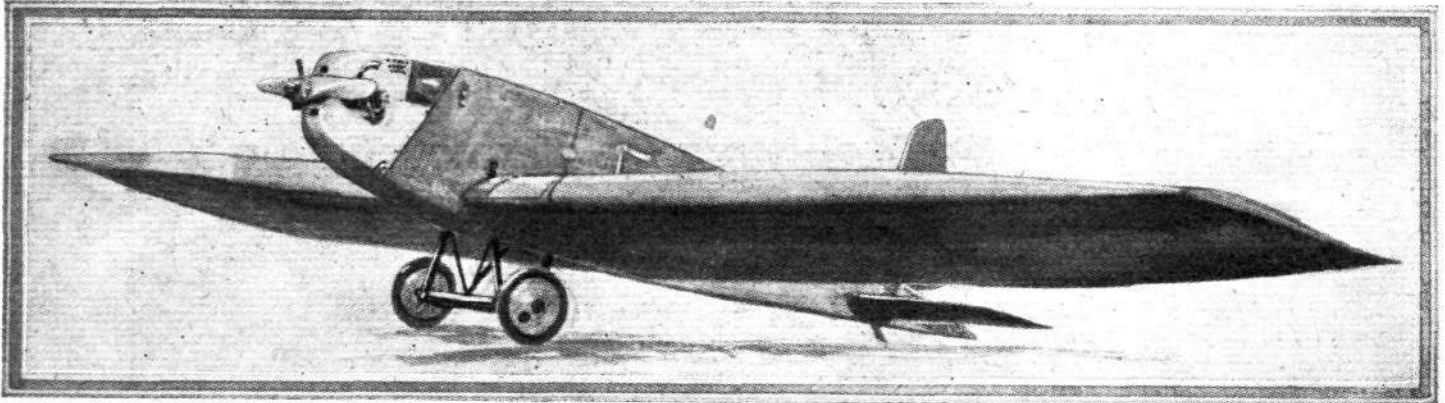


THE CASPAR "C.17" LIGHT MONOPLANE TWO-SEATER

A.B.C. "Scorpion" Engine

SOME months ago we mentioned in FLIGHT that the first A.B.C. "Scorpion" for light 'plane use had been sold, and that, curiously enough, it had been sold to a German firm, the Caspar-Werke of Travemünde. The machine for which the "Scorpion" was intended was finished some time ago, and has, we understand, proved to fly quite well with the small British power plant. The "C.17"—as the two-seater light monoplane is called—was designed by the chief designer of the Caspar works, Dipl.-Ing. Ernst Ritter von Loessl, and incorporates several unorthodox features. For the explanation of the objects which the designer had in mind, and

designer in planning his machine, and the decision to make it a low-wing monoplane of high aspect ratio was, of course, the result of a desire for high aerodynamic efficiency. This was essential in order to give the machine, without any undue increase in engine power, a power reserve comparable with that found desirable in commercial aircraft. Constructional details were planned so as to give low production cost, not by building the machine of inferior and cheaper materials, but by simplifying as far as possible the constructional work, reducing the number of parts to a minimum and standardising certain sizes of members for use throughout the machine



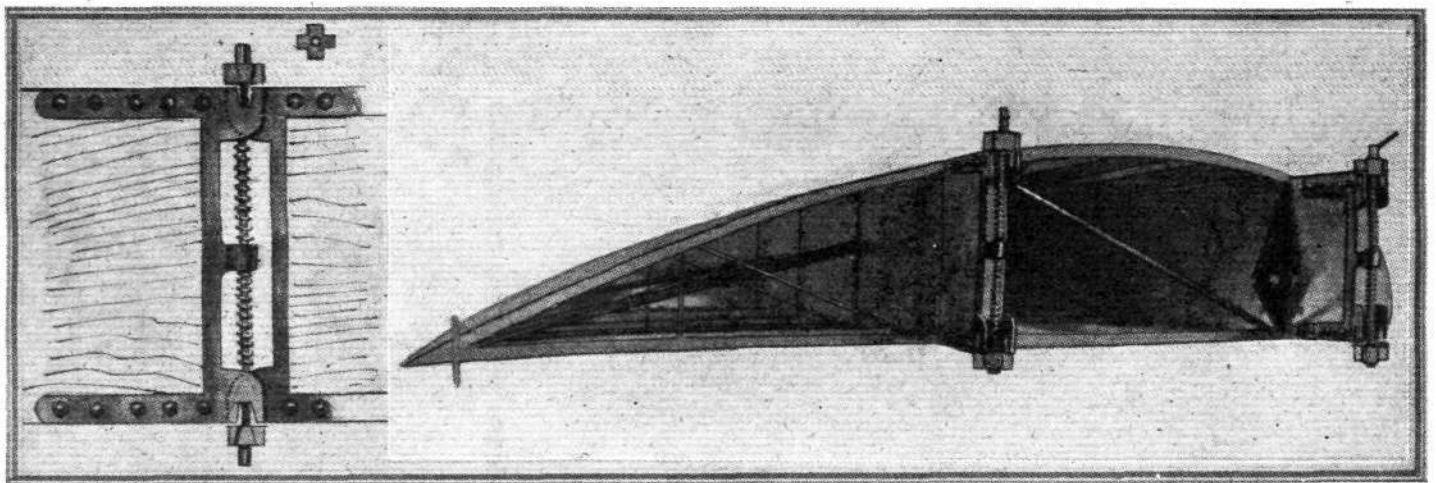
THE CASPAR LIGHT MONOPLANE : Three-quarter front view. The engine is an A.B.C. "Scorpion."

the reasons for some of the arrangements chosen, we are indebted to Herr C. W. Erich Meyer, Editor of *Deutsche Motor-Zeitschrift*, who gives an authoritative analysis of the machine in his journal. Incidentally, it may be mentioned that Herr Meyer, who was, during the War, a member of the famous Richthofen squadron, carried out the test flights on the Caspar "C.17," so that he writes with first-hand knowledge.

The requirements which the designer set out to meet were that the machine should have as nearly as possible the minimum amount of engine power so as to follow in this

(Thus, to take an example, the stringers used in fuselage, tail and wings are all of the same dimensions, and are of triangular section.)

As the accompanying illustrations will show, the Caspar "C.17" low-wing monoplane is of rather typical "German" lines, *i.e.* the high aspect ratio, large span wing, and very short fuselage are features which one has come to associate with aeroplanes of German origin. In this country the tendency has been rather to lengthen the body so as to get the tail out of the downwash and acting on a longer lever arm. In the Caspar, however, the designer had clearly in mind what



The Caspar light monoplane has its wings flexibly mounted by means of springs so as to take advantage of pulsating winds. The number of ribs has been reduced to a minimum.

respect the experience gained with light 'plane single-seaters. The fuel consumption was to be kept low so that the cost of petrol should not work out at any more, proportionately, for the two-seater than for the single-seater. In spite of this the machine was to have a performance and manœuvrability suitable for school work, sporting flying, and touring. In spite of these somewhat difficult requirements the construction to be adopted was to be such as to make for cheapness, as it was considered that otherwise the whole object of the machine would be defeated.

The requirements briefly set out above influenced the

he wanted to attain, and the short body is not merely a conventional proportion, but has been deliberately chosen. The high aspect ratio was, of course, adopted from considerations of efficiency. It was also desired to make the machine as easy as possible to fly, so that even a pilot of indifferent skill might handle it with comparative safety. In order to attain this end the designer adopted a novel principle of wing attachment by which, under the action of gusts, the wings can adapt themselves to some extent to the new conditions without upsetting the balance of the machine. A glider designed by Herr von Loessl incorporating this