METEOROLOGICAL AND CLIMATOLOGICAL DATA FOR JANUARY 1946

CHANGE IN SUMMARIZATION OF RADIOSONDE DATA

Effective January 1, 1946, all tabulations of radiosonde data are based on constant pressures rather than on standard heights as heretofore. Geometric height has been replaced by dynamic height (geopotential); dynamic height in units of 0.98 gdm. is numerically equal to geometric height in meters, if the acceleration of gravity is 980 cm^2/sec^2.

In Table 1 mean monthly values are given, insofar as they are available, for standard pressure surfaces. Where the standard pressures are greater than the station pressures, the values of the dynamic height, on which the means are based, are calculated by extrapolation. Values of temperatures and relative humidity for these standard pressures are not recorded. At some stations, standard pressures will be greater than the station pressures on some days and less on others, and hence the values of temperature and relative humidity will be recorded only part of the time. Monthly mean values of temperature and relative humidity are not computed for a standard pressure if the data are missing for more than 3 days due to fluctuation of the constant pressure surface, above and below ground. The high correlation of temperature and relative humidity with pressure would otherwise result in biased means.

In the accompanying Charts, VIII, IX, X, and XI, contour lines show the dynamic heights of the four constant pressure surfaces of 850, 700, 500, and 300 millibars. The resultant wind arrows shown on the charts are, however, based on standard height levels of 1,500, 3,000, 5,000, and 10,000 meters respectively, as heretofore.

AEROLOGICAL OBSERVATIONS

TABLE 1.—*Mean dynamic height (geopotential) in units of 0.98 dynamic meter, temperature in degrees centigrade, and relative humidity in percent, for standard pressures, as obtained by radiosondes during January 1946*

STATIONS AND MEAN SURFACE PRESSURES

Standard pressure surface (mb.)	Albany, N. Y. (1,006.7 mb.)				Albuquerque, N. Mex. (838.4 mb.)				Apalachicola, Fla. (1,020.4 mb.)				Atlanta, Ga. (986.0 mb.)				Big Spring, Tex. (928.9 mb.)				Bismarck, N. Dak. (954.6 mb.)				Boise, Idaho (922.1 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	31	93	−4.3	73	30	1,620	0.8	57	31	5	12.2	84	31	300	6.0	75	31	774	4.1	73	31	505	−11.0	84	31	868	−2.1	83
1,000	31	144	(*)	----	30	176	(*)	----	31	174	12.9	77	31	183	(*)	----	31	164	(*)	----	31	143	(*)	----	31	215	(*)	----
950	31	548	−5.8	74	30	600	(*)	----	31	606	11.8	69	31	608	6.1	69	31	589	(*)	----	31	543	(*)	----	31	631	(*)	----
900	31	970	−7.3	76	30	1,043	(*)	----	31	1,056	10.0	67	31	1,047	5.6	66	31	1,031	5.0	63	31	961	−6.3	73	31	1,061	−0.2	74
850	31	1,414	−8.7	72	30	1,508	(*)	----	31	1,530	8.7	52	31	1,514	5.0	61	31	1,497	4.1	54	31	1,406	−6.0	60	31	1,517	−2.2	68
800	31	1,883	−9.5	67	30	1,997	0.4	52	31	2,030	7.0	44	31	2,008	3.8	58	31	1,989	3.0	49	31	1,882	−7.2	57	31	1,997	−4.0	64
750	31	2,385	−10.4	59	30	2,514	−2.4	53	31	2,563	5.1	37	31	2,536	1.4	57	31	2,515	0.6	50	31	2,388	−0.7	56	31	2,511	−6.3	60
700	31	2,910	−12.1	60	30	3,057	−5.3	52	31	3,117	2.1	36	30	3,082	−1.3	50	31	3,061	−2.3	51	31	2,913	−12.4	53	31	3,042	−8.6	52
650	31	3,479	−14.3	58	30	3,637	−7.9	48	30	3,715	−0.7	----	29	3,672	−4.1	----	31	3,650	−5.5	43	31	3,480	−15.5	53	31	3,620	−11.7	52
600	31	4,077	−17.4	57	30	4,254	−11.7	51	30	4,349	−4.1	----	29	4,296	−7.7	----	31	4,270	−9.5	41	31	4,076	−18.9	52	31	4,223	−15.3	51
550	30	4,725	−21.2	----	30	4,914	−15.9	50	30	5,029	−8.4	----	29	4,968	−11.6	----	31	4,936	−13.8	42	31	4,719	−21.1	----	31	4,878	−19.3	55
500	30	5,422	−25.8	----	30	5,628	−20.8	----	30	5,761	−13.3	----	29	5,692	−16.5	----	31	5,655	−18.6	----	31	5,412	−27.4	----	30	5,577	−24.2	----
450	30	6,185	−30.6	----	30	6,401	−26.0	----	30	6,562	−18.6	----	29	6,483	−21.9	----	30	6,440	−23.9	----	31	6,167	−32.9	----	29	6,351	−29.3	----
400	30	7,006	−36.1	----	30	7,241	−32.4	----	30	7,423	−24.5	----	29	7,332	−28.2	----	29	7,281	−30.3	----	31	6,982	−36.1	----	29	7,179	−35.5	----
350	30	7,920	−42.4	----	30	8,169	−39.4	----	29	8,385	−31.5	----	27	8,264	−35.1	----	27	8,231	−36.9	----	31	7,885	−45.5	----	28	8,091	−42.3	----
300	30	8,947	−48.2	----	30	9,208	−46.3	----	29	9,457	−40.1	----	25	9,323	−42.2	----	27	9,284	−43.2	----	30	8,901	−52.1	----	27	9,130	−49.1	----
250	27	10,151	−52.6	----	30	10,403	−51.8	----	29	10,675	−49.4	----	25	10,535	−49.7	----	25	10,489	−49.5	----	25	10,087	−57.1	----	23	10,319	−55.1	----
200	17	11,625	−55.4	----	28	11,835	−53.7	----	29	12,106	−58.2	----	22	11,973	−55.8	----	24	11,932	−52.5	----	14	11,501	−53.0	----	19	11,739	−57.2	----
175	13	12,497	−56.1	----	24	12,670	−54.7	----	25	12,936	−60.8	----	19	12,814	−57.1	----	21	12,802	−54.9	----	9	12,344	−51.7	----	13	12,555	−54.0	----
150	12	13,473	−56.5	----	21	13,644	−56.5	----	17	13,895	−63.0	----	13	13,786	−57.9	----	17	13,777	−57.6	----	8	13,337	−50.8	----	8	13,516	−54.5	----
125	----	------	------	----	15	14,794	−59.8	----	11	14,995	−66.2	----	8	14,913	−59.9	----	7	14,923	−60.6	----	6	14,502	−51.4	----	6	14,699	−56.5	----
100	----	------	------	----	----	------	------	----	----	------	------	----	----	------	------	----	5	16,284	−63.5	----	----	------	------	----	----	------	------	----

