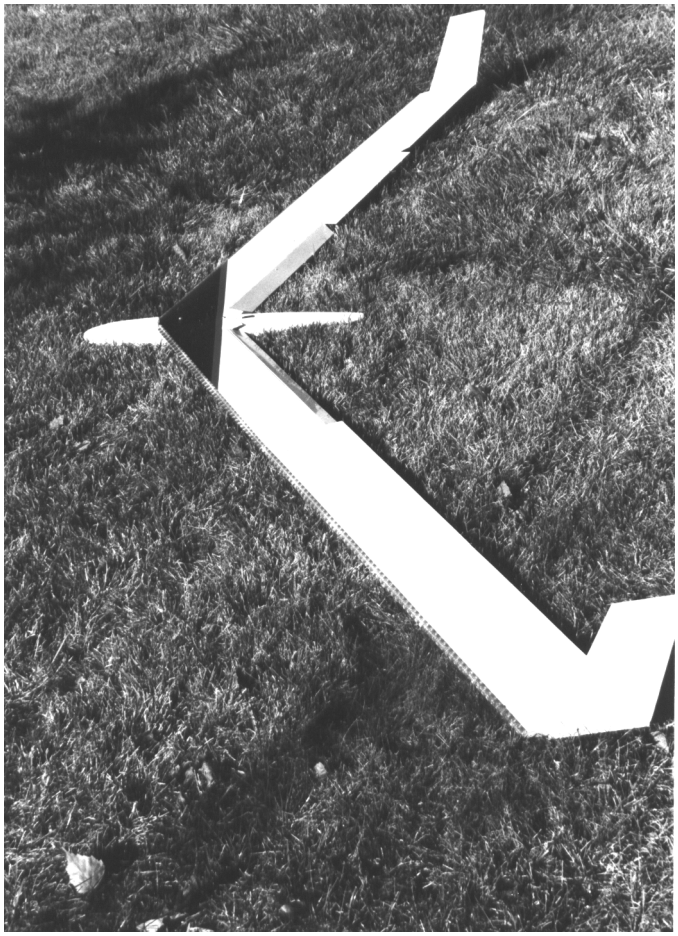
John Dvorak’s CO8

John Dvorak, of San Jose California, was impressed enough with Hans-Jürgen Unverferth’s CO8 (May and June 1998 *RCSD*) that he built one! The result of John’s efforts is a beautiful swept wing glider which is nothing short of majestic in flight, although it did have its own small difficulties which had to be overcome.

Construction is of foam, carbon fiber, and fiberglass. George Sparr, of Aerospace Composites, served as consultant for the fabric layup and internal structure. The uni-directional carbon fiber is laid out parallel to the wing, with the outer ’glass oriented at 45 degrees. The spar is a half inch carbon fiber tube; the wing rod is also carbon.

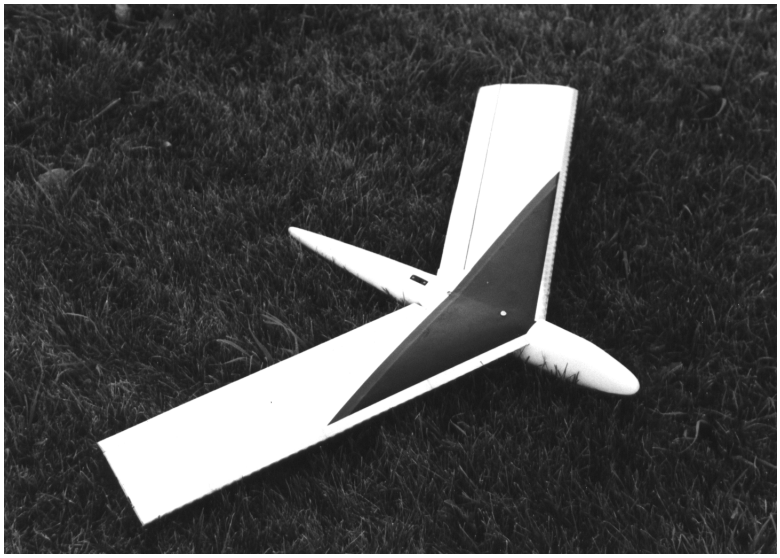
As can be seen in the picture, the wing breaks down into three main pieces: a center section and two outer wing panels. Usual practice is to make the joint parallel to the air flow, but John cut the wing at 90 degrees to the leading edge. This has worked well, with no problems in evidence.

We received an e-mail from John in which he commented about excessive pitch up when the flaps were lowered. Excessive elevator compensation was required, and this reduced control. A quick cyber-trip to Andy MacDonald’s page <http://www.csccs.com.au/~andy/> provided some information about CO8 flap deflection directly from Hans-Jürgen Unverferth. Hans-Jürgen’s CO8 flies with four degrees of positive deflection for launch and thermalling, eight degrees for landing.



Eight degrees did not slow the aircraft sufficiently for John’s flying style, and his initial solution was to change the hinge line of the flaps so they would serve as air brakes. This modification did not last long, as it disallowed using the flaps for efficient thermalling. The ’ship is now flying with the original flap installation back in place, and 90 degrees of flap deflection. The necessary pitch trim change is just

John Dvorak's CO8 in flight



about what was needed when the flaps were deflected eight degrees. To maintain control authority, the servo arms have been lengthened, providing more elevator travel.

A bridle is used for launching. The two tow hooks are screwed into half inch dowels mounted at the wing separation line. Only one launch mishap so far — a roll on launch due to having the nose pointed up. A straight ahead throw with the line tight, followed by up elevator, gives very high winch launches. While John hasn't had much thermal flying experience with his CO8, he's promised to let us know how it performs.