

A DUNNE BIPLANE OF 1913: The panels between the wing tips were fins only and were not used as rudders, all controlling being done by the trailing-edge flaps. The castor oil smoke from the 50 h.p. Gnome engine brings back early Hendon memories. The undercarriage was by way of being a "tricycle."

## Tailless Trials

Tribute to a British Pioneer: The Dunne Biplanes and Monoplanes

By C. M. POULSEN

TO the modern generation Col. J. W. Dunne is known as the author of books such as "An Experiment with Time" and "Nothing Dies," which out-Einsteined Einstein. Only the old-timers realise that he was one of our earliest aircraft pioneers. These notes may help to show how far he was ahead of his time, aeronautically speaking.

GR<sup>EAT</sup> interest has been aroused by the article published in our issue of May 13th, 1943, in which, under the title "Turbines and the Flying Wing,"

Mr. G. Geoffrey Smith, our Managing Editor, suggested the logical combination of the tailless type of aircraft and power plants of the turbine-compressor type. Briefly, the suggestion was that instead of trying to adapt orthodox monoplanes to the new type of power plant, the aircraft might be designed around the power plant.

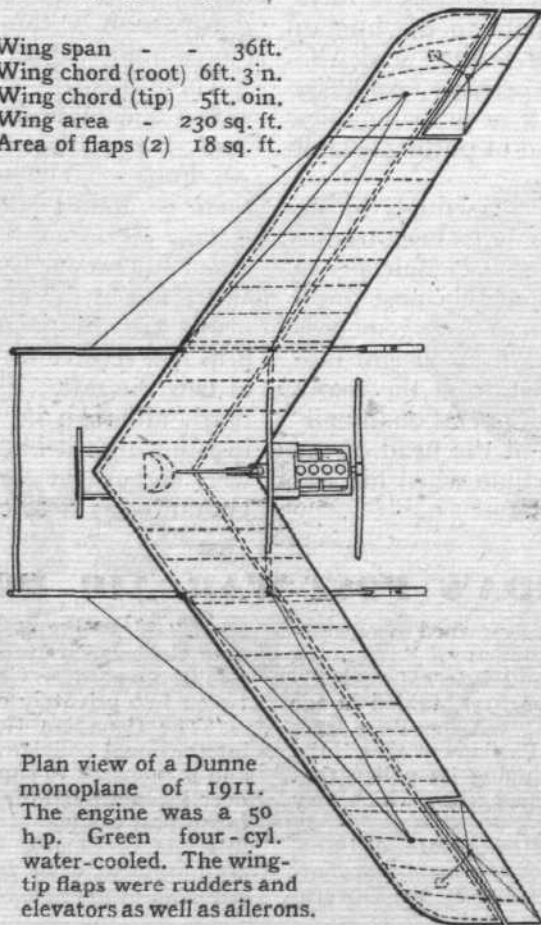
Many are the attempts that have been made to produce really practical tailless flying machines. Reference has been made to several of them in our pages in the past few months. Names such as Junkers, Dunne, Hill, Lippisch, Handley Page and Northrop, recall interesting designs. In view of the revival of interest in the tailless and its large-scale version, the "all-wing" type, it has appeared to us not only fitting that a very sincere tribute should be paid to the "father" of all tailless aircraft, Col. J. W. Dunne, but desirable that the results of his early work should again be made available to the aircraft community. It fell to *Flight* to record, from 1910 to 1913 or so, the trials and triumphs of Col. (then Lieut.) J. W. Dunne, but that was before many present readers took any interest in flying!

It is nothing short of amazing, especially in view of the relatively small progress made since, that as early as 1905 Dunne had designed his tailless monoplane wing. In the

following year he showed it to Col. Capper, of the Army Balloon Section (from which later grew the R.F.C., R.N.A.S., and R.A.F.). Col. Capper, however, asked for a biplane, and a biplane version was designed and built at Blair Atholl.

To appreciate to the full the foresight and insight of J. W. Dunne it is necessary to recall that at that time aerodynamic knowledge was almost non-existent, and what little there was had not been assimilated by the majority of aircraft experimenters. Lanchester understood, from theoretical considerations, the mechanism of lift and drag, but few of those who did the practical experiments were able to follow his reasoning, in detail at any rate. "Box Kites" were the order of the day, and speeds were so low that the problem of reducing drag scarcely entered into the picture. In this connection one may, perhaps, recall as an example of the way in which experimenters were more concerned with structural strength than with aerodynamic refinement, the famous "thrush test." It was a common saying that if, in a biplane structure, there was room for a thrush to fly between the bracing wires, another

Wing span - - - 36ft.  
Wing chord (root) 6ft. 3in.  
Wing chord (tip) 5ft. 0in.  
Wing area - 230 sq. ft.  
Area of flaps (2) 18 sq. ft.



Plan view of a Dunne monoplane of 1911. The engine was a 50 h.p. Green four-cyl. water-cooled. The wing-tip flaps were rudders and elevators as well as ailerons.