Standard pressure surface (mb.)	Brownsville, Tex. (1,017.1 mb.)				Buffalo, N. Y. (990.4 mb.)				Burrwood, La. (1,020.0 mb.)				Caribou, Maine (990.7 mb.)				Charleston, S. C. (1,020.7 mb.)				Ciudad Victoria, Mexico (976.8 mb.)				Clovis, N. Mex. (868.3 mb.)			
Surface	31	6	13.6	86	31	221	−2.6	75	30	2	12.8	87	31	191	−12.6	90	30	10	8.4	83	28	335	16.8	63	31	1,306	0.6	65
1,000	31	148	14.0	82	31	143	(*)	----	30	168	13.4	82	31	121	(*)	----	30	184	9.4	78	28	131	(*)	----	31	150	(*)	----
950	31	586	13.0	77	31	555	−4.1	75	30	604	11.2	82	31	512	−12.9	87	30	610	8.6	70	28	573	16.3	63	31	576	(*)	----
900	31	1,034	11.8	68	31	974	−5.9	76	30	1,051	10.8	70	31	921	−13.7	83	30	1,056	7.6	66	28	1,029	14.3	65	31	1,017	(*)	----
850	31	1,512	11.0	63	31	1,420	−7.9	74	30	1,524	9.7	59	31	1,355	−13.6	79	30	1,526	6.0	58	28	1,510	12.0	66	31	1,477	2.6	55
800	31	2,018	10.0	52	31	1,891	−8.8	63	30	2,030	8.1	55	31	1,815	−14.8	76	30	2,021	4.8	52	28	2,018	11.1	61	31	1,967	1.6	46
750	31	2,558	8.8	34	31	2,396	−10.4	54	30	2,565	5.5	47	31	2,310	−16.2	70	30	2,550	3.0	41	28	2,562	9.6	49	31	2,490	−1.0	42
700	31	3,120	5.4	32	31	2,919	−12.3	48	30	3,123	3.1	42	31	2,820	−18.0	67	30	3,102	0.2	41	28	3,126	7.1	37	31	3,033	−3.2	41
650	31	3,722	1.8	----	31	3,488	−15.0	49	29	3,726	0.0	38	31	3,384	−20.0	68	29	3,691	−3.2	41	27	3,732	3.2	33	31	3,620	−6.5	39
600	31	4,363	−2.4	----	31	4,083	−18.2	53	28	4,358	−3.8	----	31	3,961	−22.9	----	28	4,318	−6.5	38	26	4,375	−0.8	----	31	4,237	−10.4	40
550	29	5,050	−7.1	----	30	4,737	−21.2	----	28	5,041	−8.0	----	31	4,596	−26.1	----	28	4,990	−10.8	----	25	5,065	−5.3	----	31	4,903	−14.9	42
500	29	5,786	−12.1	----	30	5,432	−25.5	----	28	5,774	−12.6	----	31	5,279	−30.1	----	27	5,721	−15.5	----	24	5,806	−10.6	----	31	5,615	−20.1	----
450	29	6,590	−18.2	----	29	6,199	−30.2	----	28	6,579	−18.4	----	31	6,034	−35.2	----	26	6,514	−20.9	----	24	6,611	−16.0	----	31	6,398	−25.4	----
400	28	7,455	−24.3	----	29	7,020	−35.7	----	27	7,439	−24.8	----	30	6,829	−40.2	----	26	7,369	−26.6	----	23	7,489	−22.4	----	31	7,232	−31.7	----
350	28	8,414	−31.2	----	26	7,945	−42.1	----	26	8,398	−32.0	----	30	7,727	−46.2	----	26	8,320	−33.1	----	23	8,455	−29.6	----	31	8,162	−38.7	----
300	28	9,505	−39.0	----	24	8,958	−48.8	----	26	9,470	−39.8	----	29	8,734	−51.2	----	26	9,387	−40.5	----	23	9,536	−37.6	----	31	9,205	−45.4	----
250	27	10,715	−48.1	----	22	10,147	−53.3	----	26	10,691	−48.9	----	27	9,911	−53.8	----	26	10,606	−48.7	----	22	10,770	−46.8	----	31	10,402	−51.3	----
200	25	12,157	−56.7	----	13	11,620	−53.2	----	24	12,129	−57.5	----	19	11,371	−52.8	----	22	12,064	−56.8	----	22	12,213	−56.2	----	31	11,839	−54.0	----
175	25	12,997	−59.3	----	9	12,436	−52.9	----	23	12,964	−60.3	----	11	12,232	−49.9	----	22	12,905	−58.8	----	21	13,056	−60.4	----	30	12,687	−54.8	----
150	22	13,962	−62.7	----	----	------	------	----	13	13,916	−63.5	----	10	13,244	−51.2	----	17	13,875	−60.0	----	20	14,207	−63.9	----	26	13,659	−56.5	----
125	15	15,076	−68.1	----	----	------	------	----	10	15,024	−67.4	----	7	14,486	−53.4	----	11	15,002	−62.7	----	15	15,109	−67.7	----	17	14,809	−59.2	----
100	5	16,399	−73.7	----	----	------	------	----	5	16,367	−71.8	----	----	------	------	----	----	------	------	----	6	16,437	−70.5	----	10	16,208	−63.4	----

See footnote at end of table.

TABLE 1.—*Mean dynamic height (geopotential) in units of 0.98 dynamic meter, temperature in degrees centigrade, and relative humidity in percent, for standard pressures, as obtained by radiosondes during January 1946*—Continued

Standard pressure surface (mb.)	Denver, Colo. (836.1 mb.)				Dodge City, Kans. (925.5 mb.)				El Paso, Tex. (883.3 mb.)				Ely, Nev. (810.8 mb.)				Fort Worth, Tex. (994.2 mb.)				Glasgow, Mont. (937.9 mb.)				Grand Junction, Colo. (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	1,616	−11.8	56	31	787	0.0	70	31	1,195	5.8	55	31	1,908	−6.4	77	31	211	7.3	69	31	648	−8.9	85	30	1,414	−2.9	68
1,000	31	150	(*)	----	31	156	(*)	----	31	163	(*)	----	31	227	(*)	----	31	157	(*)	----	31	144	(*)	----	30	208	(*)	----
950	31	577	(*)	----	31	576	(*)	----	31	597	(*)	----	31	650	(*)	----	31	590	6.2	63	31	549	(*)	----	30	633	(*)	----
900	31	1,019	(*)	----	31	1,011	2.1	60	31	1,042	(*)	----	31	1,083	(*)	----	31	1,026	5.7	57	31	970	−4.6	78	30	1,068	(*)	----
850	31	1,482	(*)	----	31	1,472	1.8	46	31	1,509	4.8	53	31	1,534	(*)	----	31	1,493	4.8	57	31	1,419	−5.0	68	30	1,518	−2.9	65
800	31	1,970	1.2	39	31	1,959	−0.3	41	31	2,001	2.5	52	31	2,014	−3.1	66	31	1,986	3.0	57	31	1,894	−7.0	64	30	1,999	−3.5	53
750	31	2,489	−2.2	42	31	2,477	−2.7	39	31	2,526	0.1	50	31	2,531	−3.4	50	31	2,514	1.0	57	31	2,399	−9.5	64	30	2,515	−5.2	54
700	31	3,030	−6.2	46	31	3,018	−5.6	40	31	3,071	−2.9	50	31	3,068	−5.6	45	31	3,059	−1.7	49	31	2,924	−12.7	69	30	3,047	−7.6	53
650	31	3,607	−10.2	49	31	3,598	−9.2	42	31	3,659	−6.4	47	31	3,649	−9.0	46	31	3,650	−4.9	45	31	3,493	−15.7	69	30	3,622	−10.6	52
600	31	4,218	−14.2	50	31	4,210	−13.0	42	31	4,276	−9.8	43	31	4,262	−12.7	48	30	4,274	−8.6	42	31	4,086	−18.8	67	30	4,232	−14.2	54
550	31	4,874	−18.4	51	30	4,871	−17.6	42	31	4,937	−14.3	43	31	4,922	−16.5	44	30	4,946	−13.1	39	31	4,731	−22.8	----	30	4,888	−18.6	53
500	31	5,576	−23.6	----	29	5,572	−22.7	----	31	5,658	−19.3	42	31	5,630	−21.7	----	30	5,662	−18.0	----	31	5,421	−27.0	----	30	5,590	−23.5	----
450	29	6,347	−29.1	----	29	6,344	−28.0	----	31	6,440	−24.5	----	31	6,404	−27.1	----	30	6,448	−23.6	----	31	6,179	−32.3	----	30	6,358	−29.0	----
400	28	7,174	−35.3	----	29	7,174	−33.7	----	31	7,282	−30.4	----	30	7,230	−33.0	----	30	7,292	−29.8	----	31	6,994	−38.2	----	30	7,184	−35.1	----
350	27	8,097	−42.0	----	29	8,097	−40.2	----	31	8,218	−37.3	----	30	8,158	−40.0	----	30	8,230	−36.5	----	29	7,901	−44.8	----	30	8,102	−41.9	----
300	24	9,125	−49.1	----	28	9,136	−47.2	----	30	9,265	−44.9	----	28	9,189	−47.6	----	29	9,282	−43.3	----	27	8,913	−51.4	----	30	9,128	−49.4	----
250	19	10,296	−53.9	----	27	10,334	−52.3	----	30	10,465	−51.8	----	27	10,374	−55.3	----	25	10,487	−50.0	----	22	10,072	−57.1	----	26	10,294	−55.4	----
200	14	11,700	−53.0	----	22	11,764	−54.1	----	26	11,900	−53.9	----	16	11,763	−56.8	----	21	11,920	−54.7	----	16	11,474	−54.7	----	19	11,690	−55.5	----
175	11	12,550	−51.2	----	19	12,616	−54.4	----	25	12,755	−55.5	----	11	12,571	−52.3	----	18	12,754	−56.5	----	12	12,312	−51.5	----	8	12,484	−52.7	----
150	7	13,549	−53.9	----	14	13,599	−55.3	----	23	13,745	−59.2	----	7	13,542	−53.5	----	15	13,716	−59.4	----	7	13,336	−52.7	----	7	13,488	−54.4	----
125	----	----	----	----	7	14,746	−56.3	----	19	14,858	−62.8	----	----	----	----	----	13	14,836	−61.8	----	----	----	----	----	----	----	----	----
100	----	----	----	----	----	----	----	----	7	16,217	−65.8	----	----	----	----	----	8	16,188	−65.2	----	----	----	----	----	----	----	----	----

