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METEOROLOGICAL AND CLIMATOLOGICAL DATA FOR MARCH 1948

AEROLOGICAL OBSERVATIONS

[For description of change in Table 1 and charts, see REVIEW, January 1946, p. 6]

TABLE 1.—*Mean dynamic height (geopotential) in units of 0.98 dynamic meters, temperature in degrees centigrade, and relative humidity in percent, for standard pressures, as obtained by radiosondes during March 1948*

STATIONS AND MEAN SURFACE PRESSURES

Standard pressure surface (mb.)	Albany, N. Y. (1,008.4 mb.)				Albuquerque, N. Mex. (833.2 mb.)				Apalachicola, Fla. (1,017.9 mb.)				Atlanta, Ga. (983.4 mb.)				Auburn, Calif. (956.8 mb.)				Big Spring, Tex. (924.4 mb.)				Bismarck, N. Dak. (955.6 mb.)			
	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity
Surface	31	86	−1.1	76	31	1,620	6.2	41	31	5	17.6	87	31	300	12.5	71	31	501	7.5	69	31	774	11.3	41	31	505	−7.9	90
1,000	31	150	(*)	----	31	96	(*)	----	31	157	17.4	83	31	157	(*)	----	31	135	(*)	----	31	107	(*)	----	31	147	(*)	----
950	31	567	−1.0	68	31	536	(*)	----	31	598	16.1	74	31	590	12.4	65	31	561	(*)	----	31	548	(*)	----	31	554	(*)	----
900	31	990	−2.4	66	31	986	(*)	----	31	1,053	14.1	70	31	1,042	10.7	65	31	1,004	5.3	66	31	996	11.4	40	31	972	−5.9	72
850	31	1,443	−4.0	62	31	1,455	(*)	----	31	1,534	11.9	65	31	1,517	9.2	58	31	1,468	2.1	66	31	1,471	9.5	38	31	1,419	−6.5	65
800	31	1,920	−5.4	53	31	1,952	4.6	40	31	2,040	9.7	57	31	2,018	6.9	52	31	1,955	−1.2	68	31	1,972	7.3	38	31	1,891	−7.7	60
750	31	2,431	−6.8	53	31	2,479	.8	45	31	2,577	7.0	52	31	2,551	4.5	49	31	2,470	−4.4	64	31	2,506	4.4	35	31	2,397	−9.6	64
700	31	2,962	−8.9	54	31	3,024	−3.6	52	31	3,138	4.3	43	31	3,106	1.8	48	31	3,007	−7.2	57	31	3,058	.8	36	31	2,922	−11.8	61
650	31	3,541	−11.5	51	31	3,610	−8.0	56	29	3,737	1.2	39	31	3,701	−1.5	43	31	3,585	−10.6	52	31	3,651	−3.0	34	31	3,493	−14.9	58
600	31	4,143	−14.7	54	31	4,221	−12.7	57	29	4,376	−3.0	47	31	4,332	−5.5	45	30	4,195	−14.2	48	31	4,278	−7.4	35	31	4,088	−18.4	57
550	31	4,804	−18.8	55	31	4,885	−17.1	52	29	5,058	−7.6	51	31	5,011	−9.9	46	29	4,854	−18.3	48	30	4,949	−12.3	38	31	4,735	−22.7	----
500	31	5,500	−23.9	----	31	5,588	−22.0	----	29	5,794	−12.4	----	31	5,738	−14.7	46	29	5,556	−23.3	----	30	5,670	−17.0	----	31	5,423	−27.3	----
450	30	6,264	−29.3	----	31	6,363	−27.6	----	28	6,594	−17.7	----	31	6,532	−20.1	51	29	6,326	−28.7	----	30	6,460	−22.1	----	31	6,181	−32.8	----
400	30	7,087	−34.9	----	31	7,191	−33.2	----	28	7,462	−24.4	----	31	7,390	−25.9	----	29	7,153	−34.4	----	30	7,311	−28.0	----	31	6,993	−38.7	----
350	30	8,006	−41.1	----	30	8,124	−38.4	----	27	8,420	−31.4	----	31	8,343	−33.0	----	28	8,074	−41.2	----	30	8,256	−34.9	----	30	7,897	−45.3	----
300	30	9,039	−47.7	----	30	9,170	−44.2	----	27	9,492	−39.5	----	31	9,409	−41.1	----	28	9,104	−48.0	----	30	9,316	−42.0	----	25	8,914	−51.1	----
250	28	10,239	−52.8	----	28	10,385	−50.2	----	27	10,714	−49.0	----	29	10,624	−49.9	----	28	10,287	−54.6	----	30	10,528	−50.0	----	19	10,124	−54.6	----
200	24	11,653	−54.7	----	22	11,860	−53.6	----	26	12,151	−55.9	----	29	12,058	−56.2	----	25	11,703	−55.9	----	21	11,934	−52.3	----	15	11,560	−51.5	----
175	17	12,536	−54.3	----	14	12,737	−55.3	----	24	12,994	−58.5	----	26	12,921	−57.6	----	24	12,552	−53.9	----	8	12,768	−53.6	----	15	12,431	−49.4	----
150	8	13,571	−54.6	----	6	13,744	−54.9	----	21	13,944	−62.0	----	22	13,889	−59.0	----	21	13,540	−54.1	----	6	13,783	−55.2	----	12	13,428	−48.8	----
125	----	----	----	----	----	----	----	----	12	15,047	−65.7	----	14	15,008	−60.4	----	18	14,709	−55.8	----	----	----	----	----	9	14,631	−50.5	----
100	----	----	----	----	----	----	----	----	----	----	----	----	7	16,381	−65.0	----	13	16,120	−58.2	----	----	----	----	----	----	----	----	----
80	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	8	17,529	−59.4	----	----	----	----	----	----	----	----	----

Standard pressure surface (mb.)	Boise, Idaho (912.8 mb.)				Brownsville, Tex. (1,012.3 mb.)				Buffalo, N. Y. (991.1 mb.)				Caribou, Maine (994.3 mb.)				Charleston, S. C. (1,017.7 mb.)				Ciudad Victoria, Mexico (969.9 mb.)				Columbia, Mo. (986.7 mb.)			
	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity
Surface	31	868	3.9	60	31	6	18.4	85	31	221	0.1	76	31	191	−8.2	78	31	13	14.1	86	30	335	24.6	49	30	239	4.8	71
1,000	31	117	(*)	----	31	110	18.0	84	31	147	(*)	----	31	145	(*)	----	31	161	14.7	83	30	63	(*)	----	30	126	(*)	----
950	31	540	(*)	----	31	555	16.2	79	31	563	.1	71	31	545	−7.6	66	31	600	14.1	76	30	519	23.2	50	30	550	3.7	70
900	31	983	4.5	51	31	1,010	16.5	67	31	990	−1.9	70	31	964	−9.8	67	31	1,051	11.9	70	30	984	19.4	55	30	984	2.4	68
850	31	1,455	1.6	51	31	1,497	16.0	46	31	1,443	−3.3	65	31	1,403	−11.6	65	31	1,529	9.4	63	30	1,473	16.1	62	30	1,445	1.8	65
800	31	1,931	−2.2	56	31	2,011	15.4	28	31	1,921	−4.9	61	31	1,867	−12.5	57	31	2,030	7.2	56	30	1,987	13.9	61	30	1,933	.5	60
750	31	2,441	−6.0	62	31	2,560	12.7	30	31	2,431	−6.6	61	31	2,364	−13.5	56	31	2,566	5.1	44	30	2,536	12.1	51	30	2,456	−1.6	58
700	31	2,977	−9.7	65	31	3,131	9.2	32	31	2,964	−9.2	58	31	2,882	−15.1	57	31	3,119	2.4	----	29	3,106	9.3	45	30	2,997	−4.0	57
650	31	3,547	−13.3	66	31	3,739	4.8	33	31	3,540	−11.8	59	31	3,446	−17.5	56	31	3,719	−1.0	----	29	3,717	5.2	40	29	3,579	−7.7	55
600	30	4,148	−16.9	62	31	4,387	.1	36	31	4,143	−15.1	57	30	4,032	−21.0	----	31	4,349	−5.1	----	29	4,364	.4	38	29	4,193	−11.9	55
550	30	4,794	−21.3	----	31	5,075	−4.5	37	31	4,799	−19.0	54	30	4,671	−24.5	----	31	5,029	−9.5	----	29	5,059	−4.3	40	29	4,854	−16.7	53
500	30	5,491	−26.2	----	31	5,821	−9.5	36	29	5,500	−23.5	----	30	5,358	−28.6	----	31	5,758	−14.4	----	29	5,801	−9.1	----	29	5,562	−21.7	----
450	29	6,247	−31.3	----	31	6,631	−15.0	37	29	6,272	−28.8	----	30	6,110	−33.1	----	30	6,555	−19.4	----	29	6,618	−14.4	----	29	6,338	−27.1	----
400	29	7,071	−36.9	----	31	7,508	−21.4	----	29	7,096	−34.6	----	30	6,926	−38.2	----	29	7,418	−25.3	----	29	7,493	−20.6	----	29	7,169	−32.9	----
350	29	7,981	−43.6	----	31	8,477	−28.9	----	26	8,006	−41.3	----	29	7,829	−44.8	----	29	8,370	−32.4	----	29	8,465	−28.5	----	28	8,091	−39.4	----
300	29	9,000	−51.1	----	31	9,558	−37.3	----	25	9,030	−47.6	----	29	8,847	−50.3	----	29	9,439	−40.5	----	29	9,550	−37.4	----	28	9,131	−46.3	----
250	23	10,146	−55.7	----	30	10,792	−47.2	----	22	10,213	−51.6	----	28	10,033	−52.2	----	28	10,660	−49.5	----	23	10,790	−47.0	----	24	10,321	−52.4	----
200	15	11,593	−52.3	----	29	12,235	−55.5	----	15	11,667	−54.3	----	26	11,486	−51.3	----	22	12,128	−57.1	----	----	----	----	----	11	11,763	−52.9	----
175	9	12,460	−49.4	----	24	13,084	−58.7	----	11	12,561	−53.1	----	23	12,361	−50.4	----	16	12,996	−59.1	----	----	----	----	----	6	12,601	−49.9	----
150	5	13,474	−50.7	----	14	14,052	−62.3	----	5	13,561	−51.2	----	20	13,378	−51.1	----	5	14,004	−61.4	----	----	----	----	----	6	13,606	−51.3	----
125	----	----	----	----	7	15,144	−66.6	----	----	----	----	----	9	14,571	−50.9	----	----	----	----	----	----	----	----	----	5	14,769	−53.4	----
100	----	----	----	----	----	----	----	----	----	----	----	----	5	15,950	−52.1	----	----	----	----	----	----	----	----	----	----	----	----	----

