

The following material presents a standard terminology for various pressures and temperatures throughout the induction system of an aircraft engine. Figures 1, 2 and 3 show, schemetically, the location of these pressures and temperatures.

I. PRESSURE AND TEMPERATURE SYMBOLS.

Pressure Symbol	Location in Engine Induction System See Figures 1, 2 & 3	Temperature Symbol
P_a	Free Atmosphere	t_a
P_e	Exhaust pipe or manifold	t_e
P_p	Intake Port	t_p
P_m	Intake Manifold	t_m
P_d	Main - Stage Supercharger Discharge	t_d
P_{d1}	First Auxiliary - Stage Supercharger Discharge, etc.	t_{d1}
P_b	Main - Stage Supercharger Entrance	t_b
P_{b1}	First Auxiliary - Stage Supercharger Entrance, etc.	t_{b1}
P_c	Carburetor or Main Stage Air Throttle Entrance	t_c
P_r	Intake Airscoop	t_r
P_u	Engine Air Duct into the Intercooler	t_u
P_f	Engine Air Duct from the Intercooler	t_f
P_k	Cooling Air into the Intercooler	t_k
P_h	Cooling Air from the Intercooler	t_h
P_n	Turbo Nozzle - Box	t_n
P_v	Partial Pressure of Water Vapor in Air:-Wet- Bulb Temperature in Air	t_v

II. GENERAL SYMBOLS FOR INDUCTION SYSTEM

P	Total Pressure
p	Static Pressure
t	Degrees F.
T	Degrees F. Abs. or Degrees R.

III. SUBSCRIPTS

i	"Observed" or Indicated Conditions
s	"Standard" Conditions
1	First Auxiliary Stage Supercharger
2 etc	Other Auxiliary Stages
	Engine Main Stage Supercharger (No subscript)

CANCELLED

REAFFIRMED

MAY '95

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IV. OTHER GENERAL SYMBOLS

Symbol	Designation of Symbol
C	Supercharger Parameter, $\frac{v^2}{6088T_b}$ + 1 2.53
D	Engine Displacement, cu. in.
N	Engine Crank Speed, rpm.
P	Total Pressures, in. hg.
Q	Volumetric Flow Rate, cu.ft./min.
R	Gas Constant
V	Impeller Tip Velocity, ft./sec.
W	Engine Mass Air Flow, lb./hr.
Y	Supercharger Parameter, $\left[\frac{p_d}{p_b}\right]^{\frac{k-1}{k}} - 1$
Z	Airplane Altitude, Feet
F/A	Fuel - Air Ratio
c_p	Specific Heat of air at constant pressure
c_v	Specific Heat of air at constant volume
g	Acceleration of gravity, ft./sec. ²
k	c_p/c_v
n	Supercharger impeller speed, rpm.
p	Static pressure, in. hg.
q	Dynamic pressure, lb./sq.ft.
v	Specific volume of air, cu.ft./lb.
hp	Horsepower
bhp	Brake horsepower
fhp	Friction horsepower
ihp	Indicated horsepower
psi	Pounds per square inch
mep	Mean effective pressure, psi
bmep	Brake mean effective pressure, psi
fmep	Friction mean effective pressure, psi
imep	Indicated mean effective pressure, psi
sfc	Specific fuel consumption, lb/hp/hr.
isfc	Indicated specific fuel consumption, lb/ihp/hr
bsfc	Brake specific fuel consumption, lb/bhp/hr.
sac	Specific air consumption, lb/hp/hr.
isac	Indicated specific air consumption, lb/ihp/hr.
bsac	Brake specific air consumption, lb/bhp/hr.
δ	Air density, lb/cu.ft.
η	Supercharger Pressure Coefficient
ϕ	Supercharger Temperature Coefficient
θ	Supercharger Density Coefficient
λ	Supercharger Shaft Efficiency
ρ	Air Density, slugs/cu.ft.
σ	Density Ratio