Standard pressure surface (mb.)	Great Falls, Mont. (884.6 mb.)				Green Bay, Wis. (994.1 mb.)				Greensboro, N. C. (988.6 mb.)				Hatteras, N. C. (1,021.7 mb.)				Havana, Cuba [1] (---- mb.)				Huntington, W. Va. (999.9 mb.)				International Falls, Minn. (972.8 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	30	1,128	−0.5	56	31	182	−6.9	77	31	273	3.4	79	30	3	7.9	84	----	----	----	----	31	172	1.8	75	31	343	−13.9	88
1,000	30	134	(*)	----	31	134	(*)	----	31	180	(*)	----	30	180	9.0	77	----	----	----	----	31	170	(*)	----	31	131	(*)	----
950	30	554	(*)	----	31	539	−7.7	77	31	597	3.2	69	30	608	6.9	69	----	----	----	----	31	586	1.1	73	31	524	−15.0	90
900	30	990	(*)	----	31	954	−8.5	74	31	1,034	2.3	65	30	1,048	5.5	63	----	----	----	----	31	1,017	−0.9	73	31	931	−14.0	89
850	30	1,447	−0.7	50	30	1,397	−8.4	63	31	1,496	1.6	58	30	1,514	3.5	59	----	----	----	----	31	1,472	−2.3	69	31	1,367	−12.1	77
800	30	1,929	−3.2	52	30	1,866	−9.3	54	31	1,983	0.1	59	30	2,005	2.1	50	----	----	----	----	31	1,952	−3.3	65	31	1,831	−12.3	68
750	30	2,439	−6.5	55	30	2,368	−10.6	50	31	2,505	−1.4	57	30	2,528	0.5	44	----	----	----	----	31	2,467	−4.6	62	31	2,328	−13.8	62
700	30	2,973	−9.5	56	30	2,892	−12.7	48	30	3,046	−3.7	51	30	3,076	−1.9	43	----	----	----	----	31	3,003	−6.6	53	31	2,844	−15.7	57
650	29	3,545	−13.1	60	29	3,462	−15.1	48	30	3,636	−6.8	48	30	3,664	−4.8	39	----	----	----	----	29	3,578	−9.9	50	31	3,406	−18.4	57
600	29	4,149	−17.0	58	27	4,065	−18.4	48	29	4,248	−10.5	48	30	4,287	−8.5	39	----	----	----	----	29	4,187	−13.1	52	30	3,987	−21.8	----
550	29	4,795	−21.6	----	27	4,712	−22.2	----	28	4,909	−15.2	49	30	4,957	−12.7	41	----	----	----	----	29	4,847	−17.0	----	30	4,625	−26.0	----
500	29	5,491	−26.5	----	27	5,403	−26.7	----	28	5,622	−19.7	50	30	5,678	−17.7	42	----	----	----	----	29	5,554	−21.6	----	30	5,305	−30.4	----
450	29	6,250	−31.7	----	27	6,164	−31.6	----	28	6,403	−25.0	----	30	6,466	−22.3	----	----	----	----	----	29	6,328	−26.8	----	30	6,056	−35.0	----
400	29	7,064	−37.8	----	27	6,980	−37.3	----	28	7,242	−31.2	----	30	7,315	−28.4	----	----	----	----	----	28	7,161	−32.9	----	30	6,841	−40.9	----
350	29	7,975	−44.3	----	27	7,888	−44.0	----	28	8,174	−37.8	----	30	8,258	−35.5	----	----	----	----	----	25	8,096	−39.1	----	29	7,743	−47.9	----
300	27	8,992	−51.3	----	26	8,900	−50.5	----	28	9,221	−44.7	----	30	9,312	−43.3	----	----	----	----	----	23	9,136	−46.3	----	26	8,743	−53.8	----
250	23	10,164	−58.4	----	25	10,073	−53.9	----	25	10,410	−51.3	----	28	10,520	−50.8	----	----	----	----	----	22	10,337	−52.3	----	22	9,920	−55.4	----
200	18	11,558	−54.1	----	23	11,500	−52.6	----	21	11,828	−55.8	----	22	11,956	−56.1	----	----	----	----	----	18	11,768	−56.1	----	18	11,379	−51.5	----
175	12	12,398	−51.1	----	23	12,362	−52.5	----	16	12,690	−57.2	----	20	12,786	−58.1	----	----	----	----	----	16	12,625	−56.9	----	15	12,252	−50.5	----
150	8	13,370	−50.6	----	19	13,353	−53.2	----	8	13,605	−57.7	----	10	13,698	−59.9	----	----	----	----	----	11	13,609	−57.6	----	11	13,253	−51.2	----
125	----	----	----	----	13	14,520	−55.1	----	----	----	----	----	----	----	----	----	----	----	----	----	8	14,733	−58.8	----	8	14,471	−53.0	----
100	----	----	----	----	6	15,936	−54.1	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	5	15,974	−54.9	----