TABLE 1.—*Mean dynamic height (geopotential) in units of 0.98 dynamic meters, temperature in degrees centigrade, and relative humidity in percent, for standard pressures, as obtained by radiosondes during March 1948*—Continued

Standard pressure surface (mb.)	Dodge City, Kans. (921.8 mb.)				El Paso, Tex. (878.6 mb.)				Ely, Nev. (803.8 mb.)				Fort Worth, Tex. (989.8 mb.)				Glasgow, Mont. (938.0 mb.)				Grand Junction, Colo. (847.7 mb.)				Great Falls, Mont. (883.3 mb.)			
	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity
Surface	30	787	1.5	74	31	1,195	12.4	26	31	1,908	−2.2	66	31	211	12.1	61	31	648	−4.3	75	31	1,474	2.1	69	31	1,128	−3.3	68
1,000	30	121	(*)	----	31	92	(*)	----	31	133	(*)	----	31	122	(*)	----	31	135	(*)	----	31	117	(*)	----	31	130	(*)	----
950	30	541	(*)	----	31	537	(*)	----	31	559	(*)	----	31	556	11.3	57	31	546	(*)	----	31	547	(*)	----	31	550	(*)	----
900	30	978	3.2	68	31	996	(*)	----	31	1,001	(*)	----	31	1,003	9.5	56	31	972	−3.6	67	31	989	(*)	----	31	981	(*)	----
850	30	1,441	1.9	58	31	1,471	11.3	27	31	1,460	(*)	----	31	1,476	8.8	49	31	1,422	−5.6	65	31	1,450	(*)	----	31	1,430	−3.9	61
800	30	1,929	.7	52	31	1,973	7.3	32	31	1,947	(*)	----	31	1,976	7.3	42	31	1,896	−7.3	62	31	1,940	−.1	61	31	1,906	−6.4	62
750	30	2,449	−1.9	50	31	2,504	3.4	33	31	2,462	−4.3	60	31	2,513	4.3	34	31	2,400	−9.2	59	31	2,455	−3.9	65	31	2,414	−8.7	65
700	30	2,990	−4.9	48	31	3,056	−.6	35	31	2,998	−8.5	66	31	3,063	.9	34	31	2,928	−12.0	59	31	2,994	−7.9	69	31	2,941	−11.5	67
650	30	3,572	−8.5	47	31	3,644	−5.1	38	31	3,572	−12.4	67	31	3,658	−2.8	37	31	3,497	−15.2	60	31	3,569	−11.5	75	31	3,510	−14.8	67
600	30	4,185	−12.5	44	31	4,266	−9.3	36	31	4,176	−16.1	61	31	4,284	−7.2	41	31	4,091	−19.1	62	31	4,173	−15.8	76	31	4,107	−18.8	67
550	30	4,843	−17.4	49	31	4,935	−13.5	----	31	4,828	−20.1	54	31	4,958	−12.0	40	31	4,735	−23.2	----	31	4,826	−20.0	74	30	4,752	−23.3	----
500	30	5,550	−22.8	----	31	5,652	−18.2	----	30	5,525	−24.8	----	31	5,679	−17.0	----	31	5,425	−28.0	----	31	5,523	−25.2	----	30	5,440	−28.1	----
450	29	6,317	−28.5	----	30	6,438	−23.4	----	30	6,287	−30.3	----	30	6,468	−22.8	----	31	6,177	−33.5	----	31	6,284	−30.8	----	30	6,191	−33.6	----
400	29	7,144	−34.5	----	30	7,282	−29.5	----	30	7,110	−36.7	----	30	7,317	−28.8	----	31	6,990	−39.3	----	31	7,104	−37.1	----	29	7,004	−39.7	----
350	29	8,064	−40.9	----	30	8,220	−36.6	----	30	8,021	−43.4	----	30	8,259	−35.6	----	31	7,891	−45.9	----	29	8,020	−43.6	----	28	7,896	−46.4	----
300	29	9,096	−47.1	----	30	9,271	−44.2	----	29	9,047	−49.3	----	29	9,312	−43.4	----	30	8,898	−52.6	----	29	9,043	−49.3	----	28	8,906	−52.2	----
250	26	10,304	−51.5	----	29	10,473	−53.0	----	25	10,234	−53.1	----	28	10,516	−51.5	----	29	10,059	−55.0	----	27	10,230	−52.2	----	26	10,075	−55.2	----
200	22	11,752	−53.5	----	20	11,867	−55.2	----	22	11,676	−54.4	----	27	11,946	−55.4	----	24	11,485	−51.6	----	27	11,667	−52.5	----	21	11,513	−52.8	----
175	16	12,608	−53.1	----	15	12,716	−56.8	----	17	12,529	−52.5	----	25	12,793	−56.2	----	20	12,338	−50.0	----	24	12,538	−52.0	----	13	12,378	−49.8	----
150	12	13,601	−52.8	----	11	13,684	−58.6	----	9	13,556	−54.1	----	22	13,765	−57.7	----	19	13,346	−50.0	----	18	13,546	−53.0	----	9	13,386	−49.8	----
125	----	----	----	----	7	14,797	−60.5	----	6	14,745	−57.5	----	14	14,886	−60.7	----	12	14,523	−51.1	----	12	14,694	−53.6	----	5	14,585	−50.5	----
100	----	----	----	----	----	----	----	----	----	----	----	----	6	16,295	−63.6	----	5	15,970	−52.6	----	6	16,122	−54.9	----	----	----	----	----

