METEOROLOGICAL AND CLIMATOLOGICAL DATA FOR FEBRUARY 1949

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 February, 1949*

STATIONS AND MEAN SURFACE PRESSURES

Standard pressure surface (mb.)	Albany, N. Y. (1,009.6 mb.)				Albuquerque, N. Mex. (836.9 mb.)				Atlanta, Ga. (986.8 mb.)				Big Spring, Tex. (928.4 mb.)				Bismarck, N. Dak. (955.8 mb.)				Boise, Idaho (914.3 mb.)				Brownsville, Tex. (1,016.6 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	28	86	−2.1	74	28	1,620	4.2	43	28	300	10.7	69	28	774	8.0	62	28	505	−16.2	77	28	868	−0.9	77	28	6	17.4	90
1,000	28	161	−2.6	70	28	141	(*)	----	28	188	(*)	----	28	152	(*)	----	28	161	(*)	----	28	146	(*)	----	28	147	17.5	87
950	28	575	−3.2	67	28	576	(*)	----	28	619	10.8	61	28	584	(*)	----	28	555	(*)	----	28	565	(*)	----	28	591	16.9	82
900	28	994	−4.5	66	28	1,025	(*)	----	28	1,067	9.6	56	28	1,033	10.5	54	28	960	−13.2	73	28	995	.7	66	28	1,048	15.9	70
850	28	1,444	−5.2	64	28	1,492	(*)	----	28	1,540	8.0	52	28	1,508	9.1	49	28	1,397	−10.7	68	28	1,452	−1.6	60	28	1,532	13.9	64
800	28	1,919	−6.4	56	28	1,986	3.1	39	28	2,039	6.3	47	28	2,008	7.0	41	28	1,864	−10.7	62	28	1,932	−4.8	61	28	2,041	12.4	54
750	28	2,428	−7.7	45	28	2,509	−.5	44	28	2,571	4.2	----	28	2,541	4.0	33	28	2,364	−12.5	61	28	2,439	−8.1	62	28	2,589	10.2	42
700	28	2,957	−9.6	40	28	3,053	−4.1	46	28	3,125	1.9	----	28	3,093	.2	36	28	2,884	−14.8	59	28	2,970	−11.4	62	28	3,151	6.7	40
650	28	3,532	−12.3	36	28	3,638	−8.1	45	28	3,720	−1.7	----	28	3,687	−4.0	35	28	3,447	−17.8	59	28	3,536	−14.7	58	28	3,755	2.6	44
600	28	4,134	−15.7	37	28	4,250	−12.2	43	28	4,351	−5.5	----	27	4,310	−8.0	----	28	4,036	−21.0	----	28	4,136	−18.7	56	28	4,397	−1.9	44
550	28	4,790	−19.2	----	28	4,910	−16.4	40	28	5,028	−9.5	----	27	4,981	−12.6	----	27	4,671	−25.3	----	28	4,779	−23.1	----	28	5,082	−6.1	40
500	27	5,491	−23.6	----	28	5,619	−21.4	----	28	5,759	−14.0	----	27	5,698	−17.5	----	27	5,354	−29.8	----	28	5,470	−27.9	----	27	5,830	−10.8	39
450	27	6,258	−28.9	----	28	6,389	−26.9	----	28	6,557	−19.3	----	27	6,483	−22.8	----	27	6,103	−35.2	----	27	6,220	−33.2	----	27	6,634	−16.3	39
400	27	7,086	−34.9	----	28	7,227	−33.2	----	28	7,416	−25.2	----	27	7,333	−29.1	----	26	6,903	−41.0	----	27	7,033	−38.6	----	27	7,500	−22.5	----
350	27	8,004	−41.4	----	28	8,152	−39.8	----	28	8,371	−32.6	----	27	8,274	−35.8	----	26	7,798	−47.2	----	27	7,938	−44.6	----	27	8,465	−29.7	----
300	27	9,034	−48.2	----	28	9,189	−47.0	----	28	9,438	−40.9	----	27	9,329	−43.2	----	26	8,806	−51.9	----	27	8,954	−51.1	----	26	9,550	−38.1	----
250	27	10,216	−54.7	----	28	10,378	−53.3	----	28	10,651	−50.8	----	27	10,534	−51.5	----	23	9,973	−55.0	----	26	10,118	−55.9	----	25	10,782	−47.5	----
200	22	11,586	−56.7	----	28	11,804	−55.4	----	26	12,072	−58.4	----	26	11,968	−55.7	----	17	11,391	−54.6	----	26	11,535	−55.4	----	23	12,230	−55.6	----
175	21	12,438	−54.5	----	26	12,661	−54.3	----	21	12,902	−59.5	----	26	12,817	−56.2	----	15	12,256	−52.9	----	24	12,394	−52.9	----	21	13,077	−59.1	----
150	20	13,421	−54.0	----	26	13,646	−55.4	----	19	13,858	−61.2	----	24	13,799	−58.2	----	13	13,250	−51.8	----	22	13,390	−52.2	----	16	14,042	−62.8	----
125	17	14,574	−54.4	----	20	14,783	−57.8	----	15	14,996	−64.0	----	23	14,934	−61.4	----	9	14,435	−50.5	----	19	14,574	−53.4	----	10	15,171	−66.6	----
100	11	16,002	−56.3	----	9	16,154	−59.8	----	9	16,341	−68.7	----	21	16,304	−63.9	----	----	----	----	----	18	16,000	−54.6	----	5	16,474	−71.2	----
80	5	17,434	−57.1	----	----	----	----	----	----	----	----	----	13	17,668	−64.7	----	----	----	----	----	10	17,442	−56.0	----	----	----	----	----