Standard pressure surface (mb.)	Joliet, Ill. (996.7 mb.)				Lake Charles, La. (1,019.3 mb.)				Lander, Wyo. (835.0 mb.)				Las Vegas, Nev. (953.4 mb.)				Little Rock, Ark. (1,010.5 mb.)				Louisville, Ky (1,000.5 mb.)				Mazatlan, Mexico (1,006.7 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	178	−3.5	81	30	5	9.8	86	31	1,632	−5.5	73	31	574	6.8	39	31	79	4.9	78	31	165	1.0	76	25	79	19.7	75
1,000	31	150	(*)	----	30	163	10.3	77	31	185	(*)	----	31	176	(*)	----	31	177	(*)	----	31	168	(*)	----	25	137	19.0	69
950	31	557	−4.6	79	30	594	8.6	73	31	602	(*)	----	31	606	(*)	----	31	587	4.1	66	31	580	0.4	74	25	584	19.7	48
900	31	981	−4.6	65	30	1,037	8.5	65	31	1,033	(*)	----	31	1,051	8.3	29	31	1,020	3.1	61	31	1,013	−0.8	63	25	1,043	17.4	45
850	31	1,432	−4.6	58	30	1,510	8.1	57	31	1,490	(*)	----	31	1,520	5.5	30	31	1,483	2.4	57	31	1,469	−1.3	56	25	1,525	14.5	39
800	31	1,908	−6.0	55	30	2,009	6.6	52	31	1,971	−1.7	53	31	2,013	2.6	32	31	1,972	1.1	54	31	1,951	−2.3	49	25	2,037	11.8	----
750	31	2,417	−7.6	53	29	2,547	5.0	44	31	2,482	−4.5	48	31	2,535	0.2	31	31	2,496	−0.1	49	31	2,461	−3.8	44	25	2,579	8.7	----
700	31	2,947	−9.9	49	29	3,099	2.3	40	31	3,022	−7.9	51	31	3,082	−2.4	----	31	3,038	−2.8	50	31	3,004	−6.5	41	25	3,140	5.2	----
650	31	3,520	−12.7	51	28	3,698	−1.1	34	31	3,593	−11.6	52	31	3,668	−6.3	----	31	3,628	−5.5	47	31	3,581	−9.1	41	24	3,741	1.1	----
600	31	4,123	−16.1	51	27	4,327	−4.7	----	31	4,202	−15.6	52	31	4,287	−10.3	----	31	4,247	−8.9	41	31	4,196	−12.4	45	24	4,380	−2.7	----
550	29	4,767	−20.0	50	27	5,012	−8.9	----	31	4,852	−20.1	54	31	4,954	−14.8	----	30	4,918	−13.4	45	31	4,855	−16.6	48	24	5,064	−7.0	----
500	28	5,465	−24.4	----	27	5,738	−13.8	----	31	5,552	−24.9	----	30	5,666	−19.8	----	29	5,630	−18.4	47	31	5,567	−20.8	----	23	5,802	−12.1	----
450	28	6,229	−29.4	----	27	6,539	−19.3	----	31	6,314	−30.5	----	30	6,444	−25.3	----	29	6,416	−23.6	----	31	6,340	−25.8	----	23	6,610	−17.9	----
400	27	7,060	−34.9	----	27	7,397	−26.0	----	31	7,136	−36.5	----	30	7,284	−31.8	----	29	7,260	−29.8	----	31	7,182	−31.6	----	23	7,469	−24.0	----
350	26	7,979	−41.1	----	27	8,352	−32.3	----	30	8,060	−42.7	----	29	8,213	−38.6	----	28	8,193	−36.6	----	30	8,111	−38.9	----	22	8,427	−31.3	----
300	24	9,012	−47.8	----	27	9,422	−40.0	----	30	9,082	−50.4	----	29	9,254	−46.2	----	28	9,244	−43.7	----	26	9,150	−46.2	----	21	9,499	−39.1	----
250	21	10,211	−54.0	----	27	10,644	−48.2	----	28	10,253	−56.7	----	28	10,449	−53.4	----	27	10,455	−50.8	----	21	10,362	−53.4	----	20	10,730	−47.4	----
200	17	11,636	−56.4	----	27	12,089	−55.4	----	20	11,657	−55.6	----	25	11,865	−55.7	----	26	11,888	−55.4	----	12	11,779	−54.1	----	16	12,180	−55.8	----
175	15	12,496	−55.9	----	23	12,937	−57.5	----	14	12,489	−53.7	----	23	12,718	−55.6	----	22	12,734	−55.6	----	9	12,641	−54.0	----	14	13,020	−59.6	----
150	11	13,451	−55.8	----	19	13,899	−60.8	----	8	13,488	−52.4	----	18	13,706	−56.6	----	18	13,714	−57.8	----	6	13,644	−56.2	----	14	13,975	−63.3	----
125	----	----	----	----	12	15,026	−64.2	----	----	----	----	----	10	14,846	−58.8	----	12	14,866	−62.0	----	----	----	----	----	7	15,061	−67.9	----

See footnote at end of table.

TABLE 1.—*Mean dynamic height (geopotential) in units of 0.98 dynamic meter, temperature in degrees centigrade, and relative humidity in percent, for standard pressures, as obtained by radiosondes during January 1946*—Continued

Standard pressure surface (mb.)	Medford, Oreg. (974.7 mb.)				Merida, Mexico (1,012.7 mb.)				Miami, Fla. (1,020.5 mb.)				Nashville, Tenn. (999.2 mb.)				North Platte, Nebr. (917.3 mb.)				Oakland, Calif. (1,023.6 mb.)				Ogden, Utah (868.5 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	409	3.6	84	29	27	24.8	72	31	4	18.7	85	30	180	3.5	76	31	849	−1.8	73	24	2	9.2	69	31	1,355	−3.5	76
1,000	31	200	(*)	----	29	137	22.8	73	31	179	19.0	80	30	171	(*)	----	31	150	(*)	----	24	195	9.5	61	31	222	(*)	----
950	31	625	3.9	80	29	585	20.0	74	31	621	163.	78	30	592	2.0	72	31	569	(*)	----	24	628	8.0	56	31	641	(*)	----
900	31	1,056	3.1	71	29	1,049	17.2	76	31	1,077	1.63	72	30	1,024	1.2	61	31	1,000	0.2	64	24	1,064	7.0	42	31	1,073	(*)	----
850	31	1,518	1.4	64	29	1,535	14.9	71	31	1,557	12.3	56	30	1,483	0.6	48	31	1,459	0.2	52	24	1,533	6.0	----	31	1,525	−2.3	69
800	31	2,004	−1.0	61	29	2,047	12.4	63	31	2,064	10.1	46	30	1,969	−0.1	47	31	1,943	−2.3	50	24	2,028	4.1	----	31	2,005	−4.1	62
750	31	2,522	−3.4	56	28	2,594	10.4	54	31	2,603	8.2	32	30	2,491	−1.9	42	31	2,457	−5.2	49	24	2,559	1.9	----	31	2,515	−6.7	59
700	31	3,059	−6.0	50	28	3,160	7.8	40	31	3,165	6.1	----	30	3,031	−4.1	40	31	2,991	−8.3	48	24	3,103	−1.1	----	31	3,049	−9.0	57
650	31	3,642	−9.3	50	28	3,769	4.7	30	31	3,772	3.0	----	30	3,618	−7.2	42	31	3,567	−11.9	50	23	3,696	−5.2	----	31	3,621	−11.8	51
600	31	4,254	−12.6	51	28	4,416	1.3	----	31	4,413	−0.5	----	30	4,231	−10.6	42	31	4,171	−15.4	51	22	4,311	−9.7	----	31	4,228	−15.6	54
550	31	4,911	−16.7	54	27	5,110	−3.1	----	31	5,103	−4.8	----	30	4,899	−14.4	46	31	4,826	−19.6	54	22	4,981	−14.0	----	31	4,880	−19.7	54
500	31	5,619	−21.7	----	26	5,860	−8.3	----	30	5,847	−9.9	----	29	5,610	−19.2	----	31	5,523	−24.3	----	22	5,695	−19.2	----	31	5,580	−24.9	----
450	31	6,391	−27.1	----	26	6,678	−14.0	----	30	6,658	−15.5	----	29	6,392	−24.6	----	31	6,290	−29.5	----	22	6,473	−25.1	----	31	6,345	−30.3	----
400	31	7,225	−33.1	----	26	7,555	−20.6	----	30	7,530	−22.3	----	29	7,231	−30.8	----	30	7,116	−35.6	----	21	7,322	−31.0	----	31	7,166	−36.2	----
350	31	8,149	−40.4	----	26	8,528	−28.0	----	30	8,495	−30.0	----	28	8,167	−37.6	----	30	8,032	−42.0	----	21	8,255	−38.1	----	30	8,092	−42.1	----
300	31	9,181	−48.4	----	26	9,616	−36.7	----	30	9,574	−38.4	----	27	9,214	−45.0	----	30	9,059	−49.0	----	21	9,297	−46.5	----	27	9,113	−49.6	----
250	31	10,357	−56.1	----	24	10,852	−46.0	----	30	10,801	−48.0	----	24	10,408	−51.7	----	28	10,251	−54.0	----	20	10,484	−54.9	----	27	10,287	−56.4	----
200	21	11,754	−58.2	----	22	12,305	−56.0	----	29	12,239	−57.4	----	20	11,840	−55.2	----	19	11,672	−54.1	----	16	11,888	−59.3	----	23	11,704	−57.6	----
175	15	12,572	−55.9	----	21	13,147	−60.2	----	28	13,080	−60.7	----	13	12,666	−54.8	----	15	12,521	−52.9	----	12	12,731	−57.9	----	17	12,526	−54.3	----
150	10	13,576	−57.5	----	19	14,100	−64.1	----	27	14,034	−63.9	----	11	13,657	−58.2	----	7	13,514	−53.5	----	7	13,734	−60.4	----	16	13,513	−55.7	----
125	----	----	----	----	10	15,213	−68.8	----	15	15,152	−68.9	----	5	14,845	−61.7	----	5	14,694	−55.9	----	5	14,826	−60.2	----	13	14,642	−56.6	----
100	----	----	----	----	----	----	----	----	5	16,458	−75.2	----	----	----	----	----	----	----	----	----	----	----	----	----	9	16,061	−56.2	----