Standard pressure surface (mb.)	Greensboro, N. C. (987.0 mb.)				Hatteras, N. C. (1,019.6 mb.)				Havana, Cuba [1] (____mb.)				Honolulu, T. H. (1,015.0 mb.)				Huntington, W. Va. (997.7 mb.)				International Falls, Minn. (974.9 mb.)				Joliet, Ill. (995.3 mb.)			
Surface	31	273	10.3	67	31	3	12.5	83	----	----	----	----	31	3	24.4	63	30	172	8.5	68	31	360	−6.4	74	31	178	1.6	78
1,000	31	163	(*)	----	31	165	12.7	79	----	----	----	----	31	133	22.3	65	30	151	(*)	----	31	158	(*)	----	31	137	(*)	----
950	31	593	10.4	62	31	599	11.0	71	----	----	----	----	31	580	18.6	72	30	579	8.2	60	31	559	−5.7	66	31	554	1.4	71
900	31	1,039	8.0	62	31	1,045	9.0	67	----	----	----	----	31	1,039	15.2	76	30	1,021	5.5	64	31	983	−7.6	65	31	986	.2	65
850	31	1,509	5.9	60	31	1,518	7.0	56	----	----	----	----	31	1,521	12.1	75	30	1,486	3.1	65	31	1,427	−8.6	59	31	1,443	−1.3	64
800	31	2,003	3.8	54	31	2,015	4.9	49	----	----	----	----	31	2,027	9.9	66	30	1,977	1.6	56	31	1,896	−9.3	57	31	1,926	−2.2	54
750	31	2,531	1.5	46	31	2,546	3.0	41	----	----	----	----	31	2,569	7.1	57	30	2,501	−1.0	54	31	2,399	−11.0	56	31	2,443	−3.7	51
700	31	3,079	−1.0	40	31	3,096	.2	40	----	----	----	----	31	3,126	4.2	45	30	3,042	−4.0	51	31	2,921	−13.0	55	31	2,979	−6.4	54
650	31	3,667	−4.3	39	30	3,689	−3.0	38	----	----	----	----	31	3,727	.9	38	30	3,627	−7.0	50	31	3,488	−15.7	51	31	3,564	−9.5	52
600	31	4,294	−8.0	38	30	4,316	−6.7	36	----	----	----	----	31	4,364	−2.8	33	30	4,244	−10.8	51	31	4,082	−18.9	50	31	4,169	−13.0	51
550	31	4,965	−12.8	40	30	4,992	−11.3	----	----	----	----	----	31	5,047	−7.1	36	29	4,909	−15.3	55	31	4,727	−23.0	----	31	4,830	−17.3	56
500	31	5,684	−17.4	41	29	5,715	−16.2	----	----	----	----	----	31	5,784	−12.3	40	29	5,620	−20.1	54	31	5,417	−27.6	----	31	5,534	−22.3	----
450	31	6,473	−22.9	----	29	6,506	−21.6	----	----	----	----	----	31	6,590	−17.9	37	29	6,402	−25.3	----	31	6,170	−32.9	----	31	6,307	−27.8	----
400	31	7,319	−28.3	----	29	7,359	−27.4	----	----	----	----	----	31	7,452	−24.2	----	27	7,249	−31.1	----	30	6,986	−38.9	----	31	7,136	−33.9	----
350	30	8,266	−35.0	----	28	8,313	−33.7	----	----	----	----	----	31	8,412	−31.3	----	26	8,182	−38.2	----	30	7,888	−45.3	----	31	8,058	−40.7	----
300	28	9,332	−42.6	----	28	9,376	−41.3	----	----	----	----	----	31	9,486	−39.2	----	26	9,226	−45.7	----	30	8,902	−51.4	----	30	9,091	−47.5	----
250	24	10,533	−51.0	----	25	10,596	−50.4	----	----	----	----	----	31	10,713	−46.6	----	23	10,411	−53.0	----	24	10,102	−53.8	----	29	10,281	−53.0	----
200	16	11,958	−57.6	----	20	12,044	−58.2	----	----	----	----	----	31	12,172	−53.2	----	17	11,833	−56.8	----	20	11,554	−51.4	----	19	11,726	−54.2	----
175	13	12,804	−58.2	----	12	12,879	−57.9	----	----	----	----	----	30	13,025	−56.0	----	14	12,688	−55.7	----	18	12,438	−49.8	----	16	12,602	−53.8	----
150	13	13,771	−59.2	----	7	13,858	−60.6	----	----	----	----	----	30	13,996	−59.7	----	12	13,654	−56.2	----	13	13,455	−49.3	----	12	13,616	−54.5	----
125	7	14,936	−62.3	----	----	----	----	----	----	----	----	----	30	15,125	−63.8	----	5	14,854	−61.5	----	11	14,658	−50.5	----	----	----	----	----
100	----	----	----	----	----	----	----	----	----	----	----	----	28	16,475	−67.9	----	----	----	----	----	----	----	----	----	----	----	----	----
80	----	----	----	----	----	----	----	----	----	----	----	----	20	17,819	−68.6	----	----	----	----	----	----	----	----	----	----	----	----	----
60	----	----	----	----	----	----	----	----	----	----	----	----	16	19,562	−64.2	----	----	----	----	----	----	----	----	----	----	----	----	----
50	----	----	----	----	----	----	----	----	----	----	----	----	13	20,680	−62.7	----	----	----	----	----	----	----	----	----	----	----	----	----
40	----	----	----	----	----	----	----	----	----	----	----	----	7	22,060	−59.3	----	----	----	----	----	----	----	----	----	----	----	----	----

Standard pressure surface (mb.)	Lake Charles, La. (1,015.1 mb.)				Lander, Wyo. (823.1 mb.)				Las Vegas, Nev. (945.4 mb.)				Little Rock, Ark. (1,006.3 mb.)				Mazatlan, Mexico (1,009.5 mb.)				Medford, Oreg. (968.0 mb.)				Merida, Mexico (1,008.5 mb.)			
Surface	31	5	15.7	84	31	1,696	−2.9	63	31	574	12.7	26	31	79	10.2	71	31	14	21.2	74	31	401	7.0	72	31	27	29.2	55
1,000	31	131	15.9	80	31	120	(*)	----	31	98	(*)	----	31	129	(*)	----	31	96	20.3	69	31	132	(*)	----	31	103	28.5	56
950	31	570	13.9	76	31	546	(*)	----	31	535	(*)	----	31	560	9.5	63	31	547	21.5	40	31	557	6.6	68	31	558	25.4	57
900	31	1,022	12.9	68	31	985	(*)	----	31	985	10.6	25	31	1,004	8.1	61	31	1,008	20.3	34	31	996	3.4	71	31	1,030	21.9	63
850	31	1,502	11.8	57	31	1,438	(*)	----	31	1,455	6.6	28	31	1,475	6.6	60	31	1,498	17.6	27	31	1,457	−.1	76	31	1,524	18.1	70
800	31	2,008	9.8	56	31	1,921	−2.5	57	31	1,950	2.4	34	31	1,972	5.0	55	31	2,013	14.3	----	31	1,939	−3.6	79	31	2,041	14.7	70
750	31	2,548	7.8	46	31	2,436	−5.4	54	31	2,471	−1.9	40	31	2,502	2.8	47	31	2,558	10.7	----	31	2,451	−6.7	80	31	2,591	12.0	56
700	31	3,108	4.9	39	31	2,968	−8.9	56	31	3,013	−6.0	45	31	3,053	−.1	44	31	3,125	6.9	----	31	2,982	−9.6	74	30	3,160	10.2	----
650	31	3,713	1.2	38	31	3,543	−12.7	61	31	3,592	−10.0	48	31	3,644	−3.7	46	30	3,728	2.6	----	31	3,556	−12.5	66	30	3,774	6.9	----
600	31	4,349	−3.2	39	31	4,143	−16.8	59	31	4,204	−13.8	46	31	4,270	−7.6	43	29	4,367	−1.8	----	31	4,159	−16.2	67	30	4,425	3.1	----
550	31	5,033	−8.0	42	31	4,795	−21.4	----	30	4,861	−18.1	44	31	4,943	−11.9	41	29	5,054	−6.1	----	31	4,808	−20.5	67	29	5,124	−1.4	----
500	31	5,766	−13.2	38	31	5,486	−26.6	----	30	5,565	−23.0	----	30	5,662	−16.8	46	28	5,796	−10.7	----	31	5,507	−25.4	----	27	5,873	−6.9	----
450	31	6,567	−18.9	42	31	6,244	−32.4	----	30	6,336	−28.3	----	30	6,452	−22.5	----	28	6,604	−16.2	----	31	6,267	−30.7	----	27	6,694	−13.0	----
400	31	7,428	−24.9	----	31	7,057	−38.9	----	30	7,164	−34.4	----	29	7,297	−28.6	----	28	7,475	−22.4	----	31	7,090	−36.4	----	27	7,573	−20.0	----
350	30	8,384	−31.7	----	31	7,959	−45.8	----	29	8,089	−40.7	----	28	8,244	−35.2	----	28	8,443	−30.0	----	30	8,010	−42.5	----	26	8,545	−28.3	----
300	30	9,455	−40.0	----	31	8,970	−51.8	----	29	9,123	−47.4	----	27	9,301	−42.2	----	28	9,522	−38.6	----	30	9,035	−49.5	----	26	9,629	−37.4	----
250	28	10,672	−49.4	----	29	10,137	−55.3	----	28	10,313	−53.8	----	22	10,507	−49.4	----	17	10,788	−47.6	----	30	10,211	−55.5	----	25	10,861	−47.1	----
200	19	12,107	−55.6	----	26	11,562	−52.8	----	27	11,741	−55.7	----	17	11,956	−53.5	----	----	----	----	----	28	11,626	−54.8	----	22	12,307	−56.7	----
175	16	12,955	−57.5	----	19	12,431	−51.8	----	27	12,593	−54.7	----	10	12,824	−54.7	----	----	----	----	----	25	12,481	−53.1	----	17	13,142	−60.8	----
150	12	13,910	−60.0	----	14	13,442	−52.6	----	26	13,581	−55.4	----	7	13,748	−54.6	----	----	----	----	----	19	13,479	−52.8	----	7	14,097	−64.4	----
125	9	15,038	−64.4	----	7	14,660	−54.2	----	23	14,748	−57.9	----	----	----	----	----	----	----	----	----	12	14,655	−54.8	----	----	----	----	----
100	----	----	----	----	6	16,085	−56.9	----	17	16,163	−60.5	----	----	----	----	----	----	----	----	----	7	16,082	−56.1	----	----	----	----	----
80	----	----	----	----	5	17,496	−57.9	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