Standard pressure surface (mb.)	Buffalo, N. Y. (992.3 mb.)				Camaguey, Cuba. (1,006.3 mb.)				Caribou, Maine (994.5 mb.)				Charleston, S. C. (1,020.8 mb.)				Ciudad Victoria, Mex. (976.3 mb.)				Columbia, Mo. (990.5 mb.)				Dodge City, Kans. (925.0 mb.)			
Surface	27	221	−0.8	73	26	122	20.4	86	28	191	−11.8	75	28	13	12.5	85	27	335	22.9	52	26	239	0.8	74	28	792	−0.4	79
1,000	27	158	(*)	----	26	177	20.9	83	28	147	(*)	----	28	186	13.9	78	27	124	(*)	----	26	160	(*)	----	28	161	(*)	----
950	27	573	−1.7	69	26	623	19.3	76	28	545	−10.6	69	28	624	13.1	70	27	575	20.9	55	26	577	1.2	63	28	579	(*)	----
900	27	996	−3.3	64	26	1,085	17.2	66	28	957	−11.1	65	28	1,073	11.1	64	27	1,037	17.9	62	26	1,009	1.7	56	28	1,011	.6	66
850	27	1,447	−5.0	60	26	1,572	14.4	64	28	1,395	−12.0	62	28	1,549	9.2	55	27	1,524	15.0	67	26	1,469	.6	51	28	1,471	1.7	55
800	27	1,923	−6.4	56	26	2,081	11.7	55	28	1,858	−12.7	59	28	2,050	7.8	45	27	2,037	12.9	64	26	1,954	−.9	50	28	1,960	1.4	43
750	27	2,435	−7.8	53	26	2,625	11.0	----	28	2,354	−13.7	54	28	2,587	5.4	42	27	2,583	10.3	62	26	2,468	−3.3	48	28	2,481	−1.4	36
700	27	2,960	−10.6	52	26	3,195	9.5	----	28	2,872	−15.8	52	28	3,141	2.5	37	27	3,149	7.3	55	26	3,010	−5.7	43	28	3,023	−4.8	35
650	27	3,533	−13.3	53	26	3,810	6.2	----	28	3,431	−18.5	51	28	3,739	−1.1	----	27	3,759	3.3	53	26	3,593	−8.7	39	28	3,607	−8.3	33
600	27	4,133	−16.5	48	26	4,457	2.1	----	28	4,021	−21.5	----	28	4,371	−4.7	----	27	4,400	−.9	50	26	4,205	−12.0	35	28	4,218	−12.3	----
550	27	4,788	−20.5	----	26	5,155	−2.7	----	28	4,660	−24.7	----	27	5,049	−8.9	----	27	5,092	−5.1	40	26	4,868	−16.1	----	28	4,880	−16.8	----
500	26	5,478	−24.7	----	26	5,902	−7.9	----	28	5,346	−28.8	----	27	5,780	−13.2	----	27	5,833	−9.6	----	26	5,576	−21.0	----	23	5,586	−21.8	----
450	26	6,242	−29.7	----	26	6,716	−13.9	----	28	6,100	−33.3	----	27	6,583	−18.5	----	27	6,649	−14.9	----	24	6,359	−26.3	----	28	6,359	−27.4	----
400	26	7,067	−34.9	----	26	7,696	−20.8	----	28	6,912	−38.5	----	26	7,448	−24.6	----	26	7,520	−21.1	----	24	7,193	−32.4	----	28	7,190	−33.6	----
350	26	7,987	−40.9	----	26	8,568	−28.2	----	28	7,818	−44.2	----	26	8,405	−31.9	----	25	8,492	−28.3	----	23	8,119	−39.4	----	28	8,111	−40.9	----
300	25	9,030	−47.6	----	26	9,654	−36.6	----	28	8,838	−49.5	----	25	9,482	−40.2	----	24	9,582	−36.8	----	23	9,158	−46.6	----	26	9,140	−48.4	----
250	18	10,233	−54.7	----	25	10,892	−45.8	----	27	10,012	−53.4	----	25	10,699	−50.2	----	23	10,818	−47.1	----	16	10,392	−53.4	----	26	10,322	−54.2	----
200	14	11,653	−57.1	----	24	12,343	−55.4	----	24	11,431	−54.2	----	22	12,143	−58.1	----	21	12,270	−55.4	----	----	----	----	----	18	11,737	−55.8	----
175	9	12,527	−55.8	----	24	13,184	−60.6	----	21	12,269	−52.8	----	19	12,969	−59.8	----	14	13,119	−59.9	----	----	----	----	----	14	12,607	−55.4	----
150	----	----	----	----	24	14,130	−66.2	----	18	13,273	−52.7	----	13	13,934	−62.0	----	----	----	----	----	----	----	----	----	12	13,593	−56.4	----
125	----	----	----	----	23	15,217	−72.3	----	13	14,446	−52.3	----	6	15,042	−67.4	----	----	----	----	----	----	----	----	----	10	14,753	−59.0	----
100	----	----	----	----	10	16,523	−75.8	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	6	16,143	−61.3	----

Standard pressure surface (mb.)	El Paso, Tex. (881.5 mb.)				Ely, Nev. (806.0 mb.)				Glasgow, Mont. (937.6 mb.)				Grand Junction, Colo. (852.6 mb.)				Great Falls, Mont. (880.8 mb.)				Greensboro, N. C. (989.8 mb.)				Hatteras, N. C. (1,022.5 mb.)			
Surface	28	1,195	10.1	38	28	1,908	−9.2	74	28	648	−15.8	65	28	1,474	−6.4	72	28	1,128	−8.2	65	28	273	7.4	79	28	3	11.6	82
1,000	28	128	(*)	----	28	196	(*)	----	28	155	(*)	----	28	207	(*)	----	28	129	(*)	----	28	188	(*)	----	28	189	12.1	76
950	28	570	(*)	----	28	610	(*)	----	28	550	(*)	----	28	622	(*)	----	28	542	(*)	----	28	616	8.6	64	28	624	10.3	67
900	28	1,025	(*)	----	28	1,040	(*)	----	28	958	−11.7	66	28	1,050	(*)	----	28	965	(*)	----	28	1,059	6.8	63	28	1,067	8.5	59
850	28	1,499	10.4	33	28	1,491	(*)	----	28	1,398	−9.8	59	28	1,498	(*)	----	28	1,404	−7.2	55	28	1,527	5.4	54	28	1,538	6.6	50
800	28	2,000	6.9	36	28	1,967	(*)	----	28	1,865	−10.8	57	28	1,978	−2.9	52	28	1,875	−9.0	53	28	2,021	3.6	53	28	2,034	4.9	38
750	28	2,530	3.1	39	28	2,478	−6.5	57	28	2,366	−12.2	56	28	2,490	−4.9	51	28	2,379	−10.9	56	28	2,546	1.9	44	28	2,564	2.7	36
700	28	3,082	−.7	38	28	3,010	−9.8	55	28	2,885	−14.8	55	28	3,026	−8.7	54	28	2,901	−13.4	56	28	3,098	−.5	41	28	3,113	.1	36
650	28	3,669	−4.9	36	28	3,584	−13.1	51	28	3,448	−18.0	55	28	3,601	−12.2	54	28	3,465	−16.7	50	28	3,688	−3.6	----	27	3,705	−3.0	----
600	28	4,293	−9.3	----	28	4,183	−16.3	47	28	4,036	−21.5	----	28	4,205	−15.6	49	28	4,058	−20.7	----	28	4,315	−7.6	----	27	4,335	−6.8	----
550	27	4,964	−13.8	----	28	4,836	−20.6	----	28	4,673	−25.7	----	28	4,859	−19.9	48	28	4,695	−25.1	----	28	4,968	−11.8	----	27	5,007	−11.1	----
500	27	5,681	−18.7	----	28	5,532	−25.2	----	28	5,356	−30.7	----	28	5,557	−24.7	----	28	5,380	−30.0	----	27	5,705	−16.9	----	27	5,732	−15.7	----
450	27	6,463	−24.3	----	28	6,294	−30.5	----	27	6,094	−36.4	----	28	6,320	−30.2	----	28	6,127	−35.5	----	27	6,494	−22.0	----	27	6,521	−21.1	----
400	26	7,308	−30.8	----	28	7,117	−36.4	----	26	6,892	−42.1	----	27	7,149	−36.1	----	28	6,931	−41.5	----	27	7,345	−27.8	----	27	7,380	−26.2	----
350	26	8,243	−37.6	----	28	8,028	−43.5	----	26	7,783	−48.1	----	27	8,063	−42.6	----	28	7,824	−47.6	----	27	8,288	−34.4	----	25	8,328	−33.7	----
300	24	9,298	−44.9	----	27	9,050	−51.1	----	25	8,796	−52.9	----	23	9,069	−49.9	----	26	8,849	−53.0	----	25	9,355	−41.8	----	23	9,387	−41.5	----
250	21	10,487	−53.1	----	26	10,224	−56.3	----	24	9,956	−55.7	----	22	10,252	−54.8	----	25	10,017	−57.6	----	22	10,585	−50.9	----	22	10,595	−50.9	----
200	18	11,908	−56.2	----	22	11,652	−56.7	----	19	11,354	−53.5	----	19	11,663	−54.2	----	21	11,425	−57.0	----	20	12,016	−58.0	----	19	12,012	−57.1	----
175	16	12,756	−55.6	----	20	12,501	−55.8	----	18	12,205	−51.6	----	13	12,503	−52.0	----	16	12,275	−53.6	----	17	12,867	−58.9	----	10	12,855	−56.7	----
150	11	13,744	−57.4	----	19	13,489	−55.8	----	14	13,194	−51.0	----	10	13,511	−52.6	----	15	13,262	−51.9	----	10	13,821	−59.7	----	9	13,847	−59.5	----
125	7	14,882	−60.6	----	17	14,655	−58.2	----	11	14,372	−51.5	----	5	14,679	−54.7	----	14	14,446	−52.1	----	7	14,946	−60.7	----	----	----	----	----
100	----	----	----	----	12	16,069	−58.8	----	6	15,848	−49.6	----	----	----	----	----	13	15,894	−52.3	----	----	----	----	----	----	----	----	----
80	----	----	----	----	5	17,475	−61.0	----	----	----	----	----	----	----	----	----	10	17,339	−52.2	----	----	----	----	----	----	----	----	----

