

APPENDIX A

Atmospheric Tables (ICAO Standard Atmosphere)

TABLE A.1
Geometric altitude (metric units)

H_G , m	H , m	T , °K	P , N/m ²	P/P_0	ρ , kg/m ⁻³	ρ/ρ_0	a , m/s	ν , m ² /s
0	0	288.150	1.01325 +5	1.00000 +0	1.2250 +0	1.0000 +1	340.294	1.4607 -5
1,000	1,000	281.651	8.9876 +4	8.87009 -1	1.1117 +0	9.0748 -1	336.435	1.5813 -5
2,000	1,999	275.154	7.9501 +4	7.84618 -1	1.0066 +0	8.2168 -1	332.532	1.7147 -5
3,000	2,999	268.659	7.0121 +4	6.92042 -1	9.0925 -1	7.4225 -1	328.583	1.8628 -5
4,000	3,997	262.166	6.1660 +4	6.08541 -1	8.1935 -1	6.6885 -1	324.589	2.0275 -5
5,000	4,996	255.676	5.4048 +4	5.33415 -1	7.3643 -1	6.0117 -1	320.545	2.2110 -5
6,000	5,994	249.187	4.7217 +4	4.66001 -1	6.6011 -1	5.3887 -1	316.452	2.4162 -5
7,000	6,992	242.700	4.1105 +4	4.05677 -1	5.9002 -1	4.8165 -1	312.306	2.6461 -5
8,000	7,990	236.215	3.5651 +4	3.51854 -1	5.2579 -1	4.2921 -1	308.105	2.9044 -5
9,000	8,987	229.733	3.0800 +4	3.03979 -1	4.6706 -1	3.8128 -1	303.848	3.1957 -5
10,000	9,984	223.252	2.6500 +4	2.61533 -1	4.1351 -1	3.3756 -1	299.532	3.5251 -5
11,000	10,981	216.774	2.2700 +4	2.24031 -1	3.6480 -1	2.9780 -1	295.154	3.8988 -5
12,000	11,977	216.650	1.9399 +4	1.91457 -1	3.1194 -1	2.5464 -1	295.069	4.5574 -5
13,000	12,973	216.650	1.4170 +4	1.63628 -1	2.6660 -1	2.1763 -1	295.069	5.3325 -5
14,000	13,969	216.650	1.4170 +4	1.39851 -1	2.2786 -1	1.8600 -1	295.069	6.2391 -5
15,000	14,965	216.650	1.2112 +4	1.19534 -1	1.9475 -1	1.5898 -1	295.069	7.2995 -5
16,000	15,960	216.650	1.0353 +4	1.02174 -1	1.6647 -1	1.3589 -1	295.069	8.5397 -5
17,000	16,955	216.650	8.8496 +3	8.73399 -2	1.4230 -1	1.1616 -1	295.069	9.9902 -5
18,000	17,949	216.650	7.5652 +3	7.46629 -2	1.2165 -1	9.9304 -2	295.069	1.1686 -4
19,000	18,943	216.650	6.4674 +3	6.38291 -2	1.0400 -1	8.4894 -2	295.069	1.3670 -4
20,000	19,937	216.650	5.5293 +3	5.45700 -2	8.8910 -2	7.2579 -2	295.069	1.5989 -4
21,000	20,931	217.581	4.7274 +3	4.66709 -2	7.5715 -2	6.1808 -2	295.703	1.8843 -4
22,000	21,924	218.574	4.0420 +3	3.99456 -2	6.4510 -2	5.2661 -2	296.377	2.2201 -4
23,000	22,917	219.567	3.4562 +3	3.42153 -2	5.5006 -2	4.4903 -2	297.049	2.6135 -4
24,000	23,910	220.560	2.9554 +3	2.93288 -2	4.6938 -2	3.8317 -2	297.720	3.0743 -4
25,000	24,902	221.552	2.6077 +3	2.51588 -2	4.0084 -2	3.2722 -2	298.389	3.6135 -4
26,000	25,894	222.544	2.1632 +3	2.15976 -2	3.4257 -2	2.7965 -2	299.056	4.2439 -4
27,000	26,886	223.536	1.8555 +3	1.85539 -2	2.9298 -2	2.3917 -2	299.722	4.9805 -4
28,000	27,877	224.527	1.5949 +3	1.59506 -2	2.5076 -2	2.0470 -2	300.386	5.8405 -4
29,000	28,868	225.518	1.3737 +3	1.37224 -2	2.1478 -2	1.7533 -2	301.048	6.8438 -4
30,000	29,859	226.509	1.1855 +3	1.18138 -2	1.8410 -2	1.5029 -2	301.709	8.0134 -4

TABLE A.2
Geometric altitude (English units)

