to Equations 29 and 33. For further explanation, reference (7) should be consulted.

TABLE 5. PRESSURE AND TEMPERATURE FOR ALTITUDES IN U. S. STANDARD ATMOSPHERE

ALTITUDE FEET Z	PRESSURE IN. OF HG P	TEMP F t
− 1,000	31.02	+62.6
− 500	30.47	+60.8
0	29.921	+59.0
+ 500	29.38	+57.2
+ 1,000	28.86	+55.4
+ 5,000	24.89	+41.2
10,000	20.58	+23.4
15,000	16.88	+ 5.5
20,000	13.75	−12.3
25,000	11.10	−30.1
30,000	8.88	−47.9
35,000	7.04	−65.8
40,000	5.54	−67.0
45,000	4.36	−67.0
50,000	3.436	−67.0

LETTER SYMBOLS USED IN CHAPTER 3

μ = degree of saturation or per cent saturation.

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 4 for use in Equation 4a (obtained from Table 4).

B = coefficient to be used in Equation 5a (obtained from Table 4).

C = coefficient for use in Equation 6a (obtained from Table 4).

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

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

h_v = velocity pressure, inches of water at 60 F.

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.

K = Kelvin degrees.

KE = kinetic energy, Btu per pound.

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

l = shaft work withdrawn, Btu per pound of air.

${}_1l_2$ = shaft work withdrawn between sections 1 and 2, Btu per pound of air.

LETTER SYMBOLS (Continued)

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

m_1, m_2, m_3 = weights of dry air convected across sections F_1, F_2, F_3 respectively, pounds per minute.

M = weight of dry air withdrawn with inside air, pounds per hour.

n_a = mols of dry air.

n_w = mols of water vapor.

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

p_a = partial pressure of 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.

P = atmospheric pressure, inches Hg.

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

PE = potential energy, Btu per pound dry air.

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

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

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

${}_Aq_B$ = heat added between sections A and B per pound of dry air, Btu per pound.

${}_AQ_B$ = total heat added between sections A and B, Btu per minute.

ΔQ = energy to be removed from or added to conditioned space, Btu per hour.

R = universal gas constant.

R_a = gas constant for dry air.

R_w = gas constant for water vapor.

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 Equation 6.

$\bar{\bar{s}}$ = additional correction to be added to entropy because of "mixing entropy" (obtained from Table 4). Correction to be added to value of s obtained from Equation 6.

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

t(F) = temperature, Fahrenheit degrees.

T = absolute temperature, Fahrenheit degrees.

T_o = standard atmospheric temperature, by definition 288 Kelvin degrees.

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.