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 February, 1949*—Continued

Standard pressure surface (mb.)	Havana, Cuba.[1] (mb.)				Honolulu, T. H. (1,015.2 mb.)				International Falls, Minn. (973.0 mb.)				Joliet, Ill. (997.8 mb.)				Lake Charles, La. (1,019.6 mb.)				Lander, Wyo. (823.3 mb.)				Las Vegas, Nev. (939.8 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					28	3	24.0	68	28	360	−16.5	73	28	178	−3.0	79	28	5	14.0	87	28	1,696	−7.1	56	28	660	5.1	54
1,000					28	135	22.2	70	28	152	(*)		28	159	−4.1	73	28	169	14.3	81	28	151	(*)		28	146	(*)	
950					28	579	18.5	75	28	541	−15.0	69	28	568	−3.1	70	28	606	13.5	72	28	568	(*)		28	574	(*)	
900					28	1,041	14.9	81	28	948	−15.6	68	28	994	−2.9	60	28	1,057	12.6	64	28	998	(*)		28	1,015	6.4	40
850					28	1,523	12.7	73	28	1,380	−14.2	66	28	1,447	−3.1	53	28	1,537	10.9	59	28	1,446	(*)		28	1,481	3.1	43
800					28	2,031	11.5	52	28	1,840	−14.1	62	28	1,926	−4.6	51	28	2,040	8.5	56	28	1,922	−3.9	46	28	1,970	.3	44
750					28	2,572	8.6	47	28	2,333	−15.6	58	28	2,438	−6.6	42	28	2,576	6.0	50	28	2,435	−6.4	40	28	2,488	−2.9	46
700					28	3,135	6.2	41	28	2,846	−17.6	55	28	2,969	−9.1	42	28	3,134	3.1	49	28	2,966	−9.6	39	28	3,028	−6.0	44
650					28	3,741	2.8	37	28	3,407	−20.5		28	3,548	−12.3	41	27	3,733	−.2	42	28	3,542	−13.0	39	28	3,608	−9.6	40
600					28	4,382	−.1		28	3,986	−23.9		28	4,146	−15.6	36	27	4,368	−4.5		28	4,140	−17.0	37	28	4,218	−13.7	38
550					28	5,070	−5.4		28	4,621	−27.4		28	4,802	−19.1	31	26	5,048	−8.8		28	4,791	−21.6		28	4,874	−18.1	35
500					28	5,813	−9.8		28	5,295	−31.8		28	5,502	−23.8		26	5,780	−13.5		28	5,482	−26.6		28	5,578	−23.1	
450					28	6,623	−15.2		28	6,036	−36.7		28	6,267	−29.0		26	6,579	−18.8		28	6,243	−32.3		28	6,345	−29.1	
400					28	7,498	−21.6		28	6,840	−41.5		28	7,096	−34.8		26	7,441	−25.1		28	7,056	−38.5		28	7,172	−35.2	
350					28	8,467	−28.5		28	7,735	−46.7		28	8,015	−41.3		25	8,393	−32.4		28	7,959	−45.3		28	8,089	−42.0	
300					28	9,553	−36.3		28	8,743	−52.3		28	9,046	−47.9		25	9,461	−40.6		27	8,980	−52.3		28	9,117	−49.0	
250					28	10,796	−44.5		28	9,912	−54.8		28	10,233	−53.6		25	10,677	−50.3		23	10,154	−58.0		28	10,296	−55.1	
200					28	12,259	−53.9		23	11,332	−53.7		28	11,657	−55.9		24	12,108	−57.5		20	11,570	−57.6		25	11,700	−56.3	
175					28	13,107	−58.9		23	12,191	−52.6		28	12,508	−55.0		24	12,946	−59.9		16	12,433	−54.7		24	12,546	−54.2	
150					28	14,062	−63.5		23	13,187	−52.6		28	13,492	−55.3		21	13,907	−62.8		14	13,433	−54.4		23	13,538	−55.3	
125					28	15,169	−67.8		19	14,360	−52.9		25	14,643	−56.9		17	15,006	−66.7		11	14,590	−55.2		21	14,689	−57.4	
100					27	16,497	−72.6		10	15,798	−51.7		19	16,046	−58.4		10	16,338	−70.6		7	15,989	−54.8		14	16,076	−58.5	
80					26	17,805	−72.2		6	17,271	−49.7		12	17,422	−55.7		6	17,659	−71.1						9	17,451	−57.7	
60					26	19,526	−64.5																					
50					21	20,654	−59.9																					
40					20	22,063	−55.8																					
30					18	23,912	−51.8																					

