States. The highest temperature ever recorded is for the period of record shown. In some cases it should be noted that this period of record is comparatively short, and higher temperatures may be expected. In making comparisons for other localities than those shown in Table 3, due consideration must be given to elevation.

Column 6 of Table 3 indicates the design dry-bulb temperature suggested by the A.S.H.V.E. Technical Advisory Committee on Weather Design Conditions. This temperature is the maximum hourly outdoor temperature which has been equalled or exceeded 2½ percent of the total hours of June, July, August and September for the period of record, in this case the 5-year period 1935–1939, and should not be confused with the period of record given in Column 4 which applies only to highest temperature ever recorded. Since all of these data (Column 4) are based on airport records, they are not necessarily applicable to cities.

The data given in Columns 7 and 8 were obtained from local A.S.H.V.E. Chapter Secretaries, and represent the design temperatures in local use. Where such information was not available, it was taken from a publication of the A.C.R.M.A.[1] and from various other sources.

The Technical Advisory Committee on Weather Design Conditions has suggested that wet-bulb design temperature be taken as that wet-bulb temperature which has been equalled or exceeded 5 percent of the hours during months of the period of record. While not available for the 1951 edition of THE GUIDE, due to the tremendous task of compiling these data, it is hoped that they will be available for some stations for future editions.

The wind velocity to be used in design should be that wind velocity which accompanies the design temperatures in each instance, but since these data are not available, the average summer wind velocities for the period of record were taken from U. S. Weather Bureau records revised to 1948. It is pointed out that this is not necessarily the velocity which coincides with the design temperatures, but it may serve as a guide to the designer.

Other weather data, such as *daily range of temperature*, are useful particularly when making cooling load calculations for an early morning peak on an east exposure. Daily range of temperature is the difference between the average of the daily maximum dry-bulb temperatures and the average of the daily minimum temperatures. This range is highest in semi-arid or desert regions and at high elevations, and lowest near the oceans or very large lakes. The daily range of temperature (Fahrenheit degrees) in July for the principal areas of the United States can be approximated from the following tabulation:

East Sea Shore	12 to 18	East of Mississippi River	19 to 24
Gulf Sea Shore	12 to 18	Mississippi River to Rocky Mountains	24 to 33
Great Lakes Shore	18 to 21	Rocky Mountain Area	33 to 42
West Sea Shore	15 to 20	West Coastal States	20 to 36

Ventilation Rate

The introduction of outside air is necessary for the ventilation of conditioned spaces. Chapter 6 suggests *minimum* outdoor-air requirements for representative applications; but it is to be emphasized that minimum requirements are not necessarily *adequate* requirements for all psychological attitudes and physiological responses.

Local codes and ordinances frequently specify ventilation requirements for public places and for industrial installations.

Recommended and minimum ventilation rates for the most common

TABLE 3. SUMMER CLIMATIC CONDITIONS[a]