Standard pressure surface (mb.)	Oklahoma City, Okla. (972.4 mb.)				Omaha, Nebr. (981.5 mb.)				Phoenix, Ariz. (978.0 mb.)				Pittsburgh, Pa. (973.0 mb.)				Portland, Maine (1,014.8 mb.)				Rapid City, S. Dak. (901.2 mb.)				St. Louis, Mo. (998.9 mb.)			
Surface	31	391	3.0	78	31	308	−2.8	78	31	339	9.6	61	31	382	−0.6	73	31	20	−6.6	79	31	981	−3.4	68	29	171	0.3	78
1,000	31	161	(*)	----	31	159	(*)	----	31	151	(*)	----	31	161	(*)	----	31	133	−6.6	75	31	143	(*)	----	29	155	(*)	----
950	31	584	3.5	72	31	562	−3.5	79	31	587	12.6	44	31	580	−1.0	71	31	536	−6.7	73	31	562	(*)	----	29	579	−0.3	71
900	31	1,018	3.0	64	31	993	−2.3	66	31	1,033	9.7	43	31	1,002	−3.1	71	31	955	−7.9	71	31	992	−4.8	69	29	1,004	−0.5	50
850	31	1,480	2.3	55	31	1,447	−2.4	54	31	1,505	6.3	45	31	1,453	−4.5	65	31	1,399	−9.0	66	31	1,448	−0.5	51	29	1,461	−1.1	52
800	31	1,970	1.2	46	31	1,927	−3.7	47	31	1,999	3.3	43	31	1,929	−5.8	61	31	1,867	−9.8	58	31	1,930	−3.1	52	29	1,943	−2.7	50
750	31	2,492	−1.1	44	31	2,435	−5.8	47	31	2,526	0.1	40	31	2,440	−6.9	51	31	2,367	−10.8	57	31	2,440	−6.1	55	29	2,457	−4.6	50
700	31	3,034	−4.0	43	31	2,973	−8.6	51	31	3,068	−3.0	40	31	2,970	−9.0	51	31	2,893	−12.8	56	31	2,974	−9.3	57	29	2,994	−7.1	51
650	31	3,620	−7.3	41	31	3,543	−11.7	56	30	3,658	−6.4	40	31	3,547	−11.8	55	31	3,461	−14.6	53	31	3,549	−12.6	55	29	3,552	−9.6	48
600	31	4,236	−10.9	44	31	4,153	−15.3	57	30	4,273	−10.5	40	31	4,151	−14.8	55	30	4,059	−18.1	50	31	4,150	−16.4	58	29	4,183	−12.8	44
550	31	4,902	−15.3	44	31	4,807	−19.4	53	30	4,938	−15.3	42	30	4,802	−18.8	53	30	4,706	−21.7	50	31	4,803	−20.6	61	28	4,849	−16.5	44
500	30	5,618	−19.6	46	31	5,507	−23.8	----	30	5,649	−20.5	----	30	5,501	−23.2	----	30	5,400	−26.0	----	31	5,498	−25.3	----	28	5,558	−21.2	----
450	30	6,401	−25.0	----	31	6,268	−29.1	----	30	6,427	−26.3	----	29	6,268	−28.4	----	30	6,161	−31.1	----	31	6,260	−30.7	----	28	6,332	−26.3	----
400	28	7,233	−31.2	----	31	7,105	−35.3	----	30	7,262	−32.2	----	29	7,096	−33.9	----	30	6,980	−36.6	----	31	7,080	−36.6	----	28	7,170	−32.3	----
350	26	8,167	−38.0	----	31	8,018	−41.5	----	30	8,191	−38.6	----	28	8,009	−40.3	----	29	7,903	−42.2	----	31	7,992	−43.3	----	28	8,098	−38.9	----
300	26	9,213	−44.9	----	31	9,049	−47.9	----	30	9,234	−45.1	----	28	9,045	−46.8	----	28	8,919	−48.1	----	31	9,012	−51.0	----	27	9,147	−46.6	----
250	24	10,412	−51.5	----	28	10,245	−53.2	----	29	10,431	−51.2	----	26	10,223	−52.2	----	25	10,110	−53.2	----	26	10,204	−57.1	----	26	10,331	−58.8	----
200	19	11,859	−54.8	----	20	11,679	−54.5	----	23	11,870	−54.8	----	21	11,659	−53.4	----	19	11,551	−54.9	----	16	11,580	−55.3	----	23	11,748	−56.3	----
175	15	12,691	−55.3	----	16	12,531	−52.2	----	20	12,707	−55.4	----	16	12,500	−53.5	----	16	12,388	−53.7	----	12	12,424	−53.8	----	21	12,593	−55.1	----
150	15	13,668	−58.1	----	14	13,542	−53.0	----	15	13,686	−57.7	----	12	13,462	−53.1	----	11	13,391	−53.4	----	9	13,406	−53.3	----	16	13,567	−56.1	----
125	11	14,814	−60.7	----	10	14,701	−54.4	----	8	14,784	−58.1	----	5	14,620	−53.8	----	8	14,581	−55.7	----	----	----	----	----	12	14,720	−58.5	----
100	5	16,183	−62.2	----	6	16,083	−56.1	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

Standard pressure surface (mb.)	St. Paul, Minn. (989.4 mb.)				San Antonio, Tex. (991.2 mb.)				San Juan, P. R. (1,015.5 mb.)				Santa Maria, Calif. (1,012.8 mb.)				Saulte Ste. Marie, Mich. (989.8 mb.)				Spokane, Wash. (948.4 mb.)				Swan Island, W. I.[1] (---- mb.)			
Surface	31	225	−8.4	83	28	240	8.5	79	29	15	23.7	82	31	71	8.6	81	20	221	−7.4	86	31	598	0.1	87	----	----	----	----
1,000	31	140	(*)	----	28	165	(*)	----	29	149	22.8	82	31	177	10.2	75	20	139	(*)	----	31	170	(*)	----	----	----	----	----
950	31	541	−9.3	85	28	593	8.2	71	29	594	19.7	84	31	608	10.8	51	20	544	−9.1	90	31	585	(*)	----	----	----	----	----
900	31	957	−7.8	75	28	1,036	6.9	69	29	1,059	16.6	83	31	1,054	9.4	42	20	955	−10.2	90	31	1,017	−1.1	81	----	----	----	----
850	31	1,402	−7.2	62	28	1,506	7.1	63	29	1,545	13.5	77	31	1,526	7.3	37	20	1,395	−11.3	80	31	1,471	−3.1	76	----	----	----	----
800	31	1,874	−8.2	52	28	2,004	6.2	53	29	2,054	11.2	62	31	2,023	5.4	27	20	1,859	−12.3	71	31	1,949	−5.6	76	----	----	----	----
750	31	2,378	−10.0	50	28	2,538	4.5	41	28	2,593	9.3	38	31	2,551	2.8	----	20	2,358	−13.6	----	31	2,458	−7.9	71	----	----	----	----
700	31	2,903	−12.4	45	28	3,092	2.1	33	28	3,160	7.0	----	31	3,102	−0.4	----	20	2,874	−15.4	----	31	2,987	−10.4	65	----	----	----	----
650	31	3,469	−15.2	45	28	3,687	−1.3	35	28	3,766	4.6	----	31	3,690	−3.9	----	20	3,441	−17.6	----	31	3,558	−13.3	61	----	----	----	----
600	31	4,068	−17.9	44	28	4,319	−5.4	----	28	4,413	1.4	----	31	4,317	−8.0	----	20	4,028	−20.5	----	31	4,160	−17.1	61	----	----	----	----
550	31	4,718	−21.9	----	27	4,999	−9.6	----	28	5,106	−3.1	----	31	4,986	−12.5	----	19	4,662	−24.3	----	30	4,813	−21.1	----	----	----	----	----
500	30	5,406	−26.7	----	26	5,734	−14.3	----	27	5,855	−8.1	----	31	5,706	−17.8	----	19	5,349	−28.6	----	30	5,510	−25.7	----	----	----	----	----
450	30	6,168	−32.0	----	26	6,531	−19.5	----	27	6,676	−13.7	----	31	6,489	−23.5	----	19	6,106	−33.1	----	30	6,276	−31.0	----	----	----	----	----
400	30	6,983	−37.7	----	26	7,390	−25.5	----	27	7,550	−20.0	----	31	7,336	−30.0	----	17	6,904	−39.0	----	30	7,092	−37.1	----	----	----	----	----
350	30	7,891	−44.3	----	26	8,346	−32.3	----	26	8,526	−27.9	----	30	8,273	−37.3	----	15	7,836	−44.2	----	29	7,997	−44.2	----	----	----	----	----
300	29	8,910	−50.9	----	24	9,410	−39.8	----	26	9,613	−36.8	----	28	9,322	−45.6	----	15	8,854	−50.5	----	29	9,015	−51.1	----	----	----	----	----
250	24	10,089	−54.5	----	24	10,634	−47.7	----	24	10,852	−46.2	----	27	10,514	−53.7	----	13	10,035	−54.6	----	27	10,184	−56.7	----	----	----	----	----
200	18	11,539	−52.4	----	18	12,089	−55.2	----	21	12,301	−56.6	----	24	11,940	−58.0	----	11	11,473	−52.8	----	20	11,566	−56.6	----	----	----	----	----
175	11	12,409	−50.5	----	16	12,942	−58.0	----	19	13,138	−60.9	----	16	12,793	−58.4	----	8	12,325	−51.6	----	14	12,397	−53.7	----	----	----	----	----
150	9	13,418	−50.7	----	10	13,887	−59.2	----	13	14,080	−65.6	----	10	13,784	−60.1	----	5	13,404	−53.9	----	9	13,426	−54.3	----	----	----	----	----
125	----	----	----	----	----	----	----	----	5	15,164	−71.3	----	8	14,906	−62.2	----	----	----	----	----	5	14,619	−55.4	----	----	----	----	----