See footnotes at end of table.

TABLE 1.—*Mean dynamic height (geopotential) in units of 0.98 dynamic meters, temperature in degrees centigrade, and relative humidity in percent, for standard pressures, as obtained by radiosondes during March 1948*—Continued

Standard pressure surface (mb.)	Miami, Fla. (1,018.3 mb.)				Nantucket, Mass. (1,017.2 mb.)				Nashville, Tenn. (995.6 mb.)				New Orleans, La. (1,015.9 mb.)				North Platte, Nebr. (914.6 mb.)				Oakland, Calif. (1,016.1 mb.)				Ogden, Utah (861.3 mb.)			
	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity
Surface	31	4	23.2	77	31	14	2.5	85	31	180	11.4	66	30	2	17.3	85	31	849	−0.8	72	31	6	10.9	73	31	1,355	1.6	62
1,000	31	163	22.5	77	31	150	2.4	81	31	142	(*)	----	30	137	17.3	81	31	123	(*)	----	31	139	10.0	74	31	130	(*)	----
950	31	610	19.7	76	31	573	2.8	74	31	571	9.7	63	30	577	15.1	80	31	543	(*)	----	31	569	7.3	71	31	556	(*)	----
900	31	1,072	16.8	74	31	1,002	.4	68	31	1,017	7.5	64	30	1,032	13.8	70	31	976	−.2	70	31	1,007	5.0	69	31	1,000	(*)	----
850	31	1,558	13.9	71	31	1,460	−1.0	64	31	1,487	5.9	62	30	1,513	12.1	60	31	1,433	−1.6	66	31	1,471	2.1	67	31	1,460	1.4	58
800	31	2,067	11.3	60	31	1,942	−3.1	60	31	1,982	4.1	57	30	2,020	9.9	54	31	1,914	−3.1	61	31	1,958	−.2	58	31	1,946	−1.9	58
750	31	2,607	9.3	43	31	2,455	−4.7	54	31	2,508	1.7	55	30	2,563	7.8	47	31	2,428	−5.2	60	31	2,480	−2.6	49	31	2,459	−5.9	64
700	31	3,175	7.4	----	31	2,992	−6.7	53	31	3,058	−1.1	46	30	3,120	4.8	44	31	2,963	−7.8	59	31	3,017	−5.6	45	31	2,992	−9.8	66
650	31	3,781	4.0	----	30	3,569	−9.7	54	31	3,647	−4.1	48	29	3,725	1.4	44	31	3,539	−11.6	62	31	3,599	−9.3	44	31	3,566	−13.3	65
600	31	4,426	.1	----	30	4,179	−13.2	55	31	4,273	−8.0	50	29	4,362	−2.5	43	31	4,144	−15.8	62	31	4,209	−13.1	45	31	4,165	−17.1	66
550	31	5,118	−4.1	----	30	4,837	−17.4	54	30	4,946	−12.4	49	29	5,048	−7.0	44	31	4,797	−20.0	59	31	4,871	−17.4	48	31	4,815	−21.2	----
500	31	5,863	−9.0	----	30	5,545	−21.7	----	29	5,670	−17.5	45	28	5,784	−12.0	42	31	5,494	−24.9	----	31	5,574	−22.1	----	31	5,509	−26.1	----
450	31	6,678	−14.7	----	30	6,318	−26.9	----	27	6,450	−23.0	----	26	6,595	−17.9	----	31	6,257	−30.7	----	31	6,349	−27.3	----	31	6,266	−31.7	----
400	29	7,550	−21.1	----	30	7,154	−32.6	----	27	7,301	−29.1	----	26	7,456	−24.2	----	31	7,076	−37.1	----	31	7,180	−33.2	----	31	7,086	−37.9	----
350	29	8,520	−28.9	----	30	8,081	−39.2	----	27	8,242	−35.8	----	24	8,409	−31.5	----	30	7,990	−43.5	----	31	8,105	−40.0	----	31	7,992	−44.4	----
300	27	9,603	−37.8	----	28	9,141	−45.5	----	25	9,298	−43.2	----	21	9,498	−38.9	----	28	9,014	−50.4	----	31	9,141	−47.3	----	31	9,010	−50.4	----
250	27	10,832	−47.6	----	20	10,321	−51.1	----	20	10,494	−51.7	----	21	10,726	−47.7	----	27	10,197	−53.4	----	31	10,326	−54.0	----	30	10,194	−53.9	----
200	23	12,284	−55.9	----	8	11,737	−56.0	----	17	11,900	−56.9	----	19	12,175	−56.5	----	25	11,636	−53.3	----	27	11,742	−55.1	----	30	11,626	−53.3	----
175	20	13,130	−60.0	----	----	----	----	----	11	12,744	−56.2	----	18	13,021	−58.9	----	17	12,499	−52.1	----	24	12,593	−53.4	----	27	12,485	−52.3	----
150	15	14,077	−63.7	----	----	----	----	----	6	13,697	−55.6	----	16	13,978	−60.9	----	9	13,550	−52.2	----	22	13,590	−53.8	----	24	13,481	−52.3	----
125	6	15,164	−68.0	----	----	----	----	----	----	----	----	----	11	15,085	−64.9	----	6	14,743	−54.3	----	17	14,761	−55.4	----	20	14,672	−54.4	----
100	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	12	16,196	−57.4	----	14	16,094	−55.5	----
80	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	10	17,608	−59.1	----	9	17,497	−56.5	----

