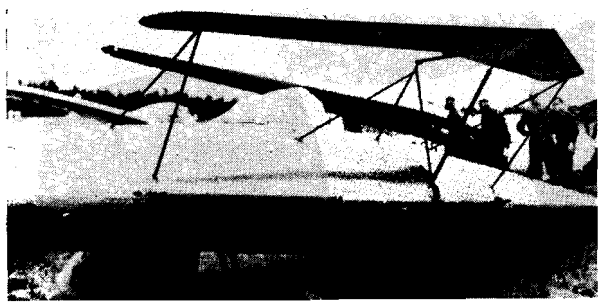
New GERMAN SAILPLANES

The Horten III

This new flying-wing high performance sailplane has been developed from the Horten II, built in 1936. It is useful for a study of general flying qualities as well as for instrument flying with all-wing machines. By means of great spar depth, as well as considerable sweepback combined with a very exact airfoil section, an excellent performance has been obtained with only nominal weight. The airfoil tapers in plan and form to the wingtips in a symmetrical manner. The wing is of wood construction.

The main wing structure is box spars; they have disproportionately greater bending moments in this construction. The ribs are carefully constructed as perfectly inflexible girders.

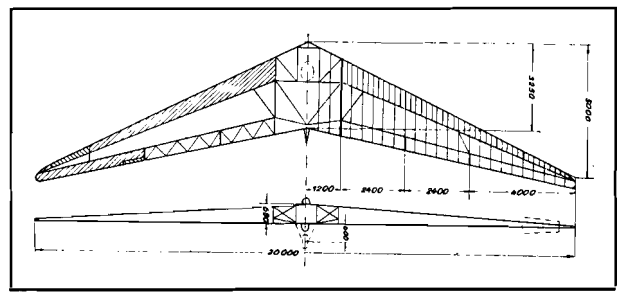
The wing unit is in three parts. The center section, reinforced with steel tubing, has a single-track retract-



Horten III *Flugsport*

able landing gear and a castering tailwheel. The outer sections are fastened to the center at four points. The trailing edge is divided into three flaps; the middle reinforced flap is curved for aid in landing. The two outer ones, covered with plywood, work with different controls as elevator and ailerons (with the Flettner trimming tab). The controls are coordinated so that a constant setting is maintained, even under pressure in fast flight, and oversensitivity in the lateral axis is avoided. The rudders are arranged as transverse flaps on the leading edge on the upper and lower surfaces at the wingtips. They are separate and yet function simultaneously as rudders and landing aids. All the controls have ball-bearing fixtures. The cockpit cover is designed for best vision following experimental flights. This ship cannot fall into a spin.

At the Rhön contest this spring, the ship demonstrated its outstanding flight qualities. At a height of 4,250 ft., it entered a cloud and ascended to 14,200 ft. In addition, it held to the most favorable ascending position almost automatically. In spite of a heavy ice layer, two inches thick, the ship still possessed good performance. A model of this design has been equipped with an auxiliary wing. This was designed to facilitate flying in turns of small diameter without excessive strain on the wingtips.



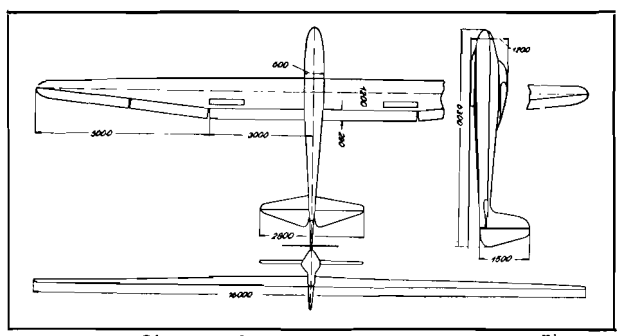
Horten III *Flugsport*

SPECIFICATIONS

Span	61 ft.
Area	388 sq. ft.
Aspect ratio	11:1
Root chord	9'11"
Wing tip chord	1'3"
Gliding ratio	32:1
Sinking speed	1½ ft./sec.
Weight empty	475 lb.
Weight in flight	695 lb.
Wing loading	1.79 lb./sq. ft.

The Chemnitz C-11

This is a full cantilever, high wing sailplane of more usual design, employing a fuselage of welded steel tubing and a retractable landing skid. The wings and control surfaces are of wooden construction and the horizontal stabilizer and elevators are quickly detachable. The wing has double, differential ailerons and both flaps and spoilers.



Chemnitz C-11 *Flugsport*

SPECIFICATIONS

Span	52.8 ft.
Length	20.8 ft.
Wing area	172 sq. ft.
Weight empty	478 lb.
Gross weight	686 lb.
Wing loading	3.9 lb./sq. ft.
Aspect ratio	1:16
Sinking speed	2.2 ft./sec.
Stalling speed with flaps and ailerons down	30 m.p.h.