

# THE BARNHART TWIN 15 "WAMPUS-KAT"

EVEN if the aviation industry is in a bad way out in the "States," as their reports have it to be, they have one advantage over our own state of affairs, and that is, there appear to be plenty of firms in a position to turn out new and experimental machines of various types, both for Government and commercial purposes. Within the past few months we have seen particulars of or references to about a dozen different new American machines of more or less original design.

One of the latest of these is the Barnhart Twin 15, "Wampus-Kat," a medium-sized, moderate-powered twin-engine commercial bi-plane, a product of the C. R. Little Aircraft Works, of Pasadena, California. The design of the "Wampus-Kat" is the result of some months' study and planning on the part of G. E. Barnhart, with the financial assistance of C. R. Little, a retired business-man and aviation enthusiast. The main planes are of equal span and chord, without stagger or sweepback, and are of the folding type. The folding operation takes very little time, and is accomplished by releasing four lock pins and four master pins. Dummy or auxiliary struts are provided which properly space the upper and lower planes in relation to their fittings. There are also provided spacer bars, which tie the wings, when folded, to the fuselage at the rear outer struts.

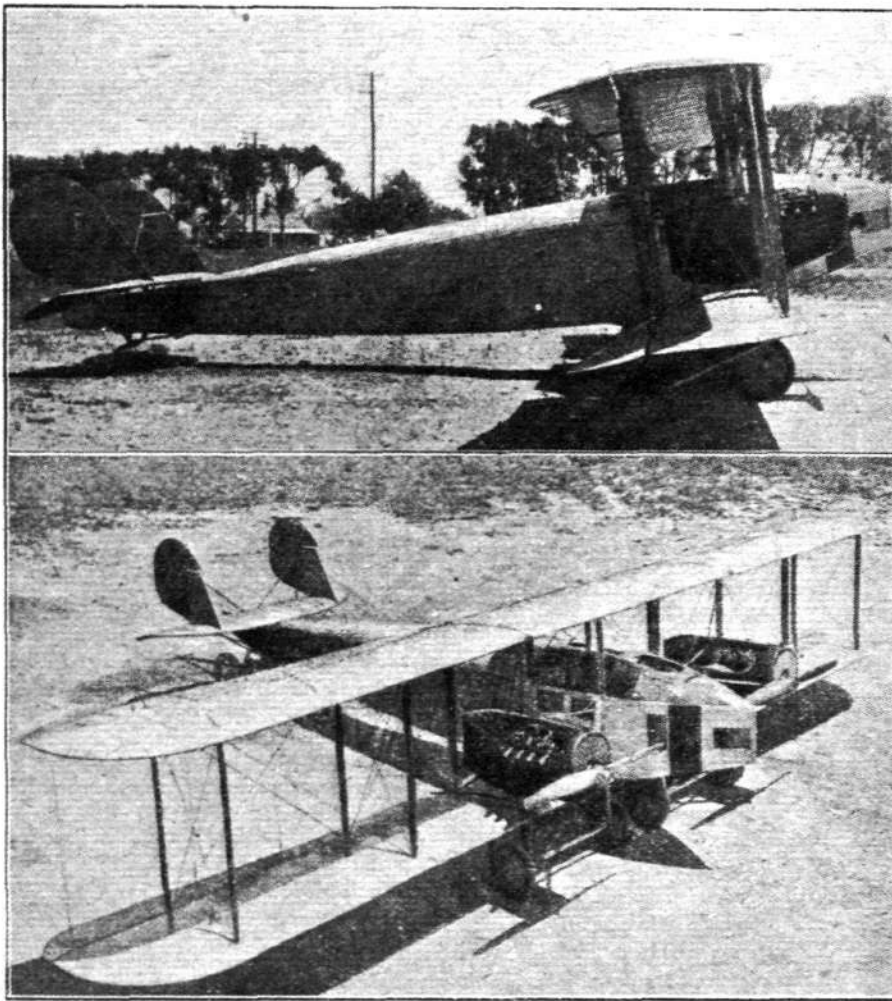
During the tests the machine, with the wings folded, was towed over very rough ground at 30 m.p.h., and there was no shake to the wings, nor was any alignment or tightening of wires required. It was also towed through streets and traffic with the wings folded back, and after arriving at the flying

field, the machine only required a matter of minutes to make ready for flight. The hinge on which the wings turn is a universal joint, so that there is little likelihood of it being overloaded due to any angularity of the wings or deflection of the spars. With the wings folded the engines are exceptionally accessible.