See footnotes at end of table.

TABLE 1.—*Mean dynamic height (geopotential) in units of 0.98 dynamic meter, temperature in degrees centigrade, and relative humidity in percent, for standard pressures, as obtained by radiosondes during January 1946*—Continued

Standard pressure surface (mb.)	Tacubaya, Mexico (774.3 mb.)				Tampa, Fla. (1,021.2 mb.)				Tatoosh Island, Wash. (1,013.8 mb.)				Toledo, Ohio (995.0 mb.)				Washington, D. C. (1,018.3 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
Surface	29	2,306	14.0	50	30	3	15.7	84	31	31	6.7	83	31	191	−2.3	78	31	25	2.3	67
1,000	29	81	(*)	----	30	181	15.9	78	31	143	(*)	----	31	150	(*)	----	31	171	1.6	66
950	29	535	(*)	----	30	616	14.3	74	31	560	3.2	81	31	557	−3.7	76	31	585	0.2	67
900	29	1,009	(*)	----	30	1,072	12.1	69	31	997	0.2	80	31	982	−4.9	72	31	1,016	−1.2	65
850	29	1,504	(*)	----	30	1,550	10.5	57	31	1,454	−2.2	78	31	1,431	−5.8	61	31	1,471	−1.7	59
800	29	2,029	(*)	----	30	2,054	9.1	43	31	1,933	−4.7	74	31	1,906	−6.9	56	31	1,953	−2.7	58
750	29	2,579	12.5	49	30	2,592	7.2	38	31	2,441	−7.0	67	31	2,412	−8.0	49	31	2,468	−4.3	53
700	29	3,148	8.6	51	30	3,150	4.2	33	31	2,974	−9.6	61	31	2,942	−10.1	46	31	3,005	−6.7	48
650	29	3,760	4.1	55	30	3,752	1.2	----	31	3,544	−12.9	60	31	3,515	−13.0	49	31	3,586	−9.4	46
600	29	4,403	−0.5	55	30	4,389	−2.6	----	31	4,149	−16.3	60	31	4,117	−16.1	49	31	4,197	−12.6	49
550	29	5,091	−4.4	44	30	5,072	−6.6	----	29	4,806	−19.7	63	30	4,768	−19.9	53	31	4,857	−16.8	51
500	29	5,838	−9.1	38	29	5,810	−11.6	----	28	5,505	−24.2	----	30	5,469	−24.2	----	30	5,562	−22.0	----
450	28	6,655	−14.5	40	29	6,616	−17.1	----	27	6,266	−29.3	----	30	6,237	−29.1	----	30	6,336	−26.9	----
400	28	7,530	−20.4	----	29	7,483	−23.5	----	27	7,096	−35.3	----	30	7,063	−34.9	----	30	7,172	−32.4	----
350	27	8,505	−27.8	----	26	8,444	−31.0	----	27	8,012	−41.9	----	28	7,987	−41.0	----	30	8,100	−39.0	----
300	24	9,594	−36.2	----	24	9,523	−38.6	----	26	9,040	−48.8	----	28	9,020	−47.7	----	30	9,141	−45.8	----
250	22	10,831	−46.2	----	23	10,753	−48.1	----	23	10,215	−55.2	----	28	10,207	−53.4	----	30	10,336	−52.3	----
200	15	12,281	−56.6	----	21	12,185	−58.2	----	21	11,637	−56.4	----	25	11,640	−54.4	----	26	11,772	−56.6	----
175	12	13,115	−61.9	----	17	13,033	−60.2	----	16	12,486	−54.6	----	19	12,506	−54.1	----	24	12,626	−56.7	----
150	6	14,064	−66.6	----	14	13,988	−63.4	----	15	13,476	−53.5	----	16	13,505	−56.0	----	21	13,601	−57.9	----
125	----	----	----	----	9	15,097	−67.7	----	10	14,619	−53.6	----	10	14,631	−56.8	----	13	14,722	−59.6	----
100	----	----	----	----	----	----	----	----	----	----	----	----	5	16,045	−58.1	----	----	----	----	----

[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," in this issue of the MONTHLY WEATHER REVIEW.

NOTE.—All observations scheduled between 0300 and 0500, G. C. T., except at 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," page 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 5 p. m., E. S. T. (2200 G. C. T.) during January 1946. 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. (1,630 m.)			Atlanta, Ga. (299 m.)			Billings, Mont. (1,095 m.)			Bismarck, N. Dak. (512 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 (150 m.)			Denver, Colo. (1,627 m.)			El Paso, Tex. (1,198 m.)		
	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity
Surface	28	286	1.5	30	284	0.8	24	262	2.4	31	250	5.4	30	297	3.3	31	38	1.1	26	132	1.5	28	229	4.6	29	219	2.1	28	282	0.9	25	237	1.6	31	276	1.5	29	283	1.2
500	----	----	----	----	----	----	24	267	2.2	----	----	----	----	----	----	----	----	----	26	144	2.1	28	231	7.5	29	217	5.3	28	230	2.9	25	227	3.6	----	----	----	----	----	----
1,000	28	266	2.4	----	----	----	24	258	3.5	----	----	----	30	296	8.0	31	58	0.9	22	183	2.1	25	245	12.2	27	260	7.8	27	253	5.7	23	241	6.0	----	----	----	----	----	----
1,500	27	281	3.9	----	----	----	23	270	6.7	31	263	8.6	26	296	10.6	31	276	2.2	21	241	4.2	16	270	10.5	21	270	13.1	24	253	8.6	21	263	9.8	----	----	----	29	275	2.7
2,000	25	272	5.7	30	288	1.3	22	266	10.5	30	275	12.3	23	294	11.9	29	277	4.8	18	255	5.8	11	270	12.3	20	267	15.9	19	260	11.4	18	277	13.6	31	275	3.1	29	290	2.9
2,500	23	267	9.7	30	291	3.0	19	268	12.7	28	286	13.5	22	295	12.8	25	276	7.0	15	257	9.3	----	----	----	16	276	18.8	18	268	13.0	18	277	14.9	30	293	4.0	25	284	4.0
3,000	20	262	12.6	28	300	5.0	17	267	14.1	27	290	13.2	21	294	15.3	23	279	8.1	15	250	11.0	----	----	----	11	279	19.8	15	268	15.2	13	283	15.6	29	296	5.0	21	281	8.3
4,000	17	269	15.6	22	289	12.0	----	----	----	21	292	14.8	19	286	17.3	19	290	9.6	15	252	14.2	----	----	----	11	275	25.2	14	272	20.0	----	----	----	26	306	9.2	19	271	12.3
5,000	16	269	18.8	18	277	14.6	----	----	----	17	301	17.6	17	288	17.4	19	298	11.8	15	255	17.0	----	----	----	----	----	----	11	264	21.5	----	----	----	25	301	11.2	12	272	12.4
6,000	15	260	22.0	16	280	15.5	----	----	----	14	306	19.0	12	287	18.6	16	294	14.6	15	248	20.6	----	----	----	----	----	----	11	266	25.6	----	----	----	22	308	10.5	----	----	----
8,000	----	----	----	10	269	18.4	----	----	----	----	----	----	----	----	----	12	302	16.6	10	254	28.8	----	----	----	----	----	----	----	----	----	----	----	----	14	271	14.3	----	----	----