H_G , ft	H , ft	T , °R	P , lb/ft ²	P/P_0	ρ , slug/ft ⁻³	ρ/ρ_0	a , ft/s	ν , ft ² /s
0	0	518.670	2.1162 +3	1.00000 +0	2.3769 -3	1.0000 +0	1116.45	1.5723 -4
2,500	2,500	509.756	1.9319 +3	9.12910 -1	2.2079 -3	9.2887 -1	1106.81	1.6700 -4
5,000	4,999	500.843	1.7609 +3	8.32085 -1	2.0482 -3	8.6170 -1	1097.10	1.7755 -4
7,500	7,497	491.933	1.6023 +3	7.57172 -1	1.8975 -3	7.9832 -1	1087.29	1.8896 -4
10,000	9,995	483.025	1.4556 +3	6.87832 -1	1.7556 -3	7.3859 -1	1077.40	2.0132 -4
12,500	12,493	474.120	1.3200 +3	6.23741 -1	1.6219 -3	6.8235 -1	1067.43	2.1472 -4
15,000	14,989	465.216	1.1948 +3	5.64587 -1	1.4962 -3	6.2946 -1	1057.36	2.2927 -4
17,500	17,485	456.315	1.0794 +3	5.10072 -1	1.3781 -3	5.7977 -1	1047.19	2.4509 -4
20,000	19,981	447.415	9.7327 +2	4.59912 -1	1.2673 -3	5.3316 -1	1036.93	2.6233 -4
22,500	22,476	438.518	8.7576 +2	4.13834 -1	1.1634 -3	4.8947 -1	1026.57	2.8113 -4
25,000	24,970	429.623	7.8633 +2	3.71577 -1	1.0663 -3	4.4859 -1	1016.10	3.0167 -4
27,500	27,464	420.730	7.0447 +2	3.32892 -1	9.7544 -4	4.1039 -1	1005.53	3.2416 -4
30,000	29,957	411.839	6.2962 +2	2.97544 -1	8.9068 -4	3.7473 -1	994.85	3.4882 -4
32,500	32,449	402.950	5.6144 +2	2.65305 -1	8.1169 -4	3.415 -1	984.05	3.7591 -4
35,000	34,941	394.064	4.9934 +2	2.35962 -1	7.3820 -4	3.1058 -1	973.14	4.0573 -4
37,500	37,432.5	389.970	4.4312 +2	2.09396 -1	6.6196 -4	2.7850 -1	968.08	4.48535 -4
40,000	39,923	389.970	3.9312 +2	1.85769 -1	5.8727 -4	2.4708 -1	968.08	5.0560 -4
42,500	42,413.5	389.970	3.4878 +2	1.64816 -1	5.2103 -4	2.1921 -1	968.08	5.69855 -4
45,000	44,903	389.970	3.0945 +2	1.46227 -1	4.6227 -4	1.9449 -1	968.08	6.4228 -4
47,500	47,392.5	389.970	2.7456 +2	1.29742 -1	4.1015 -4	1.7256 -1	968.08	7.2391 -4
50,000	49,880	389.970	2.4361 +2	1.15116 -1	3.6391 -4	1.5311 -1	968.08	8.1587 -4

H_G , ft	H , ft	T , °R	P , lb/ft ²	P/P_0	ρ , slug/ft ⁻³	ρ/ρ_0	a , ft/s	ν , ft ² /s
52,500	52,368.5	389.970	2.1615 +2	1.02143 -1	3.2290 -4	1.3585 -1	968.08	9.19505 -4
55,000	54,855	389.970	1.9180 +2	9.06336 -2	2.8652 -4	1.2055 -1	968.08	1.0363 -3
57,500	57,341.5	389.970	1.7019 +2	8.04248 -2	2.5424 -4	1.0697 -1	968.08	1.1678 -3
60,000	59,828	389.970	1.5103 +2	7.13664 -2	2.2561 -4	9.4919 -2	968.08	1.3160 -3
62,500	62,313.5	389.970	1.3402 +2	6.33315 -2	2.0021 -4	8.4232 -2	968.08	1.483 -3
65,000	64,798	389.970	1.1893 +2	5.62015 -2	1.7767 -4	7.4749 -2	968.08	1.6711 -3
67,500	67,282.5	390.8835	1.0555 +2	4.98815 -2	1.5767 -4	6.6188 -2	969.21	1.891 -3
70,000	69,766	392.246	9.3672 +2	4.42898 -2	1.3993 -4	5.8565 -2	970.90	2.1434 -3
72,500	72,249	393.6085	8.3134 +1	3.93432 -2	1.2419 -4	5.1843 -2	972.58	2.4283 -3
75,000	74,731	394.971	7.3784 +1	3.49635 -2	1.1022 -4	4.5914 -2	974.26	2.7498 -3
77,500	77,213	396.3325	6.5487 +1	3.10856 -2	9.7829 -5	4.0168 -2	975.94	3.1125 -3
80,000	79,694	397.693	5.8125 +1	2.76491 -2	8.6831 -5	3.6060 -2	977.62	3.5213 -3
82,500	82,174	399.0545	5.1592 +1	2.46035 -2	7.7022 -5	3.1978 -2	979.285	3.98215 -3
85,000	84,655	400.415	4.5827 +1	2.19023 -2	6.7706 -5	2.8371 -2	980.95	4.5012 -3
87,500	87,134.5	401.7755	4.0757 +1	1.95063 -2	5.9598 -5	2.5181 -2	982.62	5.0857 -3
90,000	89,613	403.135	3.6292 +1	1.73793 -2	5.2531 -5	2.2360 -2	984.28	5.7434 -3
92,500	92,091.5	404.495	3.2354 +1	1.54919 -2	4.6362 -5	1.9864 -2	985.94	6.48345 -3
95,000	94,569	405.854	2.8878 +1	1.38133 -2	4.0970 -5	1.7653 -2	987.59	7.3155 -3
97,500	97,046	407.2135	2.5805 +1	1.23226 -2	3.6251 -5	1.5695 -2	989.245	8.25085 -3
100,000	99,523	408.572	2.3085 +1	1.09971 -2	3.2114 -5	1.3960 -2	990.90	9.3017 -3