Standard pressure surface (mb.)	Oklahoma City, Okla. (967.9 mb.)				Omaha, Nebr. (978.4 mb.)				Phoenix, Ariz. (973.0 mb.)				Pittsburgh, Pa. (972.2 mb.)				Portland, Maine (1,016.0 mb.)				Rapid City, S. Dak. (900.6 mb.)				St. Cloud, Minn. (978.1 mb.)			
	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity
Surface	30	391	7.2	75	30	308	1.8	73	31	339	15.0	34	31	382	5.2	65	31	20	−1.3	76	29	980	−3.1	75	31	317	−5.4	85
1,000	30	118	(*)	----	30	128	(*)	----	31	106	(*)	----	31	148	(*)	----	31	145	−.7	73	29	137	(*)	----	31	139	(*)	----
950	30	542	7.4	70	30	543	.3	76	31	545	15.7	27	31	576	4.5	66	31	557	−1.7	67	29	554	(*)	----	31	549	−3.8	71
900	30	987	6.2	64	30	974	−.8	70	31	998	12.1	28	31	1,007	2.6	66	31	984	−3.5	64	29	985	−7.8	80	31	971	−4.2	61
850	30	1,455	5.1	57	30	1,430	−1.5	60	31	1,473	8.0	32	31	1,469	.5	64	31	1,434	−5.3	60	29	1,438	−2.8	66	31	1,421	−5.1	59
800	30	1,949	4.1	50	30	1,913	−2.2	61	31	1,969	3.9	37	31	1,953	−1.6	65	31	1,909	−6.6	54	29	1,917	−5.0	62	30	1,898	−6.0	55
750	30	2,474	1.4	46	30	2,430	−4.5	58	31	2,497	−.3	42	31	2,474	−3.7	61	31	2,415	−8.2	51	29	2,427	−7.0	57	30	2,406	−7.7	49
700	30	3,024	−1.9	39	30	2,964	−7.4	61	31	3,039	−4.0	41	31	3,008	−6.6	60	31	2,945	−10.0	49	29	2,958	−9.2	51	30	2,937	−9.9	50
650	30	3,610	−5.8	42	30	3,544	−10.6	63	31	3,625	−7.5	38	31	3,592	−9.4	56	31	3,518	−12.7	51	29	3,535	−12.5	52	30	3,511	−12.7	53
600	30	4,232	−9.9	45	30	4,151	−14.3	62	31	4,239	−11.1	36	31	4,199	−12.6	55	31	4,121	−16.0	56	29	4,134	−16.5	56	29	4,110	−16.6	55
550	29	4,897	−14.8	45	30	4,807	−18.6	59	31	4,905	−15.4	----	31	4,866	−16.7	53	31	4,772	−20.0	60	29	4,785	−20.9	60	28	4,764	−20.6	----
500	28	5,609	−19.6	44	30	5,509	−23.9	----	31	5,615	−20.3	----	31	5,567	−21.7	----	31	5,472	−24.7	----	29	5,481	−25.7	----	28	5,461	−25.6	----
450	28	6,389	−25.2	----	29	6,277	−29.4	----	31	6,397	−25.6	----	31	6,346	−26.7	----	30	6,227	−30.2	----	29	6,243	−31.1	----	28	6,221	−30.9	----
400	26	7,232	−30.8	----	29	7,104	−35.3	----	31	7,233	−31.7	----	31	7,177	−32.6	----	30	7,052	−36.1	----	28	7,067	−37.3	----	28	7,043	−36.9	----
350	25	8,177	−37.2	----	29	8,020	−42.1	----	31	8,164	−38.4	----	31	8,104	−39.2	----	29	7,968	−42.3	----	28	7,976	−44.0	----	27	7,962	−43.5	----
300	22	9,226	−44.2	----	28	9,049	−49.0	----	30	9,209	−45.6	----	31	9,144	−46.1	----	29	8,995	−48.9	----	26	8,993	−50.0	----	25	8,984	−50.6	----
250	13	10,444	−51.3	----	26	10,228	−53.8	----	28	10,415	−52.9	----	29	10,335	−53.0	----	28	10,173	−53.4	----	25	10,169	−53.4	----	25	10,160	−54.0	----
200	7	11,885	−54.0	----	21	11,678	−53.3	----	22	11,848	−55.3	----	27	11,762	−55.5	----	24	11,604	−53.7	----	25	11,610	−51.6	----	20	11,598	−52.3	----
175	----	----	----	----	15	12,540	−52.0	----	19	12,690	−55.5	----	22	12,607	−54.9	----	22	12,457	−53.4	----	21	12,467	−50.8	----	19	12,459	−50.8	----
150	----	----	----	----	9	13,542	−52.2	----	13	13,689	−56.3	----	15	13,584	−55.0	----	19	13,469	−54.1	----	17	13,475	−50.5	----	17	13,461	−51.0	----
125	----	----	----	----	----	----	----	----	9	14,872	−59.9	----	----	----	----	----	12	14,649	−55.6	----	5	14,631	−52.0	----	10	14,643	−51.7	----
100	----	----	----	----	----	----	----	----	6	16,267	−63.7	----	----	----	----	----	----	----	----	----	----	----	----	----	5	16,079	−50.6	----
80	----	----	----	----	----	----	----	----	5	17,640	−64.9	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

Standard pressure surface (mb.)	San Antonio, Tex. (985.2 mb.)				San Juan, P. R. (1,016.5 mb.)				Santa Maria, Calif. (1,008.5 mb.)				Sault Ste. Marie, Mich. (990.6 mb.)				Spokane, Wash. (928.3 mb.)				Swan Island, W. I. (1,013.8 mb.)				Tacubaya, Mexico (772.3 mb.)			
	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity
Surface	31	240	15.5	62	30	15	23.8	77	31	71	10.6	75	31	221	−5.7	79	30	721	2.7	67	31	10	25.6	78	29	2,306	19.7	36
1,000	31	111	(*)	----	30	158	22.6	78	31	141	10.2	74	31	145	(*)	----	30	113	(*)	----	31	131	24.7	78	29	12	(*)	----
950	31	552	14.6	61	30	604	19.1	81	31	572	8.1	67	31	554	−5.7	69	30	534	(*)	----	31	584	21.0	81	29	480	(*)	----
900	31	1,003	13.0	62	30	1,066	15.7	80	31	1,011	6.2	61	31	971	−6.7	65	30	970	1.4	63	31	1,046	18.1	69	29	962	(*)	----
850	31	1,483	12.0	58	30	1,550	12.8	77	31	1,477	3.2	64	31	1,416	−7.4	57	30	1,427	−2.0	64	31	1,534	15.1	60	29	1,465	(*)	----
800	31	1,990	10.6	46	30	2,059	11.4	57	31	1,966	.5	35	31	1,888	−8.2	53	30	1,906	−5.7	66	31	2,046	13.2	43	29	1,999	(*)	----
750	31	2,530	8.4	34	30	2,604	10.0	39	31	2,487	−1.4	48	31	2,393	−10.0	52	30	2,412	−8.8	68	31	2,593	12.0	----	29	2,558	17.6	38
700	31	3,092	5.2	31	30	3,167	7.8	27	31	3,029	−4.1	40	31	2,917	−12.2	54	30	2,940	−12.1	66	31	3,162	9.7	----	29	3,143	12.8	43
650	31	3,692	1.3	29	30	3,777	5.1	----	31	3,615	−7.3	38	31	3,487	−14.6	53	30	3,508	−15.4	64	30	3,779	6.4	----	29	3,761	7.5	50
600	31	4,330	−3.3	----	30	4,427	1.4	----	31	4,229	−10.8	34	30	4,090	−17.6	55	30	4,103	−19.0	64	30	4,424	2.4	----	28	4,414	1.9	58
550	31	5,011	−8.1	----	30	5,119	−2.9	----	31	4,896	−15.0	----	30	4,740	−21.3	----	30	4,747	−23.1	----	30	5,124	−1.8	----	28	5,109	−3.5	57
500	31	5,745	−13.2	----	30	5,866	−7.7	----	31	5,606	−20.3	----	29	5,429	−25.7	----	30	5,437	−27.9	----	30	5,873	−6.9	----	28	5,857	−8.7	44
450	31	6,543	−18.9	----	28	6,686	−13.7	----	31	6,384	−25.9	----	28	6,197	−30.7	----	30	6,188	−33.0	----	30	6,698	−12.4	----	26	6,673	−14.3	----
400	31	7,406	−24.7	----	28	7,559	−20.7	----	31	7,221	−31.9	----	28	7,021	−36.3	----	29	7,008	−38.7	----	30	7,577	−18.8	----	26	7,547	−21.0	----
350	31	8,364	−31.5	----	28	8,532	−28.2	----	29	8,148	−38.4	----	27	7,933	−43.0	----	29	7,912	−45.4	----	30	8,556	−26.7	----	24	8,522	−29.0	----
300	31	9,437	−39.4	----	27	9,620	−36.2	----	29	9,191	−45.7	----	22	8,978	−49.0	----	29	8,924	−51.7	----	30	9,649	−35.1	----	24	9,601	−37.7	----
250	31	10,660	−48.7	----	26	10,866	−44.4	----	25	10,371	−53.2	----	10	10,177	−52.6	----	28	10,097	−55.4	----	30	10,896	−44.2	----	22	10,830	−47.2	----
200	31	12,100	−55.7	----	25	12,328	−53.3	----	21	11,779	−56.3	----	5	11,585	−51.3	----	24	11,523	−52.8	----	30	12,357	−54.7	----	----	----	----	----
175	29	12,948	−57.6	----	23	13,182	−58.2	----	18	12,637	−54.2	----	5	12,457	−49.5	----	19	12,383	−50.6	----	28	13,197	−60.3	----	----	----	----	----
150	23	13,906	−60.4	----	15	14,150	−63.3	----	17	13,625	−55.0	----	----	----	----	----	17	13,388	−50.7	----	25	14,144	−66.3	----	----	----	----	----
125	11	15,057	−64.0	----	----	----	----	----	15	14,787	−57.0	----	----	----	----	----	9	14,612	−52.4	----	12	15,236	−72.4	----	----	----	----	----
100	----	----	----	----	----	----	----	----	9	16,171	−57.7	----	----	----	----	----	8	16,049	−53.6	----	----	----	----	----	----	----	----	----
80	----	----	----	----	----	----	----	----	6	17,558	−58.9	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

See footnotes at end of table.