Suggested Design Wet-Bulb and Dry-Bulb Temperatures

Col. 1 State	Col. 2 Station[b]	Col. 3 Elevation[c] Ft	Col. 4 Period of Record[d]	Col. 5 Highest Temp. Ever Recorded[d] °F	Col. 6 Design Dry-Bulb Temp. on T.A.C. 2½% Basis[e] °F	Col. 7 Design Dry-Bulb Temp. in Common Use[f] °F	Col. 8 Design Wet-Bulb Temp. in Common Use[f] °F	Col. 9 Average Summer Wind Velocity[g] MPH
Ala.	Anniston CO	733	1893–1947	105	—	95	78	—
	Birmingham CO	711	1893–1945	107	—	95	78	5.4
	Birmingham AP	615	1939–1947	103	94	—	—	—
	Mobile CO	143	1872–1947	103	—	95	80	8.0
	Mobile AP	219	1940–1947	104	92	—	—	—
	Montgomery CO	293	1872–1947	107	—	95	78	—
	Montgomery AP	226	1938–1944[d]	103	—	—	—	—
	Flagstaff CO	6957	1899–1947	93	—	90	65	—
Ariz.	Flagstaff AP	3473	1935–1939	107	99	—	—	—
	Kingman CO	1122	1895–1947	118	—	105	76	6.0
	Phoenix AP	1112	1933–1947	117	107	—	—	—
	Phoenix AP	2561	1935–1939	112	102	105	72	—
	Tucson CO	4853	Up to 1946	107	—	100	70	—
	Winslow AP	4899	1937–1947	103	95	—	—	—
	Winslow CO	146	1876–1946	120	—	110	78	—
	Yuma CO	545	1882–1945	113	—	95	76	6.1
Ark.	Fort Smith CO	463	1945–1947	107	—	—	—	—
	Fort Smith AP	451	1879–1942[d]	110	—	95	78	6.2
	Little Rock CO	282	1942–1947	107	97	—	—	—
	Little Rock AP	499	1937–1946	113	104	105	70	—
	Bakersfield AP	740	1931–1947[d]	111	94	—	—	—
Calif.	Burbank AP	1925	1935–1939	113	104	—	—	—
	Daggett CO	132	1886–1947	85	—	90	65	—
	Eureka CO	387	1887–1939	115	—	105	70	7.9
	Fresno CO	281	1939–1947	111	103	—	—	—
	Fresno AP	534	1877–1947	109	—	90	70	5.8
	Los Angeles CO	21	1929–1947	102	80	85	65	—
	Oakland AP	305[c]	1877–1934	115	—	100	70	—
	Red Bluff CO	346	1944–1947	112	—	—	—	—
	Red Bluff AP	579	1935–1939	112	101	100	72	7.9
	Redding CO	116	1877–1947	114	—	—	—	—
	Sacramento AP	22	1938–1947	108	—	85	68	—
	Sacramento CO	90	1871–1940	110	—	—	—	—
	San Diego AP	34	1939–1947	106	79	85	65	10.7
	San Diego CO	164	1875–1947	101	—	91	70	—
	San Francisco CO	100	Up to 1946	106	—	—	—	—
	San Jose CO	124	1935–1939	116	103	95	64	6.9
	Williams AP	5398	1871–1947	105	—	—	—	—
Colo.	Denver CO	5379	1934–1947	104	93	95	65	—
	Denver AP	6558	Up to 1946	99	—	95	65	6.3
	Durango CO	4587[c]	Up to 1946	105	—	95	65	—
	Grand Junction CO	4770	1889–1938	104	—	—	—	—
	Pueblo CO	4810	1939–1947	104	95	93	75	—
	Pueblo AP	229	1905–1940[d]	101	—	—	—	—
Conn.	Hartford CO	20	1940–1947	98	88	95	75	7.4
	Hartford AP	180	1872–1947	101	—	—	—	—
	New Haven CO	17	1943–1947	94	84	95	78	5.9
	New Haven AP	128	1871–1947	106	—	—	—	—
D. C.	Washington CO	20	1935–1939	106	92	95	80	8.4
	Washington AP	23	1922–1947	102	—	95	78	—
Fla.	Apalachicola CO	104	1871–1947	104	—	—	—	—
	Jacksonville CO	29	1938–1947	105	94	98	78	—
	Jacksonville AP	23	1871–1947	100	—	—	—	—
	Key West CO	48	1939–1947	95	—	91	79	8.7
	Key West AP	253	1896–1947	96	—	—	—	—
	Miami CO	13	1940–1947	100	89	95	78	—
	Miami AP	67	1879–1947	103	—	—	—	—
	Pensacola CO	113	1943–1947	105	—	95	78	7.4
	Pensacola AP	111	1890–1940	98	—	—	—	—
	Tampa CO	12	1941–1946[d]	98	—	—	—	—
	Tampa AP	52	1935–1939	98	90	95	76	7.9
	Titusville AP	1020	1935–1939	102	93	98	76	—
Ga.	Atlanta CO	195	1871–1946	106	—	—	—	—
	Augusta CO	424	1939–1947	105	—	95	78	—
	Augusta AP	408	1899–1947	105	—	—	—	—
	Macon CO	432	1939–1947	102	—	95	78	8.0
	Macon AP	115	1871–1945[d]	105	93	—	—	—
	Savannah CO	56	1939–1947	105	—	95	65	5.8
	Savannah AP	2818	1864–1939	112	—	—	—	—
Idaho	Boise CO	2849	1939–1947	109	95	—	—	—
	Boise AP	4150	1935–1939	104	94	—	—	—
	Burley AP	4744	1935–1939	100	88	—	—	—
	Idaho Falls AP	763	1900–1944[d]	117	—	95	65	—
	Lewiston CO	4322	1899–1947	105	—	95	65	—
	Pocatello CO	4467	1938–1947	103	92	—	—	—
	Pocatello AP	319	1872–1947	106	—	98	78	—
Ill.	Cairo CO	601	Up to 1946	105	—	95	75	9.5
	Chicago CO	615	1935–1939	107	92	—	—	—
	Chicago AP	594	1932–1947	106	94	96	76	—
	Moline AP							