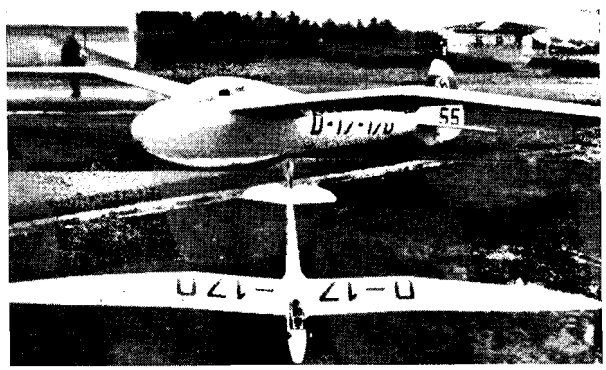
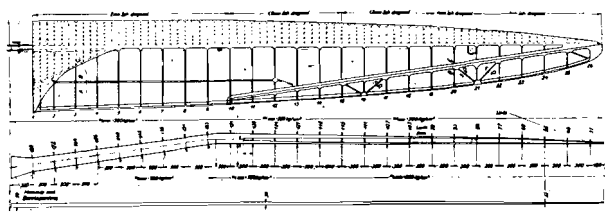
The SCHWALBE II

High Performance Sailplane



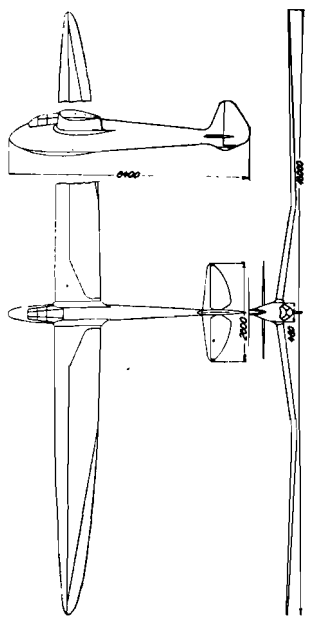
First begun in 1935 by Gumpert, the Schwalbe II (which means "dove") was designed as a high performance sailplane with least possible cost and time of construction. It was also intended to be used only by experienced pilots. As a result it is a simple design without many of the features now accepted as standard on modern sailplanes, such as spoilers, flaps, etc.

This ship was first flown in the Rhön Contest where it showed surprising flying qualities. The best gliding ratio was found to be 28:1 at 70 km. (43 mi.) per hour. Sinking speed is 65 cm./sec. at 60 km./hr., 80 cm./sec. at 80 km./hr. and 1.20 m./sec. (4 ft.) at 100 km. (61 mi.)/hr. These figures were determined by stop watch, altimeter and air speed indicator readings in calm air.



The perfectly unconfined (elliptical) wings make the flying qualities very good, especially in turning. In experimenting, it was found that narrowing the wing with the help of trimmed ailerons gave a marked decrease in control whereas the performance was only slightly improved. The section 479 is used with the root thickened 15%.

To avoid a complicated spar construction, the main spar was made solid up to four meters from the inner end with a tensile strength of 850 kg./cm.^{2}. They are joined in the center of the fuselage by two bolts. The elliptical wing plan and the shape of the ailerons was chosen to avoid distortion on the one hand and on the other to achieve the least possible sinking speed in slow flight. The placing of the aileron mechanism is so arranged that with a flat wing (trimming of 0) the differential is very great and with the aileron fully extended becomes smaller. Beyond that the displacement is normal.



SPECIFICATIONS

Span	16 m.
Wing Area	14.2 m.^{2}
Aspect Ratio	18:1
Md. wing depth	.89 m.
Fuselage weight	41.5 kg.
Weight each wing	46 kg.
Weight empty	148 kg.
Weight loaded	280 kg.

The Smith Two-Seater "City of Utica"

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SPECIFICATIONS

Span	45 ft.
Center Section Span	4 ft.
Wing Area	263.5 sq. ft.
Aileron Area (Each)	18 sq. ft.
Horizontal Tail Area	30 sq. ft.
Vertical Tail Area	20.3 sq. ft.
Gross Weight	820 lbs.
Empty Weight	440 lbs.
Wing Loading	3.11 lbs./sq. ft.
Aspect Ratio	7.68
Dihedral	1 degree
Washout	4 degrees