TABLE 1.—*Mean dynamic height (geopotential) in units of 0.98 dynamic meters, temperature in degrees centigrade, and relative humidity in percent, for standard pressures, as obtained by radiosondes during March 1948*—Continued

Standard pressure surface (mb.)	Tampa, Fla. (1,017.7 mb.)				Tatoosh Island, Wash. (1,009.8 mb.)				Toledo, Ohio (994.4 mb.)				Washington, D. C. (1,017.1 mb.)			
	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity
Surface	31	9	20.7	84	31	31	5.9	80	31	191	1.1	80	31	25	8.5	64
1,000	21	161	19.8	84	31	111	5.4	79	31	143	(*)	----	31	163	7.8	61
950	31	604	17.8	80	31	533	2.8	76	31	559	.9	71	31	589	6.8	57
900	31	1,064	15.0	78	31	964	.0	77	31	990	−.5	67	31	1,029	4.9	59
850	31	1,546	12.4	73	31	1,419	−3.0	75	31	1,446	−1.7	63	31	1,493	2.9	59
800	31	2,053	10.1	60	31	1,897	−5.6	73	31	1,928	−2.9	58	31	1,983	1.0	55
750	31	2,589	7.6	51	31	2,407	−8.5	71	31	2,445	−4.5	56	31	2,505	−.9	46
700	31	3,153	5.0	43	31	2,933	−11.1	64	31	2,979	−7.1	56	31	3,049	−3.3	43
650	31	3,754	2.0	34	31	3,505	−14.1	60	31	3,561	−10.1	56	31	3,635	−6.4	44
600	30	4,397	−1.7	34	31	4,103	−18.0	62	31	4,167	−13.5	54	31	4,253	−10.3	43
550	30	5,084	−6.0	40	31	4,748	−22.4	----	31	4,826	−17.7	53	30	4,921	−14.8	44
500	30	5,824	−10.6	38	31	5,441	−26.7	----	31	5,531	−22.4	----	30	5,634	−19.8	44
450	30	6,634	−16.1	42	31	6,197	−32.1	----	30	6,300	−28.0	----	30	6,412	−24.9	----
400	30	7,503	−22.9	----	31	7,016	−37.9	----	29	7,127	−34.3	----	30	7,254	−30.5	----
350	30	8,467	−30.3	----	31	7,924	−43.6	----	28	8,038	−41.2	----	30	8,189	−37.1	----
300	30	9,543	−39.0	----	31	8,946	−49.3	----	26	9,054	−48.3	----	30	9,237	−44.7	----
250	30	10,766	−48.7	----	30	10,130	−52.6	----	25	10,231	−53.5	----	27	10,435	−52.5	----
200	28	12,202	−56.8	----	29	11,567	−51.3	----	22	11,658	−54.6	----	23	11,845	−56.4	----
175	26	13,042	−59.6	----	27	12,435	−49.4	----	17	12,494	−52.6	----	19	12,685	−55.3	----
150	24	14,008	−62.7	----	26	13,447	−49.3	----	10	13,521	−53.7	----	15	13,673	−56.5	----
125	22	15,113	−67.5	----	19	14,651	−49.8	----	----	----	----	----	10	14,810	−58.3	----
100	10	16,436	−71.9	----	12	16,128	−52.5	----	----	----	----	----	7	16,198	−60.6	----
80	----	----	----	----	5	17,558	−53.3	----	----	----	----	----	6	17,583	−62.8	----

(*)Temperature and relative humidity data for this level are not available or are available only for certain days. See note entitled "Change in Summarization of Radiosonde Data," p. 6, in the January 1946 issue of the MONTHLY WEATHER REVIEW.

NOTE.—All observations scheduled between 0300 and 0500, G. C. T. except at Ciudad Victoria, Mazatlan, and Merida, where they are taken near 0200 G. C. T. "Number of observations" refers to those of dynamic height only. (In a few cases temperature or humidity data may be missing for one or more standard pressure surfaces of some observations.) Relative humidity data are not published for standard pressure surfaces having a corresponding mean temperature below −20° C.

All relative humidity observations are obtained by electric hygrometer and have been adjusted to compensate for the values occurring below the operating range of the humidity element. For explanation of the adjustment see article entitled "Curve Method for Obtaining Monthly Means of Relative Humidity," p. 241, MONTHLY WEATHER REVIEW, December 1944.

None of the means included in these tables are based on less than 15 observations at the surface or 5 observations at a standard pressure level.

TABLE 2.—*Free-air resultant winds based on pilot balloon observations made near 2200 G. C. T. during March 1948. Directions given in degrees from north (N=360°, E=90°, S=180°, W=270°). Velocities in meters per second*

Altitude (meters) m. s. l.	Abilene, Tex. (534 m.)			Albuquerque, N. Mex. (1,627 m.)			Atlanta, Ga. (299 m.)			Billings, Mont. (1,095 m.)			Bismarck, N. Dak. (512 m.)			Boise, Idaho (868 m.)		
	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed
Surface	30	246	1.4	31	244	2.3	27	229	1.8	30	247	2.0	30	320	1.0	31	305	0.6
500	----	----	----	----	----	----	27	226	2.6	----	----	----	----	----	----	----	----	----
1,000	29	230	2.2	----	----	----	27	219	3.6	----	----	----	30	281	2.6	31	289	.8
1,500	28	230	5.7	----	----	----	26	239	5.3	30	251	4.0	25	276	3.3	31	273	2.5
2,000	26	237	8.7	31	254	4.3	26	258	7.8	29	273	4.9	22	267	6.2	30	274	4.5
2,500	24	239	11.8	31	260	5.8	23	259	10.4	28	275	5.8	19	270	8.1	27	284	5.1
3,000	23	244	14.9	28	264	8.2	22	259	12.5	25	276	6.5	19	278	9.8	24	302	4.8
4,000	20	251	20.0	24	264	11.1	15	266	14.3	21	274	8.1	19	283	12.4	21	286	6.6
5,000	21	250	24.4	20	272	14.7	13	280	17.8	19	277	10.3	19	281	12.8	19	280	7.2
6,000	17	246	26.0	19	265	19.5	12	271	22.6	15	267	11.7	15	281	16.1	16	285	8.5
8,000	----	----	----	16	270	22.3	----	----	----	----	----	----	----	----	----	----	----	----
10,000	----	----	----	12	266	29.0	----	----	----	----	----	----	----	----	----	----	----	----