Altitude (meters) m. s. l.	Ely, Nev. (1,910 m.)			Grand Junction, Colo. (1,413 m.)			Greensboro, N. C. (271 m.)			Havre, Mont. (767 m.)			Jacksonville, Fla. (16 m.)			Joliet, Ill. (178 m.)			Las Vegas, Nev. (573 m.)			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	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity
Surface	30	6	1.5	31	294	1.5	24	242	1.0	30	261	3.8	28	223	1.0	24	241	3.7	31	16	2.8	26	138	0.1	27	261	1.0	30	124	2.8	19	341	0.7	28	233	2.2	28	288	3.9
500	----	----	----	----	----	----	24	255	2.0	----	----	----	28	212	3.3	24	245	5.2	----	----	----	26	305	1.3	27	260	1.1	30	121	3.9	19	328	1.9	28	222	4.1	27	276	6.5
1,000	----	----	----	----	----	----	24	264	5.5	30	259	8.3	27	222	3.7	20	255	8.0	31	15	3.0	24	288	2.7	27	245	0.9	29	141	2.8	16	270	3.4	23	231	7.1	27	274	8.5
1,500	----	----	----	31	292	1.7	24	266	9.1	30	272	12.7	25	241	6.9	18	285	11.0	31	1	3.0	20	287	5.3	27	223	2.5	27	176	2.4	14	248	5.9	21	252	9.0	23	285	12.5
2,000	30	355	1.8	31	290	1.9	23	271	12.6	29	282	13.0	23	240	7.7	17	284	13.9	31	341	3.8	20	279	7.2	24	237	4.2	22	208	3.5	13	268	6.6	18	274	9.1	21	284	16.8
2,500	30	330	2.5	28	264	2.7	18	280	14.4	25	287	13.9	21	263	8.0	14	281	17.0	31	341	4.3	19	270	10.0	19	273	3.9	21	215	4.7	12	282	7.8	18	274	10.9	16	286	18.9
3,000	28	316	4.0	27	274	4.0	16	282	16.0	20	288	14.2	20	256	10.2	11	297	20.0	29	342	5.9	16	279	11.4	15	281	4.9	21	225	4.8	12	278	10.4	16	281	11.6	----	----	----
4,000	23	317	7.3	23	308	8.7	14	286	21.7	12	296	16.2	14	251	13.8	----	----	----	27	330	7.8	16	275	15.5	13	294	7.3	17	251	4.4	----	----	----	15	276	17.2	----	----	----
5,000	19	319	10.4	17	312	9.6	13	279	24.3	----	----	----	11	250	16.0	----	----	----	25	326	10.6	12	282	16.0	10	292	10.7	15	244	7.4	----	----	----	14	273	20.0	----	----	----
6,000	17	321	13.1	16	298	11.5	10	275	29.3	----	----	----	----	----	----	----	----	----	22	296	11.6	11	287	19.4	----	----	----	14	242	1.0	----	----	----	11	260	24.0	----	----	----
8,000	12	339	15.9	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	10	290	14.3	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

TABLE 2.—*Free-air resultant winds based on pilot balloon observations made near 5 p. m., E. S. T. (2200 G. C. T.), during January 1946. Directions given in degrees from north (N=360°, E=90°, S=190°, W=270°). Velocities in meters per second*—Continued

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. Paul, Minn. (225 m.)			San Antonio, Tex. (240 m.)			San Diego, Calif. (15 m.)			Sault Ste. Marie, Mich. (225 m.)			Seattle, Wash. (116 m.)			Spokane, Wash. (603 m.)			Washington, D. C (24 m.)		
	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Osbervations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity
Surface	31	331	1.2	24	283	1.8	29	299	1.6	31	71	0.5	31	331	3.7	28	253	2.5	23	252	2.7	27	262	0.4	30	265	3.0	15	230	1.8	29	201	3.9	29	234	2.6	27	277	1.8
500	30	352	3.2	24	282	2.2	29	280	2.2	31	48	0.6	---	---	---	28	246	4.3	23	263	4.3	27	324	0.7	30	323	2.1	15	237	3.3	29	210	7.5	---	---	---	27	256	4.4
1,000	30	358	2.3	24	277	2.0	25	268	6.2	31	16	0.7	31	330	3.7	25	263	7.4	21	279	7.3	24	229	1.0	27	29	2.6	---	---	---	24	216	8.3	29	218	5.0	26	268	5.9
1,500	30	336	4.1	24	288	4.1	21	279	10.3	30	347	1.1	31	311	7.6	22	280	10.5	21	290	10.3	18	248	5.5	26	19	4.1	---	---	---	15	226	6.8	20	236	7.3	26	272	8.8
2,000	30	318	4.9	23	301	5.6	21	286	11.8	29	8	1.5	30	298	8.9	22	275	13.3	20	288	13.7	17	263	6.6	25	19	5.2	---	---	---	14	242	7.3	16	264	7.8	21	286	11.6
2,500	30	313	6.0	23	281	7.4	20	286	12.6	29	349	2.4	29	299	11.3	22	275	15.4	18	290	15.9	14	274	9.2	24	8	6.6	---	---	---	13	271	7.6	15	271	9.0	19	280	15.7
3,000	30	317	7.9	23	268	9.7	19	286	13.2	28	348	4.0	27	299	12.2	22	277	15.8	16	288	17.2	14	271	11.2	23	355	7.2	---	---	---	12	272	8.7	14	281	11.0	17	277	17.7
4,000	29	309	10.5	19	273	14.2	19	291	18.2	22	313	7.8	24	292	13.6	20	280	19.9	15	288	20.0	13	268	13.4	18	341	10.3	---	---	---	---	---	---	10	294	14.8	16	278	22.8
5,000	25	313	11.7	17	272	19.5	18	296	20.4	20	309	11.6	18	290	12.8	16	292	21.5	12	289	20.9	12	270	18.1	16	330	11.6	---	---	---	---	---	---	---	---	---	12	274	26.3
6,000	23	312	14.5	16	271	21.7	16	294	21.9	16	302	12.0	18	293	14.2	14	297	24.0	10	293	23.8	---	---	---	14	321	12.4	---	---	---	---	---	---	---	---	---	11	272	28.9
8,000	11	305	14.8	---	---	---	10	289	20.1	11	283	16.7	---	---	---	12	300	30.0	---	---	---	---	---	---	10	306	17.6	---	---	---	---	---	---	---	---	---	---	---	---
10,000	12	315	16.6	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

TABLE 3.—*Maximum free-air wind velocities (m. p. s.) for different sections of the United States based on pilot balloon observations during January 1946*