Standard pressure surface (mb.)	Little Rock, Ark. (1,011.2 mb.)				Mazatlan, Mex. (1,011.3 mb.)				Medford, Oreg. (968.9 mb.)				Merida, Mex. (1,013.5 mb.)				Miami, Fla. (1,020.8 mb.)				Nantucket, Mass. (1,018.4 mb.)				Nashville, Tenn. (1,000.2 mb.)			
Surface	28	79	8.3	77	28	14	19.9	78	28	401	4.2	81	28	27	25.4	71	28	4	22.2	77	28	14	1.8	82	28	177	6.8	78
1,000	28	171	8.9	69	28	111	19.8	71	28	143	(*)		28	145	24.8	71	28	183	21.9	74	28	160	2.1	76	28	179	(*)	
950	28	597	8.7	64	28	565	21.9	38	28	565	4.8	71	28	594	22.7	67	28	628	19.0	72	28	575	.8	66	28	604	6.4	67
900	28	1,043	7.4	57	28	1,022	19.9	36	28	1,000	2.4	66	28	1,064	19.5	71	28	1,090	15.9	68	28	1,007	−.5	63	28	1,044	5.7	58
850	28	1,513	6.6	45	28	1,512	16.7	36	28	1,460	−1.0	69	28	1,554	16.1	75	28	1,574	12.8	67	28	1,462	−2.2	55	28	1,510	4.2	48
800	28	2,009	5.0	39	28	2,025	13.2	37	28	1,941	−4.3	72	28	2,066	12.4	78	28	2,081	11.1	50	28	1,943	−3.4	48	28	2,002	2.7	42
750	28	2,539	2.8	35	28	2,574	9.2	40	28	2,451	−7.1	67	28	2,608	9.8	64	28	2,624	9.8	28	28	2,458	−4.9	45	28	2,525	.4	39
700	28	3,088	−.1	34	28	3,131	5.2	41	28	2,982	−10.1	61	28	3,178	8.8		28	3,189	7.5		28	2,992	−7.1	43	28	3,073	−1.9	
650	28	3,681	−3.5		28	3,734	1.4	43	28	3,553	−13.3	54	28	3,789	6.4		28	3,800	4.7		28	3,569	−10.0	40	28	3,664	−5.4	
600	26	4,304	−7.5		27	4,373	−3.0	50	28	4,154	−17.1	48	27	4,440	2.3		28	4,444	1.1		28	4,180	−13.3	38	28	4,281	−9.1	
550	26	4,977	−11.8		27	5,057	−7.2	47	28	4,802	−21.1		26	5,131	−2.1		28	5,140	−3.5		27	4,836	−17.3		28	4,953	−13.4	
500	26	5,698	−16.9		27	5,793	−12.0	44	28	5,499	−25.5		26	5,886	−7.6		28	5,882	−9.1		26	5,551	−21.9		28	5,668	−18.0	
450	25	6,484	−22.8		25	6,601	−16.4	47	28	6,263	−30.8		26	6,702	−13.4		28	6,695	−14.9		26	6,321	−27.2		28	6,450	−23.5	
400	25	7,332	−28.7		25	7,470	−22.4		28	7,081	−36.7		26	7,583	−20.1		28	7,570	−21.4		26	7,157	−33.2		28	7,299	−29.3	
350	25	8,275	−35.2		25	8,436	−29.7		28	7,994	−43.0		26	8,556	−28.1		27	8,538	−29.2		25	8,090	−39.6		28	8,240	−35.7	
300	25	9,332	−42.8		25	9,517	−37.7		27	9,011	−49.6		26	9,642	−36.7		27	9,619	−38.0		24	9,126	−46.7		26	9,283	−43.2	
250	25	10,538	−51.5		24	10,751	−47.1		27	10,187	−55.2		26	10,878	−46.6		25	10,847	−47.3		23	10,309	−53.8		25	10,497	−51.9	
200	24	11,963	−57.4		24	12,195	−56.4		23	11,614	−56.2		26	12,321	−57.2		22	12,293	−55.8		20	11,731	−57.3		23	11,914	−57.6	
175	20	12,797	−56.1		23	13,040	−58.9		17	12,456	−54.1		25	13,152	−62.5		20	13,138	−59.3		19	12,578	−55.9		20	12,759	−58.2	
150	18	13,765	−58.4		22	13,994	−62.9		13	13,474	−54.0		24	14,087	−61.8		17	14,090	−64.3		18	13,561	−55.2		18	13,717	−58.7	
125	14	14,900	−60.4		18	15,106	−68.3		9	14,654	−54.6		22	15,167	−73.8		11	15,181	−69.1		16	14,709	−56.9		8	14,815	−59.5	
100	8	16,270	−61.5		15	16,425	−73.1		7	16,108	−56.6		13	16,433	−78.6		6	16,501	−74.0		15	16,117	−58.8		5	16,183	−62.3	
80	5	17,636	−62.3		7	17,740	−73.4		5	17,526	−56.2		6	17,714	−78.8						8	17,508	−58.5					

Standard pressure surface (mb.)	New Orleans, La. (1,020.1 mb.)				North Platte, Nebr. (916.8 mb.)				Oakland, Calif. (1,018.9 mb.)				Oklahoma City, Okla. (972.7 mb.)				Omaha, Nebr. (982.2 mb.)				Phoenix, Ariz. (976.8 mb.)				Pittsburgh, Pa (974.5 mb.)			
Surface	28	2	15.5	86	28	849	−5.1	72	28	6	9.0	79	28	391	3.5	81	28	308	−5.0	76	28	339	11.2	49	28	382	2.3	73
1,000	28	171	15.7	81	28	157	(*)		28	161	8.3	77	28	166	(*)		28	165	(*)		28	140	(*)		28	170	(*)	
950	28	607	14.8	69	28	568	(*)		28	585	5.8	73	28	586	3.9	75	28	574	−5.9	70	28	576	13.4	32	28	592	2.1	66
900	28	1,064	13.2	59	28	994	−2.9	65	28	1,025	3.8	65	28	1,025	5.3	62	28	992	−4.6	66	28	1,024	10.0	34	28	1,022	.5	62
850	28	1,543	11.4	60	28	1,448	−2.2	50	28	1,487	1.5	58	28	1,491	4.4	54	28	1,444	−3.0	57	28	1,496	6.3	37	28	1,479	−1.0	56
800	28	2,048	9.2	57	28	1,929	−3.3	44	28	1,973	−1.0	51	28	1,984	2.6	45	28	1,923	−3.5	48	28	1,989	2.7	40	28	1,961	−2.9	54
750	28	2,582	6.4	54	28	2,442	−5.6	41	28	2,492	−3.5	49	28	2,508	.4	41	28	2,436	−5.7	43	28	2,512	−.9	39	28	2,479	−4.9	50
700	28	3,143	3.4	52	28	2,974	−8.9	42	28	3,028	−6.5	49	28	3,055	−2.5	38	28	2,969	−8.6	41	28	3,055	−4.3	37	28	3,011	−7.5	49
650	26	3,739	.0	47	28	3,550	−12.6	44	27	3,610	−10.0	49	28	3,641	−6.2	39	28	3,545	−12.2	40	28	3,638	−7.8		28	3,592	−10.6	50
600	26	4,375	−3.8	42	28	4,151	−16.5	41	27	4,218	−13.9	45	28	4,260	−10.0		28	4,148	−16.1	40	28	4,252	−12.0		28	4,197	−13.8	48
550	26	5,057	−7.9		28	4,803	−20.3	36	27	4,876	−18.6	43	28	4,928	−14.5		28	4,798	−20.4		28	4,915	−16.7		27	4,857	−17.8	43
500	26	5,793	−12.4		28	5,500	−25.1		27	5,578	−23.2		28	5,641	−19.6		28	5,498	−24.7		28	5,621	−22.0		27	5,557	−21.8	
450	26	6,595	−18.2		27	6,256	−30.9		27	6,347	−28.5		27	6,416	−25.6		27	6,266	−29.5		28	6,395	−27.6		27	6,337	−27.0	
400	26	7,460	−24.5		27	7,077	−37.3		27	7,174	−34.9		26	7,259	−31.5		27	7,093	−35.3		28	7,226	−33.5		27	7,165	−32.9	
350	26	8,418	−31.8		23	7,999	−43.4		27	8,092	−41.7		23	8,210	−37.8		27	8,010	−41.9		28	8,149	−40.3		25	8,081	−39.5	
300	26	9,488	−40.4		22	9,029	−49.6		27	9,120	−48.8		20	9,273	−44.9		26	9,044	−49.2		28	9,184	−47.5		22	9,114	−46.3	
250	25	10,707	−50.1		19	10,241	−54.3		26	10,310	−55.4		15	10,449	−53.3		26	10,223	−55.3		28	10,370	−54.0		18	10,324	−53.3	
200	24	12,132	−58.0		18	11,675	−56.4		26	11,720	−56.7		12	11,849	−55.0		23	11,645	−56.1		27	11,787	−55.5		11	11,783	−56.1	
175	21	12,970	−60.8		16	12,519	−54.1		25	12,561	−55.5		10	12,689	−54.8		21	12,494	−55.0		25	12,627	−55.0		6	12,614	−53.4	
150	19	13,923	−63.2		12	13,530	−54.9		23	13,552	−55.4		6	13,677	−55.8		15	13,511	−54.9		24	13,616	−56.2					
125	16	15,033	−66.9		7	14,668	−57.4		21	14,707	−57.1		5	14,838	−59.6		10	14,665	−56.0		24	14,769	−58.8					
100	10	16,389	−70.4						16	16,096	−58.4						6	16,039	−56.4		19	16,147	−60.4					
80									8	17,471	−57.7						5	17,464	−57.8		12	17,511	−60.4					