Altitude (meters) m. s. l.	Brownsville, Tex. (7 m.)			Buffalo, N. Y. (220 m.)			Burlington, Vt. (100 m.)			Charleston, S. C. (16 m.)			Cincinnati, Ohio (273 m.)			Denver, Colo. (1,618 m.)			El Paso, Tex. (1,198 m.)		
	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed
Surface	31	106	2.6	24	214	0.9	23	205	1.7	26	186	1.8	30	233	2.6	30	15	0.6	31	266	5.0
500	31	129	3.1	24	211	1.6	23	220	3.7	26	211	3.2	30	228	3.9	----	----	----	----	----	----
1,000	16	154	2.5	21	227	4.4	23	253	5.2	24	223	6.1	26	229	6.1	----	----	----	----	----	----
1,500	13	217	3.5	15	254	7.9	21	272	7.6	22	233	7.3	25	237	9.5	----	----	----	31	267	7.1
2,000	10	258	5.2	14	261	8.9	20	276	9.7	21	254	8.2	21	249	10.4	30	303	.5	31	262	8.0
2,500	10	270	6.7	12	267	11.2	17	284	13.8	17	262	8.1	18	264	12.0	28	263	2.5	27	264	9.4
3,000	----	----	----	12	276	13.5	17	288	17.4	17	260	9.2	17	265	14.5	28	272	4.3	27	261	12.4
4,000	----	----	----	----	----	----	17	287	21.2	15	267	12.8	13	272	15.2	25	280	7.6	24	263	17.7
5,000	----	----	----	----	----	----	13	290	23.4	13	273	13.7	----	----	----	23	286	10.5	23	258	22.4
6,000	----	----	----	----	----	----	----	----	----	13	284	17.3	----	----	----	21	277	14.2	18	259	25.9
8,000	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	15	275	14.3	13	264	31.3
10,000	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	10	274	18.6	----	----	----

Altitude (meters) m. s. l.	Ely, Nev. (1,910 m.)			Grand Junction, Colo. (1,475 m.)			Greensboro, N. C. (271 m.)			Havre, Mont. (767 m.)			Jacksonville, Fla. (16 m.)			Joliet, Ill. (178 m.)			Las Vegas, Nev. (575 m.)		
	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed
Surface	29	274	0.3	31	249	2.4	26	207	2.1	27	270	2.8	26	125	1.6	29	240	1.3	31	250	1.0
500	----	----	----	----	----	----	26	216	3.1	----	----	----	26	195	3.4	29	255	1.6	----	----	----
1,000	----	----	----	----	----	----	26	228	4.1	27	269	4.1	23	208	4.0	22	206	2.6	31	243	1.6
1,500	----	----	----	31	250	2.4	25	252	6.3	24	267	6.6	22	228	5.4	17	236	5.2	31	234	2.8
2,000	29	257	.8	31	244	2.7	25	259	10.0	21	272	8.1	20	237	6.6	13	244	7.0	31	241	4.5
2,500	29	269	2.5	30	237	2.1	24	267	12.2	20	269	8.6	18	246	7.7	12	258	8.7	31	258	4.1
3,000	27	282	3.3	28	240	3.9	22	274	14.2	19	269	8.6	17	241	8.0	12	268	11.6	29	276	5.7
4,000	19	290	5.5	21	282	5.8	18	274	18.0	17	271	10.9	15	270	9.9	----	----	----	26	293	9.0
5,000	16	295	7.1	17	290	7.4	15	276	22.0	13	280	10.5	11	278	10.7	----	----	----	25	293	12.5
6,000	15	303	9.6	17	296	9.5	10	289	23.3	10	296	10.2	10	285	15.0	----	----	----	24	299	18.1
8,000	11	328	17.8	15	286	13.4	----	----	----	----	----	----	----	----	----	----	----	----	11	301	21.0
10,000	----	----	----	10	293	14.8	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

Altitude (meters) m. s. l.	Little Rock, Ark. (88 m.)			Medford, Oreg. (416 m.)			Miami, Fla. (12 m.)			Mobile, Ala. (66 m.)			Nashville, Tenn. (194 m.)			New York, N. Y. (15 m.)		
	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed
Surface	29	205	1.0	28	322	1.6	31	149	5.8	25	177	2.0	31	207	2.5	28	209	1.5
500	29	220	2.7	28	326	1.6	31	152	5.8	25	188	1.8	31	198	5.3	28	230	4.6
1,000	25	225	4.5	28	170	.8	31	172	4.5	19	200	.8	29	215	6.2	25	265	5.8
1,500	23	244	7.7	25	203	3.0	27	191	4.3	16	266	3.3	24	233	7.9	24	278	7.3
2,000	19	247	9.5	22	220	3.3	25	217	4.2	15	262	7.9	22	244	9.6	20	284	9.4
2,500	16	263	11.7	20	221	3.9	19	234	4.4	14	267	10.1	19	249	10.8	18	290	11.8
3,000	14	266	15.4	14	245	4.9	17	238	5.8	14	262	11.0	18	256	13.3	16	286	13.5
4,000	16	266	12.8	----	----	----	12	257	8.7	11	271	15.7	13	263	13.4	----	----	----
5,000	11	263	19.3	----	----	----	10	261	9.1	----	----	----	11	263	15.5	----	----	----
6,000	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
8,000	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
10,000	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

TABLE 2.—*Free-air resultant winds based on pilot balloon observations made near 2200 G. C. T. during March 1948. Directions given in degrees from north (N=360°, E=90°, S=180°, W=270°). Velocities in meters per second*

Altitude (meters) m. s. l.	Oakland, Calif. (8 m.)			Oklahoma City, Okla. (396 m.)			Omaha, Nebr. (306 m.)			Phoenix, Ariz. (338 m.)			Rapid City, S. Dak. (982 m.)			St. Louis, Mo. (181 m.)			St. Cloud Minn. (318 m.)			San Antonio, Tex. (240 m.)			San Diego, Calif. (13 m.)			Sault Ste. Marie, Mich. (225 m.)			Seattle, Wash. (116 m.)			Spokane, Wash. (725 m.)			Washington D. C. (24 m.)		
	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed
Surface	29	251	4.4	28	258	1.9	29	30	0.6	31	237	1.3	31	357	2.9	28	259	1.4	28	224	0.3	30	90	0.6	31	261	3.9	24	306	1.4	29	227	2.8	30	229	2.2	28	219	2.7
500	29	261	3.1	28	243	2.1	29	206	.8	31	238	2.3	---	---	---	28	237	2.0	28	246	.6	30	104	.5	31	245	3.6	24	253	.8	29	222	3.8	---	---	---	28	229	4.8
1,000	26	313	3.1	28	224	3.3	28	221	2.4	31	237	3.3	31	355	3.0	25	231	4.3	28	240	2.9	29	191	.6	29	234	2.1	24	260	2.8	27	208	3.5	30	231	3.6	28	238	6.6
1,500	24	314	3.1	22	238	6.5	25	234	4.8	31	236	4.2	31	320	2.5	21	243	7.3	24	252	4.9	25	270	2.2	26	230	1.5	22	271	5.3	22	203	4.0	30	228	4.7	25	244	7.7
2,000	23	322	4.7	19	243	8.8	23	231	7.8	30	248	4.7	23	277	3.9	21	253	9.2	22	262	7.5	22	261	4.6	23	283	2.7	20	288	6.5	19	201	5.6	29	239	5.2	22	257	10.1
2,500	22	324	6.7	16	247	12.6	22	244	8.8	30	262	5.0	20	279	5.3	18	258	10.1	21	268	8.8	19	266	7.9	22	277	5.6	16	287	9.4	18	212	6.0	22	254	4.8	20	270	13.8
3,000	18	339	9.2	15	255	16.1	22	249	9.5	29	263	7.1	19	282	6.8	14	258	10.7	19	282	11.1	19	263	10.8	21	284	8.1	15	287	11.4	14	214	6.5	20	249	5.0	19	275	17.2
4,000	17	338	10.9	14	256	16.9	18	255	11.3	25	269	12.2	17	287	9.7	12	271	10.9	18	294	13.7	17	252	16.4	20	282	10.8	14	286	15.3	11	224	7.4	13	282	5.8	18	274	19.6
5,000	16	326	13.0	12	262	20.4	13	277	11.2	21	273	19.5	14	293	10.5	---	---	---	14	289	12.7	16	251	21.4	18	288	13.4	14	287	17.9	---	---	---	10	297	8.0	13	285	23.1
6,000	16	324	15.7	11	264	24.6	10	299	11.0	17	279	21.8	14	298	12.1	---	---	---	14	278	15.4	10	250	22.2	16	286	13.8	---	---	---	---	---	---	---	---	---	10	289	23.4
8,000	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	10	270	15.4	---	---	---	---	---	---	---	---	---	---	---	---

TABLE 3.—*Free-air resultant winds based on rawin observations made near 0300 G. C. T., during March 1948. Directions given in degrees from north (N=360°, E=90°, S=180°, W=270°). Speeds in meters per second*

