

Correspondence

A CRITICAL TABLE FOR SEXTANT CORRECTIONS

SIR,

Reference the article under the above title by A. N. Black in the October issue of the *Journal* (Vol. 2, No. 4, p. 342), Mr. Black's correction of the equation for the centring error as actually measured is accepted, but I would like to remark that there are two cases to be considered. First, the case of the owner of a sextant with a certificate made out in the present form which he wishes to convert to critical form; second, the case of a testing laboratory, such as the N.P.L., concerned with the issue of new certificates. Mr. Black's article covers the first case only. The equation is not essential to case 2 for it is understood that the method normally employed to obtain the errors at fixed points could equally well be used to read off the angles at the critical error points. As Mr. Black suggests, it would probably be perfectly acceptable to have the critical points given at whole degrees.

Yours truly,

J. P. G. WORLEDGE.

THE ACCURACY REQUIREMENTS OF AN EN-ROUTE AID

SIR,

Recent meetings of the Institute have, to my mind, underlined the divergence of air navigators' opinions concerning the accuracy requirements of a modern en-route navigational aid. Views fall between two extremes:

- (a) An en-route aid is unnecessary, provided that good coverage for homing exists at terminal points;
- (b) Fast and high flying aircraft require as high a degree of fixing accuracy as possible.

A third view is that position determination is not, primarily, a requirement at all; the navigator needs to know, first and foremost, what to do and not where he is.

It must be extremely baffling for the instrument manufacturer to note this disparity of opinion. In an endeavour to reconcile the various viewpoints (an effort which may well lead to some controversy) will you permit me to advance some arguments in favour of a compromise solution?

Given that aids of high accuracy will always be required for special purposes (e.g. homing and control of aircraft, precision bombing, &c.), there will nevertheless be vast areas of the Earth's surface, both for civil and military operations, where this high precision cannot be efficiently employed. In such areas, an optimum threshold figure of the order of ten nautical miles (95% fixing error) has been suggested for position determination.² It would appear that any advance on this is in the nature of a luxury; a competent navigator would certainly have no difficulty in undertaking a voyage using a reliable aid of this nature.

Taking first the question of fuel economy, it is known that on long flights a departure from the great circle route of 20 miles would have negligible effect on the fuel consumed. In any case, there is no sanctity in the great circle track;