

JERRY BLUMENTHAL'S "RATTLER,"
PLUS A SMALL IN-THE-WING MIXER

Jerry Blumenthal, a member of TWITT (The Wing Is The Thing), came up with novel methods of attaining pitch and yaw stability in his newest full sized design₁, and then fabricated an elevon mixer capable of fitting in spaces not large enough for a servo₂.

Conventional plank designs utilize a reflexed airfoil which has two inherent disadvantages: high drag and compromised lift capability. The new design, which Jerry has named "Rattler," is a single place sailplane of modified plank design which utilizes an airfoil with no reflex, and incorporates wing twist to achieve pitch stability! A look at the 3-view below shows how this is possible.

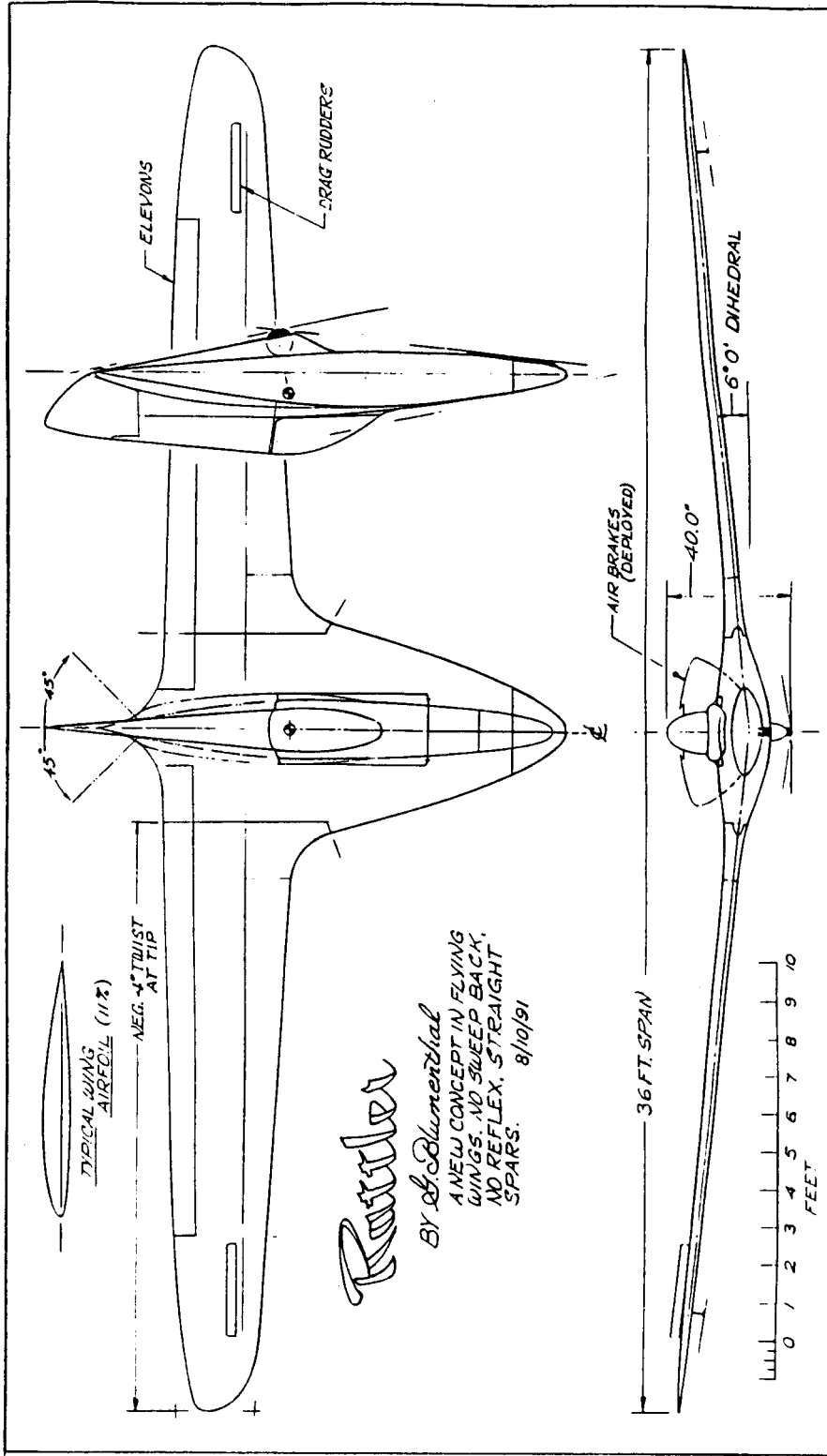
The CG is located ahead of the main portion of the wing, so the wing twist can apply the required stabilizing download. Jerry maintains the 4° wing twist creates less drag and allows the wing to produce more lift in comparison to established plank planforms.