Altitude (meters) m. s. l.	Albuquerque, N. Mex. (1,636 m.)			Big Spring, Tex. (774 m.)			Bismarck, N. Dak. (505 m.)			Brownsville, Tex. (7 m.)			Caribou, Maine (191 m.)			Charleston, S. C. (13 m.)			Columbia, Mo. (237 m.)			Grand Junction, Colo. (1,473 m.)			Greensboro, N. C. (275 m.)			Hatteras, N. C. (3 m.)			International Falls, Minn. (360 m.)			Little Rock, Ark. (80 m.)			Miami, Fla. (12 m.)		
	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed
Surface	31	310	1.3	31	175	0.7	31	44	1.5	31	123	2.0	30	284	2.3	31	128	1.2	31	78	0.8	31	322	1.3	29	206	0.7	28	66	0.3	31	12	0.5	31	57	0.2	31	105	2.4
500	---	---	---	---	---	---	---	---	---	31	137	4.4	30	292	5.0	31	184	4.1	30	176	1.8	---	---	---	28	227	2.1	25	250	2.2	31	248	.2	31	254	.9	31	126	3.9
1,000	---	---	---	31	221	2.7	31	312	1.3	31	143	3.9	29	300	6.5	30	227	3.4	30	214	4.3	---	---	---	28	242	5.9	24	274	2.9	31	258	2.3	30	216	7.2	31	132	2.7
1,500	---	---	---	31	238	5.8	31	290	3.0	31	153	2.6	29	296	7.4	30	243	5.3	30	227	7.0	31	320	1.2	26	247	8.1	24	277	6.1	31	269	4.2	30	220	9.7	31	165	2.3
2,000	31	275	5.6	31	245	8.4	31	288	4.0	30	205	2.7	28	300	8.9	28	250	6.2	31	236	8.8	31	265	2.2	26	255	9.1	24	273	7.5	31	275	6.2	30	231	10.5	31	212	2.6
2,500	31	263	7.8	28	250	10.5	31	284	6.0	30	229	5.6	28	290	10.7	28	261	8.5	31	245	10.5	31	239	3.0	23	264	10.5	23	280	9.1	31	273	9.1	28	244	11.0	31	228	3.7
3,000	31	264	9.2	27	255	12.9	31	287	7.5	30	239	8.0	27	287	13.0	28	262	10.9	31	248	12.3	31	238	3.9	21	268	11.8	27	270	11.1	30	278	11.2	27	237	12.9	31	242	4.6
4,000	31	261	11.9	26	252	17.6	31	278	9.9	31	250	13.2	26	279	18.5	27	264	14.6	30	251	15.0	31	261	6.0	19	271	15.3	27	270	15.4	27	284	13.9	27	240	17.9	31	256	6.6
5,000	30	262	16.4	24	257	23.0	31	270	11.3	31	256	16.1	24	279	20.7	25	272	17.8	30	252	17.8	31	266	8.6	18	263	20.9	26	273	17.6	26	287	16.6	25	249	21.1	31	263	9.8
6,000	30	263	18.9	22	259	23.9	30	268	13.3	31	254	18.7	23	280	24.1	23	269	20.5	28	253	19.3	31	261	10.2	17	267	22.8	23	276	21.9	24	279	17.5	21	240	23.1	31	264	12.2
8,000	24	276	21.9	15	256	30.2	28	263	16.1	30	252	25.5	20	278	28.8	18	270	25.6	23	248	26.9	25	271	12.3	10	277	22.9	11	288	24.2	21	271	21.9	16	246	24.0	27	272	15.9
10,000	18	268	26.6	6	269	36.7	17	258	17.1	22	251	29.7	8	275	34.4	12	285	31.2	19	249	33.2	23	277	18.2	7	277	28.8	5	282	34.7	9	250	18.8	9	249	29.0	23	280	19.9
12,000	8	261	27.2	---	---	---	12	264	17.2	15	252	26.7	---	---	---	5	285	37.7	6	261	20.8	16	280	19.1	---	---	---	---	---	---	---	---	---	---	---	---	20	279	22.2
14,000	---	---	---	---	---	---	7	261	18.1	---	---	---	---	---	---	---	---	---	6	273	19.3	10	264	16.7	---	---	---	---	---	---	---	---	---	---	---	---	11	284	23.2

Altitude (meters) m. s. l.	Nantucket, Mass. (14 m.)			Nashville, Tenn. (177 m.)			New Orleans, La. (6 m.)			Oakland, Calif. (31 m.)			Oklahoma City, Okla. (391 m.)			Rapid City, S. Dak. (980 m.)			Saint Cloud, Minn. (318 m.)			San Antonio, Tex. (242 m.)			San Juan, P. R. (28 m.)			Santa Maria, Calif. (72 m.)			Sault Ste. Marie, Mich. (224 m.)			Spokane, Wash. (721 m.)			Tatoosh Island, Wash. (33 m.)		
Surface	28	147	1.0	31	157	0.4	29	137	1.3	31	268	2.9	30	90	0.5	30	339	0.4	31	357	0.4	31	92	2.5	30	89	4.5	31	267	3.2	31	45	0.5	31	214	1.6	31	191	1.7
500	27	271	5.3	31	180	3.3	29	164	4.5	31	270	3.8	29	126	.4	---	---	---	31	22	.4	31	102	3.4	30	91	8.9	31	315	3.5	31	20	.9	---	---	---	30	219	3.2
1,000	27	279	6.5	29	212	5.7	28	192	5.6	31	275	3.4	29	208	2.6	30	341	.3	31	267	.9	31	134	3.9	30	90	8.4	31	324	3.0	31	266	2.8	31	224	2.9	30	227	4.3
1,500	25	289	7.4	29	233	7.3	28	211	7.1	31	288	3.1	26	252	5.0	30	278	2.7	30	264	3.4	31	199	4.3	28	88	7.2	31	333	3.6	31	275	5.9	30	247	3.6	30	233	4.8
2,000	26	286	9.8	28	247	9.4	28	226	8.0	31	297	4.2	25	251	8.0	30	286	5.1	30	266	5.4	30	240	6.9	28	78	6.9	31	323	5.2	31	282	7.9	30	256	4.4	30	248	5.8
2,500	26	283	12.1	27	254	11.1	28	236	9.3	31	295	6.5	25	250	11.0	29	298	5.4	29	277	7.2	30	254	9.5	28	76	6.9	31	314	8.0	31	279	9.9	30	268	5.1	31	254	7.0
3,000	25	280	14.3	27	256	13.7	26	234	12.1	31	300	8.0	26	254	13.3	29	290	7.1	29	281	8.8	30	254	11.7	27	70	7.2	31	309	10.1	30	278	11.7	29	270	6.0	31	261	8.2
4,000	25	279	18.6	23	261	17.0	26	242	17.1	30	308	10.7	26	253	16.2	27	289	7.2	28	276	10.4	30	256	15.7	27	57	7.7	31	305	12.6	30	282	16.4	29	276	8.2	30	273	9.3
5,000	25	281	21.2	21	267	21.9	25	246	20.4	28	300	13.6	25	252	19.0	27	272	8.9	27	266	14.1	30	254	19.4	27	46	8.1	29	292	13.6	30	280	19.7	29	278	10.7	25	277	8.9
6,000	24	282	25.1	14	275	22.2	22	250	22.4	26	298	15.2	19	252	23.7	26	273	10.4	27	267	16.5	28	250	22.4	27	19	6.8	28	291	14.9	26	279	21.0	28	272	12.0	21	273	10.1
8,000	19	284	29.9	8	280	25.2	16	254	27.2	20	296	15.3	11	254	26.5	25	269	12.2	23	260	21.0	18	254	26.2	26	348	8.9	22	301	19.6	20	282	27.2	23	279	14.6	19	273	13.6
10,000	6	283	32.0	---	---	---	13	269	32.9	16	289	16.2	5	260	32.9	22	263	13.2	17	266	22.6	7	256	42.2	26	324	13.5	15	306	20.6	---	---	---	18	276	17.6	17	284	14.6
12,000	---	---	---	---	---	---	9	265	34.0	9	279	20.8	---	---	---	21	253	15.9	9	268	18.5	---	---	---	24	297	20.7	8	298	22.8	---	---	---	11	286	15.1	16	296	14.1
14,000	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	5	272	15.1	6	258	19.8	---	---	---	16	299	18.0	---	---	---	---	---	---	---	---	---	13	298	10.4
16,000	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	5	328	8.8