[1] 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 February, 1949*—Continued

Standard pressure surface (mb.)	Portland, Maine (1,017.1 mb.)				Rapid City, S. Dak. (899.8 mb.)				St. Cloud, Minn. (978.7 mb.)				San Antonio, Tex. (990.4 mb.)				San Juan, P. R. (1,017.5 mb.)				Santa Maria, Calif. (1,011.3 mb.)				Sault Ste. Marie, Mich. (989.6 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	28	20	−3.5	73	28	980	−9.2	70	28	317	−12.6	76	28	240	13.1	76	28	15	23.3	77	28	71	8.9	78	28	221	−7.0	78
1,000	28	154	−3.0	66	28	152	(*)	----	28	151	(*)	----	28	157	(*)	----	28	166	22.2	75	28	164	9.0	73	28	138	(*)	----
950	28	564	−4.0	61	28	557	(*)	----	28	548	−11.6	72	28	595	13.3	71	28	612	18.4	80	28	592	7.5	66	28	538	−8.5	79
900	28	985	−5.3	59	28	980	(*)	----	28	958	−10.2	66	28	1,045	12.1	68	28	1,072	15.0	80	28	1,031	5.1	62	28	956	−10.1	79
850	28	1,433	−6.1	57	28	1,425	−6.2	60	28	1,399	−9.8	60	28	1,523	11.2	60	28	1,554	11.7	79	28	1,496	2.7	58	28	1,395	−11.6	76
800	28	1,906	−7.0	49	28	1,899	−6.7	52	28	1,867	−9.6	54	28	2,029	9.4	51	28	2,059	9.6	66	28	1,984	.4	47	28	1,859	−12.1	72
750	28	2,414	−8.8	44	28	2,403	−8.4	49	28	2,369	−11.2	54	28	2,565	6.8	45	28	2,604	9.9	----	28	2,506	−1.8	39	28	2,359	−13.8	70
700	28	2,940	−10.9	44	28	2,933	−11.5	47	28	2,891	−13.8	54	28	3,125	3.2	40	28	3,166	7.8	----	28	3,046	−4.7	35	28	2,873	−15.7	67
650	28	3,515	−13.4	41	28	3,502	−14.6	45	28	3,456	−16.8	53	28	3,723	−.9	36	27	3,775	4.5	----	28	3,628	−8.2	36	28	3,436	−18.4	61
600	28	4,113	−16.8	41	27	4,096	−18.6	42	28	4,048	−20.1	49	28	4,355	−5.0	35	26	4,419	.9	----	28	4,242	−12.3	34	28	4,022	−22.2	----
550	28	4,764	−20.7	----	27	4,740	−22.8	----	28	4,689	−24.0	----	28	5,036	−9.6	34	25	5,111	−3.6	----	28	4,904	−16.4	33	27	4,656	−26.3	----
500	28	5,460	−25.0	----	27	5,432	−27.8	----	28	5,384	−28.1	----	28	5,762	−14.6	38	25	5,859	−8.9	----	28	5,611	−21.3	----	26	5,346	−30.1	----
450	28	6,220	−30.2	----	27	6,186	−33.3	----	27	6,137	−33.2	----	27	6,564	−19.6	39	24	6,675	−14.9	----	28	6,388	−26.8	----	23	6,086	−35.4	----
400	28	7,046	−36.1	----	27	6,997	−39.5	----	27	6,950	−38.7	----	27	7,418	−25.4	----	24	7,546	−21.6	----	28	7,219	−33.1	----	20	6,908	−40.6	----
350	28	7,960	−42.4	----	26	7,904	−45.5	----	26	7,859	−44.7	----	27	8,373	−32.4	----	24	8,517	−28.2	----	27	8,137	−40.2	----	19	7,798	−46.4	----
300	25	8,992	−48.8	----	26	8,919	−51.1	----	26	8,877	−50.2	----	27	9,442	−40.3	----	24	9,605	−36.0	----	27	9,172	−47.3	----	15	8,827	−51.5	----
250	23	10,181	−55.1	----	21	10,108	−54.5	----	26	10,053	−54.6	----	25	10,672	−49.2	----	23	10,848	−44.7	----	27	10,357	−54.4	----	7	10,080	−57.0	----
200	21	11,597	−56.8	----	19	11,515	−54.8	----	15	11,513	−55.6	----	20	12,113	−56.6	----	22	12,311	−54.4	----	27	11,774	−56.8	----	5	11,474	−57.5	----
175	19	12,449	−55.3	----	17	12,353	−52.2	----	12	12,413	−55.6	----	16	12,957	−58.4	----	20	13,157	−60.1	----	27	12,623	−55.7	----	----	----	----	----
150	17	13,443	−55.4	----	16	13,345	−52.0	----	12	13,395	−54.6	----	15	13,925	−60.2	----	20	14,106	−66.0	----	26	13,600	−56.1	----	----	----	----	----
125	15	14,605	−55.8	----	11	14,489	−51.6	----	11	14,566	−54.3	----	8	15,058	−63.8	----	18	15,194	−71.9	----	26	14,754	−57.6	----	----	----	----	----
100	9	16,002	−58.3	----	----	----	----	----	9	16,006	−54.7	----	5	16,430	−68.0	----	12	16,498	−77.0	----	24	16,147	−59.2	----	----	----	----	----
80	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	10	17,773	−78.9	----	22	17,543	−59.4	----	----	----	----	----
60	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	13	19,342	−58.0	----	----	----	----	----
50	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	8	20,505	−58.1	----	----	----	----	----