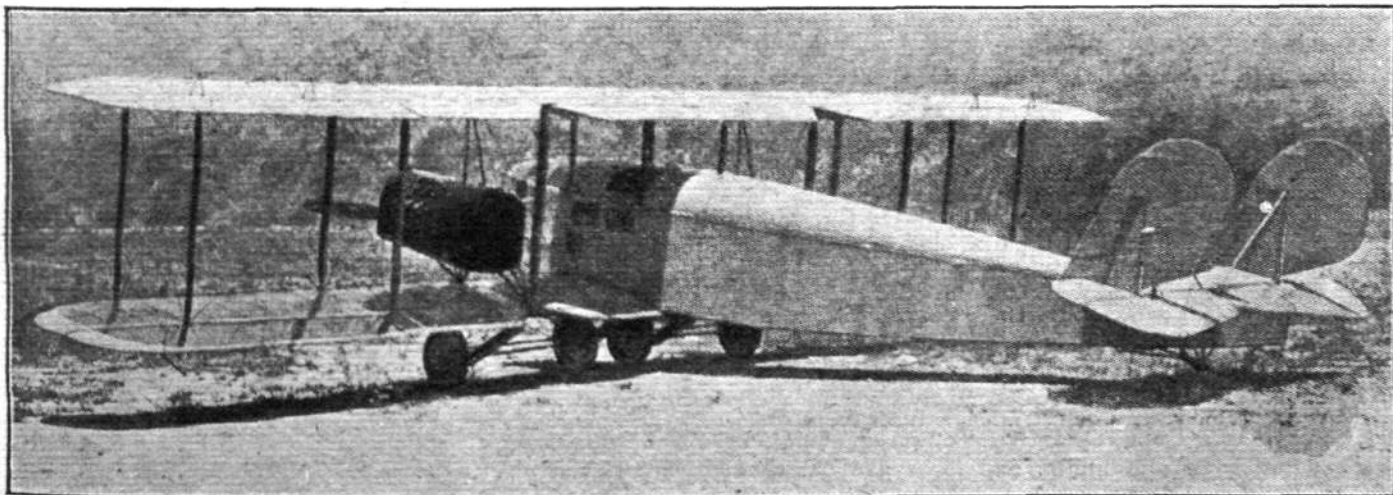
There are seven wing panels; a top centre section extending from port to starboard engine mountings; two lower centre sections running from

fuselage to engine mountings; and the four upper and lower outer panels, which are of the same shape and size. The wing section employed is R.A.F. 6A. The struts form a three-bay system with lift wires double and landing wires single; between the fuselage and engines all wires are duplicated. The main spars are of hollow box girder construction, with block external and internal strut points. These blocks are all properly tapered so as to allow the bending stress being brought in gradually to the strut points. The ribs have spruce webs with lightening holes and reinforcement for horizontal shear. The attachment to the spar is by U shear blocks, which relieve the cap strips of vertical shear load. Cap strips are of spruce with a groove for the ribs. All internal and external fittings are mild steel, of clean cut simple design for ease of production. The wings are internally braced with double steel wires and adjustable

turnbuckles. All external strut fitting bolts straddle the spar, and are prevented from sliding by special blocks and bolts through the neutral axis of the spar, which gives the fittings a permanent tie. Where the wings join the fuselage,



THE BARNHART TWIN 15 "WAMPUS-KAT." Side view (top) and three-quarter front view from above.



THE BARNHART TWIN 15 "WAMPUS-KAT." Three-quarter rear view.