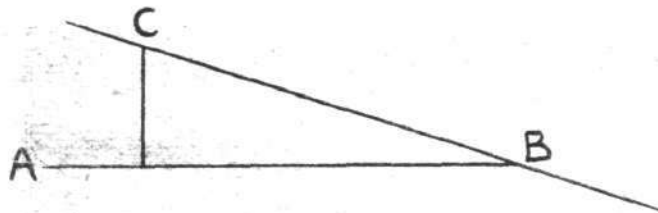


I wonder if your readers know a very simple way of finding out suitable gliding slopes. I get my gliding angles with an Ordnance map. I mean, to find suitable places—and, of course, one has to know the country—but say, for instance, one locates a suitable hill



on the map, one measures A, B, horizontal distance from map, C = AC vertical drop from map, you then draw the line C, B, and measure with protractor A, B, C, which gives the gliding angle.

	Weight. lbs.	h. p.	Area. sq. ft.	lbs. per sq. ft.	lbs. per h. p.	Pro- peller. ft. in.	r. p. m.
Antoinette ...	1,138	50	500	2.2	22	7 2	1,100
Blériot (C.-C. type)	496	20	150 <sup>3</sup> / <sub>4</sub>	3.3	24.8	6 5	1,400
Farman ...	1,212	50	410	2.9	24.2	8 3	1,200
Curtiss ...	550	30	265	2.0	18.3	6 0	1,300
Voisin ...	1,135	50	500	2.2	22.7	6 6	1,000
Wright ...	1,028	25	500	2.0	41	8 3	*450
Fernandez ...	1,050	50	500	2.1	21	6 6	1,100

\* Wright geared 33 to 9.

Belfast.

LULIAN E. BLAND.

[The many and interesting points referred to above are of a character that will surely prove most useful to our readers, who cannot fail to appreciate, as we do, the desire to be of assistance that characterises our correspondent's letters.—ED.]

[273] The table prepared by Mr. K. H. Evans, and published in your issue of December 11th is, I think, the first attempt which has been made to tabulate and compare the main dimensions of the various "flyers," and is accordingly most valuable. I feel, however, that there is a tendency to lay too much stress on the nominal horse-power of the engine fitted, and one cannot help being struck by the fact that the substitution of a more powerful engine on a given machine has usually been found to have very little effect on its performance, except possibly in the direction of increased reliability.

This being so, I do not think that such comparisons are quite fair, unless what might be called "the minimum horse-power of flight," of the aeroplane in question, is known. If this is given, then the pounds lifted per horse-power developed in that particular machine seems to me to be the true criterion of efficiency. I cannot quite agree with Mr. Evans in his proposal to introduce the area of the wings into the expression, since the question of area seems unimportant. Is it not the overall dimensions which actually tell in comparing the convenience of one machine with another?

Again, I venture to think that it is somewhat unwise to apply the word "efficiency" to any such expression, seeing that this word has already a definite and well-known meaning in mechanics. The expression "figure of merit" is one often applied in analogous cases, and would, I think, meet the case.

For the reasons just given, I do not feel that "horse-power area per pound" is really what is wanted, and it seems to me that the true figure of merit is the ratio of weight lifted to propeller-thrust, that is, the weight lifted per pound thrust. This ratio can easily be measured in the case of a finished machine, since it is equal to the cotangent of the "least gliding angle," that is, the angle with the horizontal made by the path of an aeroplane when gliding to earth, in still air, with power shut off. For example, if in coming down from a height of 100 ft. the horizontal distance travelled over is 1,000 ft., the gliding angle is 1 in 10, and the "figure of merit" would consequently be 10. A very usual figure is 6 or 7; anything less than 4 must be considered as bad, and anything more than 8 is exceptionally good.

It would be extremely useful if makers could be induced to furnish this figure for their machines, but I have always, in the past, found them very reticent on this particular point.

KENELM EDGCUMBE.

[The above most interesting and valuable letter draws attention to matters which will certainly have to be investigated in the near future by those who are really working seriously at the problem of flight. So soon as aviators get accustomed to their machine and the first glamour of the air has worn off, a little experimental flying with a view to establishing reliable data relating to gliding angles and other matters of fundamental importance will, we hope, be strenuously practised.—ED.]

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