



## A MULTUM-in-PARVO SAILPLANE

*The Construction of the Penrose Pegasus, a Small Machine Which Aroused Great Interest at Sutton Bank, Described by its Designer*

**A**LTHOUGH the Pegasus was finished only early this year, the original design and stress-work was commenced in September, 1932, and construction a few months afterwards. Originally it was optimistically expected to finish the machine in six months, but there were many unavoidable delays, apart from the fact that everything took much longer than was anticipated and despite the considerable help which the designer received from his wife and many members of Westland Aircraft, Ltd.

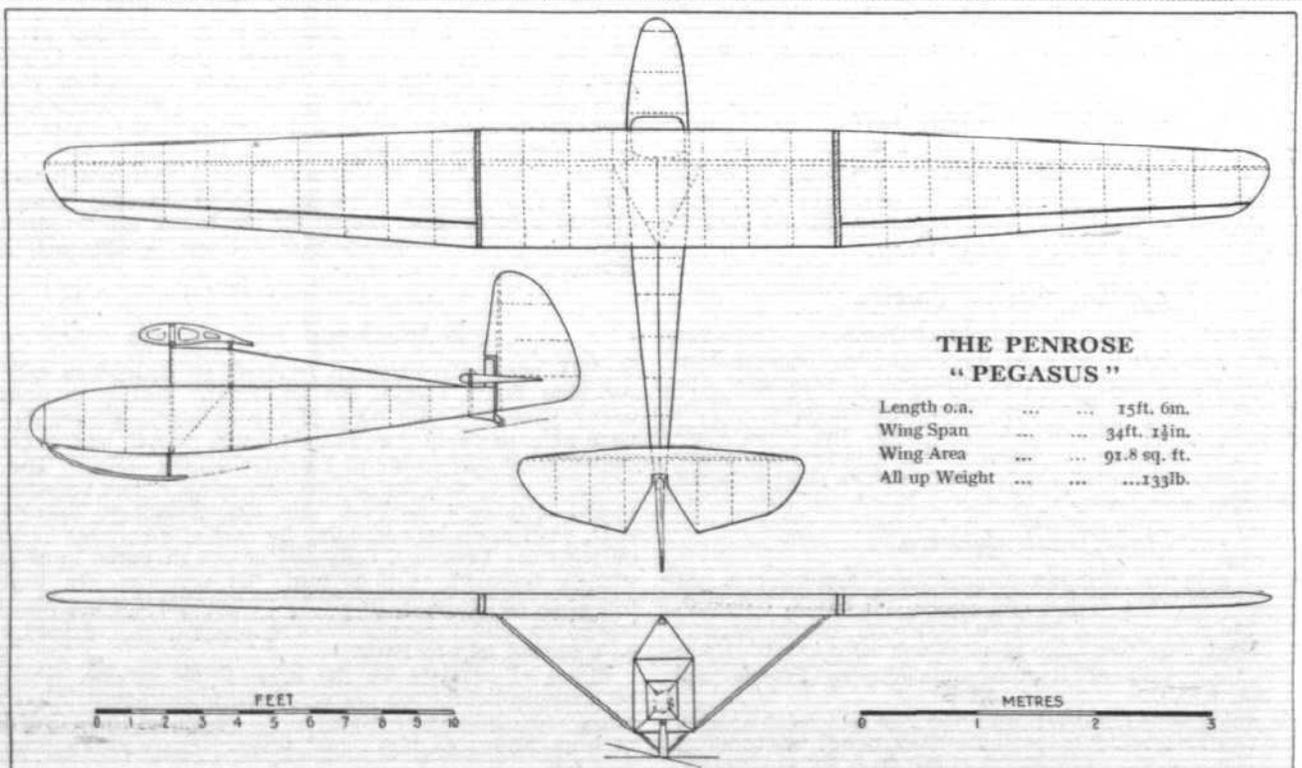
In the dark ages of 1931-32 it had been forcibly brought home to the designer that there was much too much heaving and pulling and all too little gliding, and this was attributable in part to the great weight and size of the conventional sailplane. An investigation of different types showed that it should be quite possible to realise a very satisfactory performance from a machine having a good value of  $\text{span}^2$ :area and a considerably greater loading than those then current. Other requirements were then taken into consideration, such as portability, controllability, small size for transport, etc., and ideas gradually clarified into the Pegasus. Happily, its pilot was not of great size, and weighed 10 stone, and this, of course, facilitated the design.

In view of the fact that the machine was to be home-made, both from the point of view of interest and of cost, it was found vital to make each structural unit of very short length, as, in order to get them out of the workshop, one had to negotiate a bend of just over 12 ft. 6 in. In addition, every part had to be of the simplest possible construction compatible with lightness.

Concurrently with the original investigation, the Cloudercraft Sailplane Co. was working on a similar project, and at one time the Pegasus was almost abandoned for Mr. Dickson's Junior. The ply-covered fuselage of the Pegasus was made 12ft. 6in. long and built up on spruce longerons and four main bulkheads, with a number of stiffeners, and light intermediate bulkheads. A rectangular box-section was adopted to avoid the difficulty of bevelling longerons and making vee bottoms and decks. The top of the fuselage has a deep vee fairing of fabric on a stringer and a number of formers.

*In this article Mr. H. J. Penrose, who, incidentally, is chief test pilot to Westland Aircraft Ltd., describes how he set out to design and build a small sailplane which would have a good performance and outstanding characteristics in the matter of portability.*

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**THE PENROSE  
"PEGASUS"**

Length o.a.	...	15ft. 6in.
Wing Span	...	34ft. 1½in.
Wing Area	...	91.8 sq. ft.
All up Weight	...	133lb.