Standard pressure surface (mb.)	Spokane, Wash. (927.0 mb.)				Swan Island, W. I.[1]				Tacubaya, Mex. (773.5 mb.)				Tampa, Fla. (1,020.5 mb.)				Tatoosh Island, Wash. (1,006.2 mb.)				Toledo, Ohio (996.2 mb.)				Washington, D. C. (1,018.9 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	27	721	−3.7	86	----	----	----	----	28	2,306	16.6	40	28	9	19.2	85	28	31	3.6	84	28	191	−0.6	81	28	25	6.1	66
1,000	27	117	(*)	----	----	----	----	----	28	54	(*)	----	28	184	19.8	77	28	81	3.2	81	28	160	(*)	----	28	178	5.9	61
950	27	525	(*)	----	----	----	----	----	28	518	(*)	----	28	629	18.0	68	28	497	1.6	78	28	574	−.5	71	28	600	4.5	57
900	27	956	−2.4	75	----	----	----	----	28	995	(*)	----	28	1,087	15.3	67	28	930	−1.1	78	28	1,002	−1.7	61	28	1,035	2.4	57
850	27	1,407	−5.0	68	----	----	----	----	28	1,490	(*)	----	28	1,570	12.2	67	28	1,383	−3.9	77	28	1,456	−2.7	54	28	1,496	1.1	56
800	27	1,881	−7.8	66	----	----	----	----	28	2,019	(*)	----	28	2,076	10.4	50	28	1,860	−6.5	71	28	1,936	−4.5	50	28	1,982	−.3	53
750	27	2,383	−10.8	69	----	----	----	----	28	2,570	15.2	42	28	2,616	7.8	45	28	2,364	−9.0	64	28	2,447	−6.6	47	28	2,503	−2.1	46
700	27	2,907	−13.9	64	----	----	----	----	28	3,149	10.7	47	28	3,178	5.4	39	28	2,892	−12.0	57	28	2,979	−9.2	44	28	3,043	−4.9	45
650	27	3,472	−17.1	60	----	----	----	----	28	3,763	5.7	54	28	3,786	2.6	32	28	3,461	−15.2	58	28	3,555	−12.2	40	28	3,628	−7.6	45
600	27	4,064	−20.8	----	----	----	----	----	28	4,411	.4	62	27	4,424	−1.1	----	28	4,057	−18.8	55	28	4,157	−15.6	40	28	4,242	−11.0	40
550	27	4,703	−24.6	----	----	----	----	----	28	5,107	−4.2	44	27	5,112	−5.4	----	28	4,701	−22.7	----	27	4,816	−19.0	36	28	4,907	−15.5	40
500	27	5,389	−29.4	----	----	----	----	----	27	5,848	−8.5	----	27	5,852	−10.6	----	28	5,394	−26.9	----	27	5,518	−23.5	----	28	5,617	−20.1	----
450	26	6,142	−34.5	----	----	----	----	----	27	6,669	−13.6	----	27	6,661	−16.1	----	28	6,150	−31.8	----	27	6,285	−28.9	----	28	6,398	−25.1	----
400	26	6,950	−40.1	----	----	----	----	----	27	7,545	−19.6	----	26	7,531	−22.6	----	28	6,969	−37.8	----	27	7,113	−34.9	----	28	7,236	−31.0	----
350	26	7,850	−45.8	----	----	----	----	----	27	8,520	−27.5	----	26	8,496	−30.2	----	28	7,877	−43.6	----	26	8,037	−41.3	----	28	8,169	−37.6	----
300	25	8,865	−51.3	----	----	----	----	----	27	9,610	−36.0	----	26	9,572	−39.0	----	28	8,899	−49.9	----	24	9,090	−47.8	----	28	9,215	−45.1	----
250	23	10,023	−55.4	----	----	----	----	----	26	10,851	−45.2	----	24	10,795	−48.9	----	27	10,068	−55.0	----	23	10,278	−55.0	----	28	10,411	−52.5	----
200	15	11,390	−52.8	----	----	----	----	----	25	12,312	−55.5	----	22	12,239	−57.2	----	24	11,486	−55.0	----	22	11,677	−57.5	----	28	11,834	−56.9	----
175	11	12,245	−51.5	----	----	----	----	----	25	13,153	−60.8	----	19	13,066	−60.7	----	22	12,344	−52.6	----	22	12,522	−56.1	----	25	12,677	−56.6	----
150	9	13,234	−48.1	----	----	----	----	----	23	14,100	−65.7	----	18	14,020	−65.0	----	21	13,331	−51.6	----	18	13,474	−55.9	----	23	13,645	−57.2	----
125	7	14,417	−48.0	----	----	----	----	----	19	15,178	−71.7	----	16	15,119	−70.0	----	18	14,516	−51.4	----	14	14,621	−56.5	----	17	14,779	−58.7	----
100	6	15,905	−49.2	----	----	----	----	----	16	16,485	−76.6	----	11	16,441	−74.2	----	14	15,963	−52.0	----	11	16,016	−56.5	----	7	16,158	−60.1	----
80	----	----	----	----	----	----	----	----	9	17,769	−78.3	----	7	17,740	−75.8	----	10	17,433	−51.7	----	5	17,416	−56.5	----	----	----	----	----

See footnotes at end of table.

LATE REPORTS FROM SWAN ISLAND, W. I., FOR DECEMBER 1948 AND JANUARY 1949

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*—Continued

Standard pressure surface (mb.)	Swan Island, W. I. (1,014.3 mb.)				Swan Island, W. I. (1,016.1 mb.)			
Surface	31	10	25.8	81	30	10	25.0	75
1,000	31	135	25.6	78	30	150	24.3	74
950	31	590	22.1	82	30	601	20.6	79
900	31	1,056	19.2	76	30	1,064	17.3	76
850	31	1,546	16.1	72	30	1,550	14.0	73
800	31	2,059	13.0	68	30	2,061	11.9	58
750	31	2,605	10.7	55	30	2,604	10.0	33
700	31	3,173	8.1	42	30	3,170	8.2	----
650	31	3,788	5.2	33	29	3,784	6.1	----
600	31	4,431	2.1	----	29	4,431	2.5	----
550	31	5,129	−2.0	----	29	5,130	−1.3	----
500	31	5,880	−6.7	----	29	5,882	−6.1	----
450	31	6,701	−12.3	----	29	6,703	−12.2	----
400	31	7,584	−18.9	----	29	7,588	−19.0	----
350	31	8,564	−26.1	----	29	8,566	−27.1	----
300	31	9,659	−34.6	----	29	9,655	−36.3	----
250	30	10,906	−44.6	----	29	10,893	−46.1	----
200	30	12,363	−55.2	----	29	12,347	−55.4	----
175	30	13,203	−61.0	----	29	13,188	−60.2	----
150	30	14,148	−66.9	----	19	14,141	−65.6	----
125	28	15,232	−72.6	----	11	15,243	−71.1	----
100	23	16,532	−77.7	----	----	----	----	----
80	14	17,805	−79.0	----	----	----	----	----
60	5	19,475	−72.7	----	----	----	----	----

[1] Data not yet received.

(*) 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. Relative humidity data, beginning with October 1, 1948, were computed, and expressed in these tables, on the basis of the vapor pressure over water. Upper air values of relative humidity at levels with temperatures less than 0° C. have formerly been computed and expressed on the basis of the vapor pressure over ice. 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 February 1949. Directions given in degrees from north (N=360°, E=90°, S=180°, W=270°). Speeds 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. (505 m.)			Boise, Idaho (868 m.)			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	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed
Surface	25	196	2.1	28	236	1.0	26	288	0.8	27	255	2.5	27	9	0.9	25	121	2.7	19	133	4.7	24	283	3.5	28	225	1.3	26	244	1.3	26	246	2.2	28	325	1.8	28	238	3.3
500	---	---	---	---	---	---	26	251	.8	---	---	---	---	---	---	---	---	---	19	138	6.2	24	262	5.4	28	197	2.7	26	234	3.2	26	239	3.8	---	---	---	---	---	---
1,000	25	198	4.2	---	---	---	25	227	2.1	---	---	---	27	273	2.8	25	126	3.0	13	167	8.4	19	259	6.8	21	276	6.0	24	246	5.4	20	230	7.1	---	---	---	---	---	---
1,500	21	226	6.4	---	---	---	22	264	4.9	27	240	6.8	25	283	5.2	25	197	2.5	11	188	5.8	16	267	10.5	20	282	9.0	24	264	7.6	19	243	9.6	---	---	---	28	245	3.8
2,000	19	245	10.9	28	224	2.1	21	279	7.3	27	263	9.4	24	281	7.6	25	237	4.2	---	---	---	15	281	13.0	17	293	13.4	21	273	9.7	18	253	11.6	28	300	2.8	28	248	5.0
2,500	19	243	11.5	28	247	4.2	18	272	10.7	25	273	11.3	22	281	9.8	23	246	6.1	---	---	---	12	283	15.7	16	290	14.9	19	274	11.9	17	255	14.5	27	267	3.6	27	246	7.5
3,000	17	253	12.7	25	258	7.2	16	279	12.5	23	277	12.6	22	279	11.6	17	257	5.4	---	---	---	10	289	15.7	13	294	15.6	19	275	14.5	16	259	16.8	27	271	6.6	27	248	10.4
4,000	16	250	17.7	23	265	13.2	13	280	17.0	22	287	15.0	17	280	16.1	14	248	4.8	---	---	---	---	---	---	13	295	20.9	14	275	18.7	13	266	21.6	27	273	10.4	25	251	13.5
5,000	15	248	20.7	19	260	16.7	---	---	---	19	286	14.1	13	292	15.5	12	231	6.0	---	---	---	---	---	---	11	291	26.7	13	276	20.7	12	267	26.9	25	272	16.1	23	251	17.8
6,000	14	246	25.3	18	260	17.8	---	---	---	15	287	12.8	---	---	---	10	240	2.4	---	---	---	---	---	---	---	---	---	11	279	24.0	---	---	---	24	263	17.8	19	250	20.4
8,000	---	---	---	16	260	18.2	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	17	269	26.3	13	261	25.1
10,000	---	---	---	11	258	17.4	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

