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Standard British method of performance reduction for piston-engined aircraft with constant-speed propellers

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STANDARD BRITISH METHOD OF PERFORMANCE REDUCTION FOR PISTON-ENGINED AIRCRAFT WITH CONSTANT-SPEED PROPELLERS

1. NOTATION AND UNITS

A	aspect ratio $= b^2/S$	–
B	absolute boost pressure	lbf/in^2
b	aircraft span	ft
C	supercharger constant, defining the variation of supercharger pressure ratio with temperature	–
c	cylinder compression ratio	–
C_D	total drag coefficient	–
C_{DZ}	a constant in Equation (3.2)	–
C_P	propeller power coefficient	–
D_{100}	the part of the drag at 100 ft/s at sea level corresponding to C_{DZ} ($=11.88SC_{DZ}$)	lbf
J	propeller advance ratio	–
K	constant defined by Equation (3.2), sometimes called “the induced drag factor”	–
P	power supplied to propellers	hp
P_F	friction power at zero density	hp
p	static air pressure	lbf/in^2
Q	fuel flow	gal/hr
r	supercharger pressure ratio	–
r_0	value of r at 15°C	–
S	wing area	ft^2
T	air temperature	K
V	true airspeed	knot
V_i	equivalent airspeed $= V\sqrt{\sigma}$	knot

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