Absolute Temperature	518.67 F Abs
Gravity	32.1740 ft per (sec) (sec)
Density	0.076505 lb per cu ft

Values of pressure and temperature are listed in Table 6 for altitudes in the standard atmosphere from −1000 to 50,000 ft above sea level. For further explanation, References 9 and 10 should be consulted.

LETTER SYMBOLS USED IN CHAPTER 3

μ = degree of saturation (decimal).

ρ = density of fluid, pounds per cubic foot.

φ = relative humidity (decimal).

a = ratio of apparent molecular weight of dry air (28.966) to the molecular weight of water (18.016) = 1.6078.

A = coefficient from Table 5 for use in Equation 30 (obtained from Table 5).

B = coefficient to be used in Equation 31 (obtained from Table 5).

C = coefficient for use in Equation 32 (obtained from Table 5).

f_s = factor accounting for effect of mixing air and water, dimensionless.

G = flow rate of dry air, pounds per hour.

G_1 = flow rate of dry air, pounds per minute.

G_w = rate of evaporation of water, pounds per minute.

H = enthalpy of the system.

H = enthalpy of the flowing medium, Btu per pound of dry air.

h = enthalpy of moist air, Btu per pound of dry air.

$\bar{h}$ = enthalpy correction term to be added above 150 F, to enthalpy.

h_a = specific enthalpy of dry air, Btu per pound.

$h_{as} = h_s - h_a$ = the difference between the enthalpy of moist air *at saturation* per pound of dry air, and the specific enthalpy of the dry air itself, Btu per pound of dry air.

h_g = enthalpy of saturated water vapor, Btu per pound.

h_s = enthalpy of moist air at saturation per pound of dry air, Btu per pound of dry air.

h_s^* = enthalpy of moist air at saturation at *thermodynamic wet-bulb temperature*, t^* Btu per pound of dry air.

h_w = specific enthalpy of condensed water (liquid or solid) at standard pressure, Btu per pound water.

h_w^* = specific enthalpy of water as added at the *thermodynamic wet-bulb temperature* t^*, Btu per pound of dry air.

h_{wl} = enthalpy of liquid water, Btu per pound.

h_{ws} = enthalpy of solid water, Btu per pound.

KE = average kinetic energy, Btu per pound.

$\overline{KE}$ = average kinetic energy, Btu per pound.

L = flow rate of liquid water, pounds per hour.

m = weight of dry air crossing any duct section, pounds per minute.

n_a = mols dry air.

n_s = mols of water vapor at saturation.

n_w = mols of water vapor.

P = absolute pressure.

P_a = atmospheric pressure, inches Hg.

LETTER SYMBOLS (Continued)

P_o = standard atmospheric pressure by definition 29.921 in. Hg.

P_s = saturation pressure of pure water at prevailing temperature.

p = total pressure of a mixture of air and water vapor, pounds per square inch or inches Hg.

p_a = partial pressure of dry air, pounds per square inch or inches Hg.

p_s = saturation pressure of pure water vapor, pounds per square inch or inches Hg.

p_w = partial pressure of water vapor in mixture of air and water vapor, pounds per square inch or inches Hg.

PE = potential energy, Btu per pound dry air.

$\overline{PE}$ = average potential energy, Btu per pound dry air.

Q = total heat added or subtracted, between sections, Btu per minute.

q = ratio of energy added (or removed) to water added (or removed), Btu per pound. Also called specific enthalpy of *water added*.

$_1q_2$ = energy added between points 1 and 2.

$_1q_2$ = heat added between sections 1 and 2, Btu per pound dry air.

R = universal gas constant, 1545 foot-pounds per (Fahrenheit degree) (mol).

R_a = gas constant for dry air.

R_w = gas constant for water vapor.

S = flow rate of solid water, pounds per hour.

s = entropy of moist air per pound of dry air, Btu per (pound) (Fahrenheit degree).

$\bar{s}$ = correction to be added to entropy of moist air obtained from Table 2.

$\bar{\bar{s}}$ = additional correction to be added to entropy because of "mixing entropy" (obtained from Table 5). Correction to be added to value of s obtained from Table 2.

s_a = specific entropy of dry air, Btu per (pound) (Fahrenheit degree, absolute).

s_{as} = the difference between the entropy of moist air *at saturation* per pound of dry air, and the specific entropy of the dry air itself, Btu per (pound of dry air) (Fahrenheit degree, absolute).

s_s = entropy of moist air at saturation per pound of dry air, Btu per (pound of dry air) (Fahrenheit degree, absolute).

s_w = specific entropy of condensed water (liquid or solid) at standard atmospheric pressure, Btu per (pound of water) (Fahrenheit degree, absolute).

T = absolute temperature, Fahrenheit degrees.

T_o = standard atmospheric temperature, by definition 518.4 F absolute.

t = temperature, Fahrenheit degrees.

t^* = thermodynamic wet-bulb temperature, Fahrenheit degrees.

U = internal energy of system.

U = internal energy.

V = volume.

$\bar{V}$ = average velocity, feet per minute.

v = volume of moist air per pound of dry air, cubic feet per pound.

$\bar{v}$ = correction to be added to volume of moist air per pound of dry air, above 150 F.

v_a = specific volume of dry air, cubic feet per pound.