

truss by attaching them to a bow-string wire extending from tip to tip of the upper and lower chords. This fixes the up-rights against lateral deflection at four points instead of two and theoretically increases their efficiency about four-fold.

The great advantage in this is that besides lending itself naturally to lighter construction, it permits the use of struts very narrow in cross-section, materially reducing the head resistance offered by the framework.

All the exposed members of the main planes, tail, and bow-control, which were substantially at right angles to the line of flight were made of fish-shaped cross-section giving a form of least resistance according to experiments made by Prof. Zahn and conforming fairly well to stream-line theory. A number of different sizes of spruce sticks were made for this purpose. They were of four to one, and three to one dimensions, the largest size being 4" x 1" and the smallest 1 1/2" x 1/2" (see page 4).

The other feature of the Red Wing which distinguishes it from the usual type of double-deck machine lies in the shape of the supporting surfaces. These are very much like a birds wing in plan, (see page 5), tapering towards the tips and at the same time decreasing in curvature.

Experiments published by W. R. Turnbull suggested the advisability of using aero-surfaces concave below in the forward position and convex in the after position.

The double curvature of the surfaces was obtained by the use of curved ribs made up of four laminations of wood