

navigation in some chapters and partly to an excess of effort on the part of the author to make his work comprehensive. Apart from this, however, Mr Allison has approached a rather difficult subject in the right spirit and has obviously, and quite rightly, taken the view that an elementary book is intended to produce clear and concise explanation rather than to add to existing knowledge. The style is excellent and the text is, in general, easy and interesting to read. The diagrams are well chosen and clearly drawn, while various minor diversions into history help to hold the reader's interest. This book will certainly not supplant existing works on navigation, but it may well supplement them.

H. J. PURSEY

## Correspondence

### BLIND LANDING AIDS

(from Squadron Leader J. F. Davis, D.F.C.)

SIR,

The letter from Mr Vivian in the April number of the *Journal* will, I venture to hope, stimulate discussion on the important problem of providing a suitable blind landing aid for aircraft. May I make one or two remarks which may help to prevent misunderstanding about the nature of the problem to be solved?

It is important to understand that there are at present no blind *landing* aids. scs 51, GCA, &c., will get aircraft down with safety to a height of somewhere round 150–200 feet; below that height the aircraft has to be controlled and landed visually. The existing aids are, therefore, *approach* aids. The distinction may seem to be academic but is in fact important. New factors are introduced when the aircraft is within some 200 feet of the ground. Whereas, on the approach, the aircraft has been descending at some 10 feet per second, it must now be so controlled that it has little or no rate of descent when it reaches the level of the runway; it must be so accurately controlled in azimuth that it touches down on the runway and not on the grass beside the runway; it must touch down with a high degree of accuracy at or near the down-wind end of the runway; drift due to cross-wind should be allowed for. And so on. The blind landing problem must therefore be treated as at least a more advanced form of the blind approach problem.

It is possible, of course, that one aid may be used both for approach and for landing. However, I think it is true to say that the approach aids we know now are not readily adaptable as landing aids and we may have to have an additional aid specially for landing. The problem is not, therefore, one of choosing between a number of existing and proposed devices (as is, I think, implied by Mr Vivian in his letter) but one of *finding* a landing aid.

J. F. DAVIS.

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