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. (663 m.)			Little Rock, Ark. (88 m.)			Medford, Oreg. (416 m.)			Miami, Fla. (12 m.)			Mobile, Ala. (66 m.)			Nashville, Tenn. (182 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	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed	Observations	Direction	Speed
Surface	26	186	2.0	27	303	1.3	24	261	1.9	27	270	1.1	23	130	0.7	24	239	3.6	28	221	1.3	27	90	0.3	26	273	1.4	28	127	4.1	24	162	0.5	26	204	0.8	26	270	2.5
500	---	---	---	---	---	---	24	259	3.3	---	---	---	23	259	1.3	24	245	5.9	---	---	---	27	217	1.0	26	248	1.2	28	126	4.0	23	214	.8	26	210	2.5	26	271	4.0
1,000	---	---	---	---	---	---	24	262	4.8	27	249	4.2	22	243	3.1	19	256	9.0	28	215	.9	27	231	3.2	26	204	2.7	28	125	2.6	18	272	1.6	26	227	4.4	25	231	7.4
1,500	---	---	---	27	303	1.4	23	262	7.2	27	263	9.4	21	254	5.6	17	262	11.8	28	243	2.2	25	247	5.6	25	227	4.6	25	104	.5	15	297	4.6	23	240	6.8	22	288	12.2
2,000	26	215	1.8	27	267	1.4	19	283	11.4	24	275	10.1	19	261	7.5	16	265	13.3	27	251	3.3	24	259	7.6	20	242	5.5	23	281	1.2	14	290	7.8	21	255	9.4	17	295	14.5
2,500	25	232	2.7	27	224	3.7	19	284	13.8	22	281	11.4	17	266	9.7	15	265	14.9	27	263	5.0	23	258	10.6	14	256	4.4	18	282	1.1	13	282	8.6	20	263	11.1	16	285	14.6
3,000	25	248	4.4	25	237	6.6	19	284	15.6	20	287	11.2	15	261	12.3	15	269	16.9	25	258	5.3	20	259	12.3	12	264	4.1	17	263	1.5	11	273	9.6	19	276	12.7	12	284	15.2
4,000	21	259	7.1	20	271	9.6	17	281	20.4	---	---	---	10	267	15.2	14	263	21.4	22	263	6.8	15	255	17.4	---	---	---	17	252	5.2	---	---	---	16	275	20.1	---	---	---
5,000	17	290	6.7	18	278	13.0	14	277	27.5	---	---	---	---	---	---	13	272	26.0	22	266	8.5	10	263	19.1	---	---	---	13	255	10.0	---	---	---	13	272	22.9	---	---	---
6,000	14	299	10.9	15	272	14.0	---	---	---	---	---	---	---	---	---	10	269	30.5	18	268	11.0	---	---	---	---	---	---	12	259	11.1	---	---	---	10	269	24.5	---	---	---
8,000	12	298	11.3	13	279	16.8	---	---	---	---	---	---	---	---	---	---	---	---	12	308	10.5	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

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. Cloud, Minn. (318 m.)			St. Louis, Mo. (181 m.)			San Antonio, Tex. (240 m.)			San Diego, Calif. (13 m.)			Sault Ste. Marie, Mich (221 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	26	250	2.6	23	200	1.9	27	274	1.3	28	217	0.9	27	349	0.9	26	286	1.6	25	223	1.3	26	98	2.1	27	273	3.1	25	289	1.4	21	221	2.4	23	222	3.5	26	254	2.0
500	26	277	1.8	23	193	2.3	27	251	2.5	28	229	1.2	---	---	---	26	266	1.9	25	257	3.5	26	78	1.5	26	283	3.3	25	250	1.8	21	216	4.0	---	---	---	26	248	2.8
1,000	21	273	2.0	22	201	3.9	23	252	6.4	27	214	.9	27	342	1.1	25	263	4.4	21	242	7.1	25	147	1.4	24	276	1.3	22	258	2.9	19	220	4.2	23	237	5.6	25	259	5.7
1,500	17	281	3.6	19	239	7.2	20	258	9.7	27	212	2.2	27	305	4.6	22	268	7.6	18	248	9.8	20	222	3.7	22	315	.7	19	268	5.5	18	220	5.3	20	235	7.8	24	279	8.9
2,000	14	327	4.2	19	245	11.4	20	265	11.5	25	232	3.3	25	299	7.9	21	276	10.8	17	260	13.0	20	228	7.4	19	315	2.6	18	269	8.4	15	225	5.5	17	258	5.7	22	284	13.9
2,500	13	321	5.1	18	250	12.7	18	270	13.9	23	236	3.6	22	285	10.0	17	269	13.9	16	266	16.4	17	234	10.0	17	299	4.7	12	276	11.7	12	220	3.3	14	258	7.2	22	287	15.8
3,000	13	313	6.6	17	254	14.5	18	267	16.3	21	236	5.3	20	290	11.8	16	274	15.5	15	265	17.8	15	238	12.0	16	289	5.5	---	---	---	---	---	---	14	268	6.9	21	287	17.9
4,000	---	---	---	15	251	17.2	15	273	18.5	20	253	7.8	18	286	14.2	14	279	18.8	14	266	22.4	13	244	18.9	15	279	6.7	---	---	---	---	---	---	11	280	7.8	18	280	21.1
5,000	---	---	---	14	253	18.9	12	280	22.4	18	262	9.9	17	284	14.5	13	287	22.0	12	267	25.3	12	250	21.3	15	276	9.5	---	---	---	---	---	---	---	---	---	17	286	24.5
6,000	---	---	---	11	266	18.0	11	282	24.9	17	261	12.1	15	285	15.6	12	287	27.0	---	---	---	10	247	28.1	12	259	10.9	---	---	---	---	---	---	---	---	---	13	289	28.1
8,000	---	---	---	---	---	---	---	---	---	12	262	14.6	12	290	17.4	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