Section	Surface to 2,500 meters (m. s. l.)					Above 2,500 to 5,000 meters (m. s. l.)					Above 5,000 meters (m. s. l.)				
	Maximum velocity	Direction	Altitude (m.) m. s. l.	Date	Station	Maximum velocity	Direction	Altitude (m.) m.s.l.	Date	Station	Maximum velocity	Direction	Altitude (m.) m.s.l.	Date	Station
Northeast [1]	63.2	NW.	1,542	26	Caribou, Maine	59.8	WNW.	4,547	14	Portland, Maine	93.7	W.	7,837	20	Caribou, Maine.
East-Central [2]	63.2	WNW.	1,917	14	Portland, Maine	60.7	WSW.	3,600	31	Knoxville, Tenn.	110.0	W.	10,930	29	Huntington, W. Va.
Southeast [3]	42.0	W.	2,151	31	Greensboro, N. C.	42.2	SW.	2,938	5	Birmingham, Ala.	60.0	W.	12,791	2	Charleston, S. C.
North-Central [4]	35.0	WNW.	1,962	31	Spartanburg, S. C.	51.2	WSW.	4,355	20	Sault Ste. Marie, Mich.	88.0	SW.	7,862	6	Milwaukee, Wis.
Central [5]	41.4	SSW.	1,194	6	Detroit, Mich.	63.0	WSW.	3,140	30	Evansville, Ind.	84.0	WSW.	12,985	28	Dodge City, Kans.
South-Central [6]	41.2	SSW.	1,650	5	Evansville, Ind.	52.5	WSW.	5,000	30	Amarillo, Tex.	82.0	S.	8,740	10	San Antonio, Tex.
Northwest [7]	38.2	WSW.	2,200	14	Del Rio, Tex.	56.0	NNW.	3,670	20	Glasgow, Mont.	84.0	NW.	8,229	23	Great Falls, Mont.
West-Central [8]	42.2	WSW.	1,379	5	Havre, Mont.	61.0	WNW.	3,047	24	Cheyenne, Wyo.	67.0	NW.	5,763	5	Oakland, Calif.
Southwest [9]	36.9	WSW.	2,038	4	Casper, Wyo.	58.0	WSW.	4,798	30	Roswell, N. Mex.	68.0	WSW.	10,915	31	Tucson, Ariz.
	32.1	NW.	2,367	11	Sandberg, Calif.										

[1] Maine, Vermont, New Hampshire, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Pennsylvania, and northern Ohio.
[2] Delaware, Maryland, Virginia, West Virginia, southern Ohio, Kentucky, eastern Tennessee, and North Carolina.
[3] South Carolina, Georgia, Florida, and Alabama.
[4] Michigan, Wisconsin, Minnesota, North Dakota, and South Dakota.
[5] Indiana, Illinois, Iowa, Nebraska, Kansas, and Missouri.
[6] Mississippi, Arkansas, Louisiana, Oklahoma, Texas (except El Paso), and western Tennessee.
[7] Montana, Idaho, Washington, and Oregon.
[8] Wyoming, Colorado, Utah, northern Nevada, and northern California.
[9] Southern California, southern Nevada, Arizona, New Mexico, and extreme west Texas.

RIVER STAGES AND FLOODS FOR JANUARY 1946

By C. R. JORDAN

Precipitation during January averaged above normal in the south-central States from eastern New Mexico and Colorado to Georgia and western Virginia, and in the western Lake Region. Less than half the normal amount was recorded in southern Florida, Pennsylvania, Ohio, and over much of the western half of the country.

Run-off and ground water levels were dominantly high over a great portion of the country. Run-off at a number of representative stations was the greatest of record according to the U. S. Geological Survey. Severely high and damaging floods occurred in the southern states, particularly in Kentucky, Tennessee, and Georgia. The greatest winter floods of record were reported in Iowa, southern Minnesota, and Wisconsin.

Atlantic Slope drainage.—A week of unseasonably warm weather during the period of January 9–14, melted much of the snow cover over the northeastern States and resulted in substantial rises in the streams of this area, with tributary streams reaching flood stage at a few places in New York. However, the river heights reached in most cases were well below flood stage, and no damage was reported.

Most of the coastal streams from the Roanoke River southward reached flood stage one or more times during the month. There were rather general rains over the Southeastern States on January 6 to 9 that raised the streams to moderately high stages, and flood stage was exceeded slightly at numerous places in Virginia, the Carolinas, and Georgia. Moderately heavy rains, or sleet in some cases, again fell over the area on January 16 and 17, prolonging the high stages and causing some streams to exceed flood stage for the second time during the month. The heaviest sleet storm of record was reported over the eastern Piedmont region of North Carolina; a maximum of 10 inches was measured in western Chatham County. The lower reaches of the streams in North and South Carolina persisted above flood stage most of the month. Unusually high stages were reached in the headwaters of the Altamaha River Basin in Georgia.

Eastern Gulf of Mexico drainage.—Scattered floods of record-breaking proportions occurred in many of the streams of the East Gulf States as a result of heavy
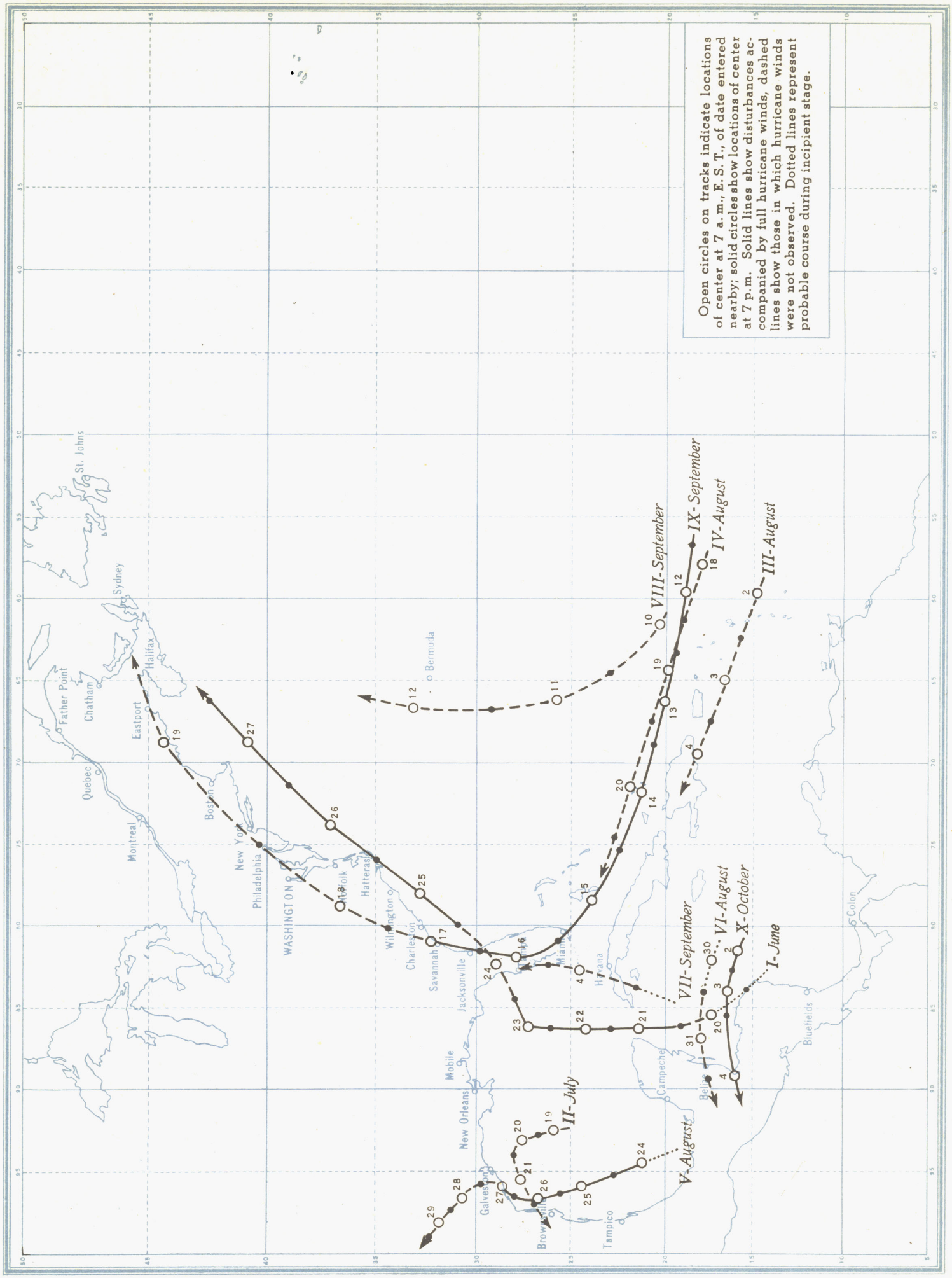
Chart I. Tracks of North Atlantic Hurricanes and Tropical Disturbances of 1945