the total inflow; but I believe most airscrew designers will agree with me that in general this is found to over-estimate the mutual interference of the blades.

Yours faithfully,

R. McKINNON WOOD.

Royal Aircraft Establishment,
South Farnborough.
12th November, 1920.

To the Editor of the AERONAUTICAL JOURNAL.

The recent publication of R. and M. 639 (R. McK. Wood, Bradfield and Barber, September, 1919) on the application of multiplane interference to airscrew design, suggests some remarks on recent contributions to your Journal by Dr. Watts, Mr. Riach and Dr. Bothezat.

Taking first Dr. Watts' superposition of Drzewiecki's pulsating inwash disturbance repeated in two, three, four-phase distribution round the cycle, Mr. Riach put a query not yet answered.

The present writer ventured to apply the method for the two-phase distribution only, in which case one or both components are small round the whole cycle compared with the maximum value, so that the error arising from taking the arithmetic sum as the actual physical resultant is probably in small excess.

In Dr. Watts' extension to multiblade screws the error will probably be in serious excess, the superficial analogy with superposition of torques in a multi-cylinder engine being clearly unsound.

Turning to Dr. Bothezat's suggestion that the existence of inflow is denied altogether, he has surely not taken pains to consider the very simple physical view that inwash (in the absence of conserved energy in closed circuits round the air-screw) is very closely analogous to downwash in a continuous series of aerofoils in tandem.

This view receives strong encouragement from the report cited.

There will always remain, of course, small discrepancies in the analogy, and consequently in the test results, and these will only yield to suitable special methods.

With Dr. Bothezat's complaint of inadequate references, the writer has much sympathy.

The trouble arises in the aeronautical literature of all countries, partly from the youth of the science with its faults of inexperience and self-sufficiency, to be cured by time alone, partly from the struggle for place and award, inseparable from organised and industrial research, to be moderated only by abolishing ambition from human nature.

Later, a more detached survey by pure scientists may be a fairly effective check on mere intellectual dishonesty. Meanwhile, let us practise and welcome independent criticism.

In conclusion, one would like to see fuller recognition of Osborne Reynolds in Dr. Bothezat's own references.

A. R. Low.

London, November, 1920.