TABLE 3.—*Free-air resultant winds based on rawin observations made near 0300 G. C. T., during February 1949. 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. (358 m.)			Little Rock, Ark. (80 m.)			Medford, Oreg. (401 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	28	28	0.7	27	136	3.0	28	331	1.3	26	77	1.7	28	332	1.5	28	221	0.4	28	178	0.4	28	336	0.5	28	254	1.2	28	329	0.6	28	283	0.7	28	163	0.7	28	157	1.0
500	---	---	---	---	---	---	---	---	---	25	136	6.1	28	269	2.4	28	219	2.1	28	212	4.4	---	---	---	28	251	3.3	28	246	3.6	28	257	1.4	27	165	1.8	26	192	1.1
1,000	---	---	---	27	180	4.1	27	285	3.6	24	161	7.0	28	293	7.8	28	240	5.1	28	237	8.9	---	---	---	28	253	7.1	27	261	5.9	28	275	3.5	27	209	4.9	25	226	2.9
1,500	---	---	---	27	220	7.0	27	286	6.0	24	177	6.1	28	295	10.6	28	250	7.1	28	249	12.1	28	333	.6	28	256	9.0	25	274	7.2	28	285	5.3	26	223	7.8	25	237	4.7
2,000	28	286	3.1	27	244	9.5	27	292	8.2	25	192	4.1	27	294	13.6	28	255	8.3	28	258	13.9	28	219	1.9	28	261	11.2	25	270	8.9	28	286	8.2	26	236	9.7	27	248	7.4
2,500	28	263	6.0	27	253	10.9	28	288	9.6	25	202	4.7	25	287	14.1	28	255	10.2	28	263	14.8	28	227	4.7	28	265	13.4	24	273	10.5	28	284	9.8	23	250	12.1	26	263	9.0
3,000	28	260	9.3	27	252	13.4	28	281	11.1	25	213	5.7	25	288	16.9	25	255	11.4	25	264	15.1	28	243	7.0	27	261	16.2	24	276	12.9	28	286	11.2	24	249	15.0	25	268	10.2
4,000	28	260	13.4	26	259	14.6	28	280	13.5	26	235	10.5	24	285	19.2	24	255	14.7	22	267	17.6	28	256	10.2	26	260	19.3	23	269	16.5	28	280	14.9	22	249	18.1	22	276	10.8
5,000	27	261	15.2	21	251	17.7	27	283	15.8	26	240	14.0	21	286	19.1	22	258	19.6	22	262	21.8	27	261	13.3	23	268	23.2	23	272	21.0	28	277	18.7	22	251	19.3	21	284	13.3
6,000	26	261	17.4	18	253	19.4	27	283	18.3	24	237	17.3	19	288	22.9	21	263	23.3	20	271	24.3	26	261	14.8	21	268	24.7	21	278	25.9	27	276	20.7	17	249	21.2	17	306	12.6
8,000	19	262	22.4	15	256	23.7	23	276	21.0	24	241	23.7	11	286	25.7	14	277	24.0	13	258	32.4	23	260	19.8	15	272	32.6	14	277	34.9	22	268	25.6	13	243	29.7	10	334	10.1
10,000	13	257	22.2	---	---	---	18	265	23.4	19	246	26.4	---	---	---	11	275	27.5	---	---	---	13	268	19.0	12	278	40.4	---	---	---	16	262	24.6	---	---	---	---	---	---
12,000	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	11	270	25.5	---	---	---	---	---	---

Altitude (meters) m. s. l.	Miami, Fla. (12 m.)			Nantucket, Mass. (14 m.)			Nashville, Tenn. (180 m.)			New Orleans, La. (6 m.)			Oakland, Calif. (8 m.)			Oklahoma City, Okla. (392 m.)			Rapid City, S. Dak. (980 m.)			San Antonio, Tex. (242 m.)			San Juan, P. R. (28 m.)			St. Cloud, Minn. (318 m.)			Santa Maria, Calif. (72 m.)			Sault Ste. Marie, Mich. (221 m.)			Spokane, Wash. (726 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	28	100	2.1	25	316	2.5	28	287	0.6	28	110	1.2	28	252	1.5	28	99	0.7	27	203	1.5	28	78	2.3	28	85	6.8	28	293	0.9	28	294	1.1	27	317	0.9	26	202	2.7
500	28	121	4.9	25	279	5.5	28	202	2.9	28	158	3.7	28	255	2.4	28	173	1.2	---	---	---	28	99	3.7	27	79	9.5	27	260	2.0	28	320	3.9	27	252	2.5	---	---	---
1,000	28	117	4.2	25	294	7.8	28	227	6.0	28	212	3.7	28	260	2.7	27	220	4.4	27	292	1.5	28	150	3.9	27	81	9.5	27	273	4.2	28	334	3.3	25	243	6.8	26	223	5.1
1,500	28	95	2.3	25	293	9.8	27	255	7.2	28	229	5.3	27	282	3.6	26	240	7.7	27	288	7.1	28	202	5.9	26	82	8.6	27	272	6.3	28	335	3.4	22	255	7.8	24	240	7.6
2,000	28	101	1.7	23	288	14.0	26	261	10.1	28	235	8.1	27	298	4.4	23	252	8.9	27	291	9.2	28	231	7.7	26	78	8.1	28	264	8.6	28	322	4.9	22	260	9.6	22	244	7.3
2,500	28	134	1.8	22	284	15.2	25	267	12.4	27	243	10.4	27	295	6.2	25	250	11.5	26	293	11.4	28	238	9.9	26	80	7.7	28	270	10.1	28	313	6.6	21	266	12.3	21	255	6.8
3,000	28	205	2.0	21	283	17.4	25	268	16.8	27	243	12.5	27	302	8.1	25	257	13.2	23	291	11.2	28	245	11.9	26	77	7.0	28	271	11.8	28	311	8.6	21	266	14.9	21	269	8.0
4,000	27	238	4.5	20	287	19.6	23	266	20.3	23	250	18.0	25	309	10.5	24	256	14.4	15	292	13.5	28	248	15.7	25	72	6.4	28	268	15.8	27	296	10.8	18	272	17.6	20	274	11.6
5,000	28	252	7.3	17	287	19.7	20	260	24.2	23	250	23.7	24	307	11.5	23	254	16.3	16	286	16.8	27	248	19.3	25	60	6.8	28	267	17.7	27	293	12.4	14	277	19.0	20	284	15.7
6,000	27	254	8.8	14	277	22.3	17	262	27.4	20	250	27.0	23	313	13.6	21	257	18.7	16	285	19.3	25	245	23.8	24	49	6.9	21	258	20.1	27	299	14.8	11	276	22.0	13	316	12.6
8,000	27	270	14.7	---	---	---	12	263	30.4	14	253	33.1	20	304	16.0	16	254	25.8	12	294	20.1	16	251	32.7	23	359	7.8	16	268	20.4	23	291	16.6	---	---	---	---	---	---
10,000	25	280	16.0	---	---	---	---	---	---	---	---	---	19	305	21.8	10	255	30.8	---	---	---	---	---	---	23	307	15.9	12	264	23.4	18	289	20.0	---	---	---	---	---	---
12,000	21	279	22.9	---	---	---	---	---	---	---	---	---	16	303	24.2	---	---	---	---	---	---	---	---	---	23	306	21.3	---	---	---	13	291	18.0	---	---	---	---	---	---
14,000	13	275	19.2	---	---	---	---	---	---	---	---	---	10	293	20.0	---	---	---	---	---	---	---	---	---	19	309	14.1	---	---	---	11	272	17.1	---	---	---	---	---	---
16,000	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	12	350	8.4	---	---	---	---	---	---	---	---	---	---	---	---

Altitude (meters) m. s. l.	Tatoosh Island, Wash. (33 m.)		
Surface	24	131	2.0
500	23	201	3.1
1,000	22	227	4.7
1,500	21	232	4.5
2,000	21	242	5.5
2,500	21	255	6.2
3,000	20	247	7.2
4,000	20	263	9.0
5,000	20	282	13.5
6,000	15	281	4.2
8,000	15	282	9.8
10,000	12	297	14.7
12,000	10	296	13.1

NOTE.—Resultants prepared from rawins at high altitudes are biased toward lower wind speeds. Values appearing in this table should therefore be used with caution when the number of observations missing is greater than three. See note following table 3 in the June 1948 issue of the MONTHLY WEATHER REVIEW.