

# New Date for the Gas Pipe Aeroplane

by Paul R. Hare

IT HAS BEEN GENERALLY ACCEPTED, at least until now, that the Royal Aircraft Factory's BE10 was designed during the middle of 1915, although there is a lot of evidence, much of which was not available when the type was first described in print, which clearly indicates otherwise.

This date, mid 1915, was presumably decided upon because, since the Royal Aircraft Factory always applied its type numbers sequentially, the design must logically have come after the BE9 'Pulpit' which has also generally been accepted to have been conceived in the late spring/early summer of 1915, when it was actually built. But perhaps that design was also conceived earlier than previously thought, although that is another story! What is now apparent is that the project that became BE10 was first conceived as early as the end of 1913.

Never complacent, the Royal Aircraft Factory continually sought to develop and improve upon its designs whenever possible. As a result of this policy the BE2 series ranged through variants 'a' to 'e' and the FE2 from 'a' to 'h', each new model designed to be, in some way, better than the previous one. Following completion of the RE1, the first inherently stable aeroplane, (see CCI 40/4) its designer, E.T. Busk, began work on a successor, initially designated the RE1A. This was obviously a new variant as he still issued occasional memos<sup>1</sup> relating to the original RE1 short (607) and long body (608) under those type descriptions, whilst continuing to work on RE1A as a separate design.

The new design was based on the RE1 fuselage but with the addition of a wing structure inspired by that eventually used on the SE4, that was then being developed, and an oleo undercarriage as used on the early FE2b, thereby

combining the most advanced features of several Royal Aircraft factory designs into a single machine. Work on the RE1A appears to have started soon after the completion of the second RE1 in September 1913 and by the middle of December was sufficiently advanced for the preparation of general arrangement drawings to have begun since, on 15 December, Busk advised<sup>2</sup> Mr Thrupp in the Drawing Office that the dihedral angle should be 175 degrees (i.e. a 2½ degree rise on each wing) and four days later sent a memo<sup>3</sup> to Mr S. Hiscocks, the Factory's Chief Draughtsman, stating that the fin area should be 4 square feet rather than 3 as shown on a previous drawing, but that the 10½ square feet, rudder as shown was sufficient. However, in a later memo he further reduced fin area to 2 square feet.

In a further memo, sent on 3 January 1914, Busk instructed Mr Thrupp that the machine's centre of gravity should be 22 inches behind the leading edge of the lower wing, (i.e. at approximately 35% chord), separately advising Mr Hiscocks that this position had been calculated from pitching information obtained from testing the RE1 (Short).

Meanwhile, whilst the drawing office, acting under Busk's instruction and Hiscocks' supervision, was hard at work on the preliminary layout drawings Henry Folland was carrying out page after page of calculations, calculating loads and checking stresses. His first forty or so pages<sup>4</sup> of such work each bear the title RE1A.

However, when, at some point, the type's designation was changed from RE1A to BE10, Folland meticulously revised the heading on each previously completed page of his notebook before continuing his calculations under the new designation. The reason for the change is unrecorded but

*The original, short body, R.E.1, the first fully stable aeroplane, the fuselage of which provided the basis for that of the RE1A/ BE10 with E.T. Busk being responsible for both designs.*

: CCI Archive