The "Rattler" is also unique in its lack of vertical surface for yaw control. The canopy fairing and wing dihedral provide sufficient lateral area behind the CG.

A side benefit of the "Rattler" planform is its simple straight spar.

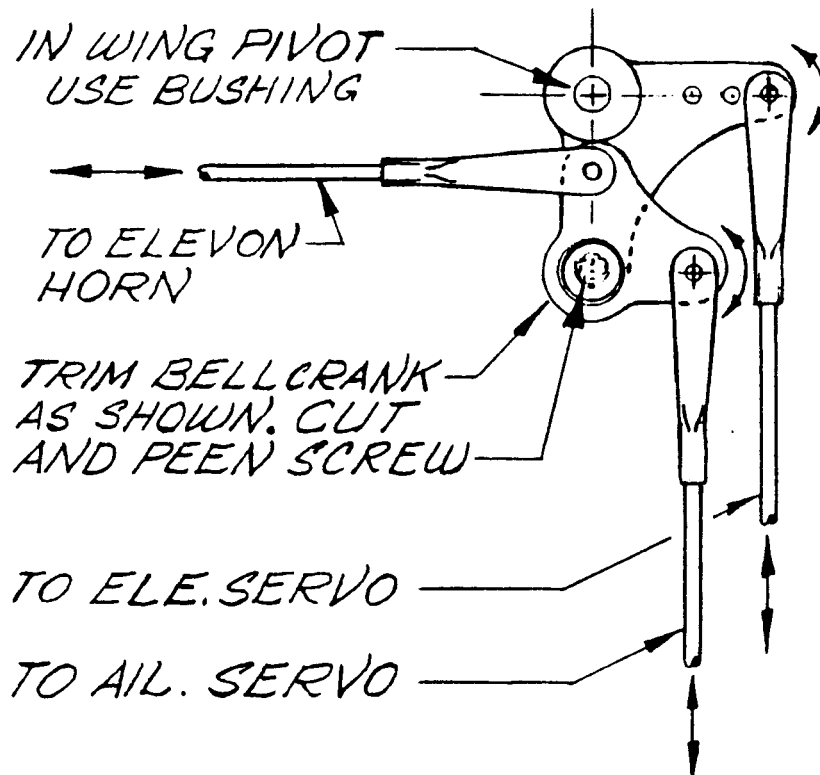
In an effort to prove the design before construction of a full sized version, Jerry is building a scale model. Needing a mechanical mixer which would fit within the wing very close to the elevon, he came up with this nifty assembly. While we would prefer a mechanical arrangement where both servos pull the elevon up, there is little doubt Jerry's mechanism is both efficient and compact.

1. TWITT's Newsletter #63, September 1991.
2. TWITT's Newsletter #68, February 1992.



Rutler

BY *S. Blumenthal*
A NEW CONCEPT IN FLYING
WINGS. NO SWEEP BACK,
NO REFLEX. STRAIGHT
SPARS. 8/10/91



THIN IN-WING MIXER

USE DU-BRO BELLCRANKS
& BUSHINGS. ONE UNIT IN
EACH WING. MOUNT FIRMLY.