ABSTRACT

An attempt has been made to develop numerical methods for the various problems associated with low speed flow past wings and wing-body combinations under steady and oscillatory conditions. The methods are based on distribution of singularities. The methods are applied to the following flow problems:

i) characteristics of wing-fuselage and wing-fuselage-tailplane-fin combinations in attached flow situation,

ii) characteristics of slender wings, bodies and wing-body combinations in separated flow situation,

iii) oscillating thin wings and control surfaces, and

iv) oscillating thick wings, control surfaces and wing-fuselage combination.

Computer program suitable for commonly available micro/mini computers have been developed in FORTRAN 77 for all these cases. To assess the accuracy of the methods the computed results have been compared with available theoretical and experimental values.

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