

Fig. 4 : Proposed design for man-powered aeroplane

"As regards external wing struts and wires, it is unlikely that we could reduce the resistance of the struts by much, but it is probable that the resistance of the wires (about 30 lbs. out of the 68 for struts and wires) could be reduced by about 60 per cent., by improving the section of the wires, and burying all the end fittings. This would reduce strut and wire drag from 68 lbs. to 50 lbs.

"It is probable that the resistance of all the wires and necessary pylons for the monoplane form, previously referred to, would not be greater than this biplane figure of 50 lbs., but the wing structure weight would certainly go up. It is also quite conceivable that tapered cantilever wings might be used, with as low a lift/drag ratio as the biplane surface (i.e., 18), and that the strut and wire drag could thereby be washed out. But again it is quite certain that the weight of such wings would be greater than that of externally braced

ones. The matter being so indeterminate therefore (particularly as we know little about the efficiency of full size wings and practically nothing about tapered wings), it is safest to say that the best we ought to expect is a reduction in drag of wings, struts and wires of about 28 lbs.

"Now all these aerodynamic improvements are present-day possibilities, and could all be on one and the same machine. On this 'perfected' machine we should have the following drags, at 101.3 m.p.h. :-

	Lbs.
Body .. .. .	125
Landing gear .. .. .	0
Tail unit .. .. .	39
Wings with external struts and wires ..	403
	<hr/>
	567

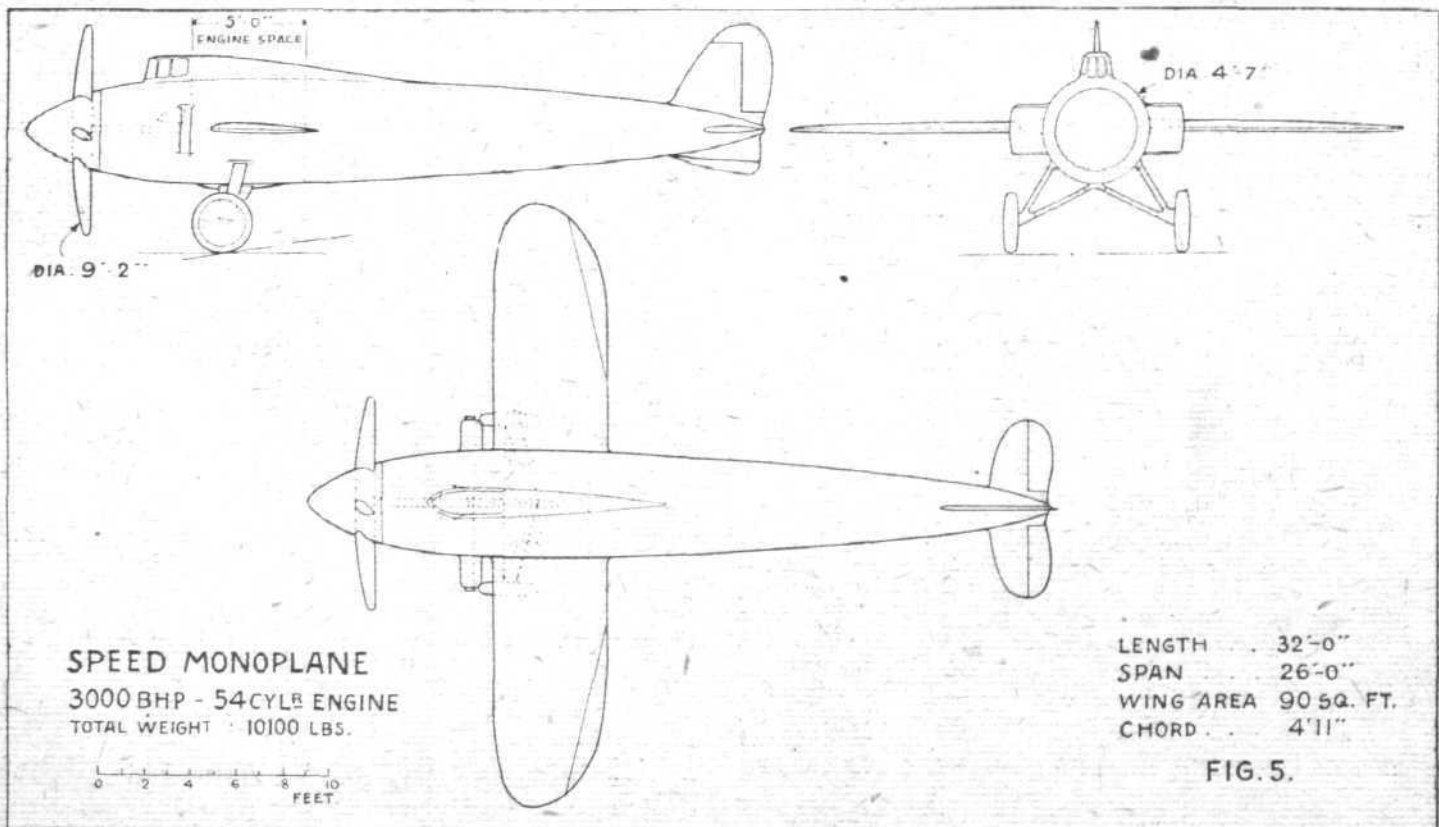


Fig. 5 : Proposed design for speed monoplane