ishes beyond the point at which eviction of air equals or exceeds inflow to the vortex, an excess of air enters the system, the vortex fills and is destroyed.

The last three phases are to a considerable degree distinguishable only as separate maxima in effects of factors operating simultaneously throughout but at rates which distribute these maxima into different successive periods in a continuous process.

METEOROLOGICAL AND CLIMATOLOGICAL DATA FOR JANUARY 1942

[Climate and Crop Weather Division, J. B. KINCER in charge]

AEROLOGICAL OBSERVATIONS

TABLE 1.—*Mean free-air barometric pressure in millibars, temperature in degrees Centigrade, and relative humidities in percent, obtained by airplanes and radiosondes during January 1942*

Stations with elevations in meters above sea level

Altitude (meters) m. s. l.	Albuquerque, N. Mex. (1620 m.)				Atlanta, Ga. (300 m.)				Bismarck, N. Dak. (505 m.)				Boise, Idaho (864 m.)				Brownsville, Tex. (6 m.)				Buffalo, N. Y. (221 m.)				Charleston, S. C. (14 m.)			
	Number of observations	Pressure	Temperature	Relative humidity	Number of observations	Pressure	Temperature	Relative humidity	Number of observations	Pressure	Temperature	Relative humidity	Number of observations	Pressure	Temperature	Relative humidity	Number of observations	Pressure	Temperature	Relative humidity	Number of observations	Pressure	Temperature	Relative humidity	Number of observations	Pressure	Temperature	Relative humidity
Surface	31	841	3.1	42	31	985	3.8	71	31	958	−8.4	77	31	925	−5.8	89	31	1,022	12.5	88	30	989	−4.3	77	31	1,019	6.7	81
500					31	962	5.7	63									31	964	13.5	75	30	955	−5.0	83	31	960	8.5	66
1,000					31	905	4.6	59	31	900	−4.6	74	31	909	−4.2	87	31	908	11.7	70	30	896	−7.0	81	31	904	6.5	61
1,500					31	851	3.9	52	31	844	−5.5	69	31	854	−3.7	85	31	856	9.9	65	30	840	−8.4	77	31	851	4.8	55
2,000	31	803	3.4	42	31	800	3.1	44	31	791	−6.4	64	31	801	−2.5	79	31	805	8.7	57	30	787	−9.5	71	31	800	3.7	49
2,500	31	754	0.7	43	31	752	1.7	39	31	742	−8.6	62	31	752	−3.3	73	31	758	7.3	48	30	738	−11.1	68	31	752	1.7	42
3,000	31	709	−1.8	43	31	706	−0.6	36	31	695	−11.0	60	31	706	−5.1	70	31	713	5.6	43	30	691	−12.9	66	31	706	−0.6	38
4,000	31	624	−7.2	40	31	622	−6.6	35	31	610	−16.9	58	30	621	−10.3	64	31	630	−0.2	36	30	605	−18.1	63	31	622	−6.1	36
5,000	31	548	−12.8	38	31	547	−13.0	35	30	533	−23.3	57	30	544	−17.0	61	31	556	−6.5	33	30	528	−24.3	61	30	547	−12.9	36
6,000	31	480	−19.3	37	31	479	−19.6	35	29	464	−30.1	56	30	476	−23.6	57	30	488	−13.7	32	30	460	−31.3	60	28	479	−19.9	36
7,000	31	419	−26.5	36	31	418	−26.7	34	29	402	−37.2	55	30	414	−30.3	57	30	427	−21.0	32	30	398	−38.0	58	28	418	−26.9	35
8,000	31	364	−33.8	35	30	363	−34.1	33	29	347	−43.9		28	359	−37.4	57	28	373	−28.1	32	30	344	−44.5		26	363	−34.0	36
9,000	31	315	−41.0		30	314	−41.2		29	298	−49.6		27	310	−44.8		27	323	−35.3	33	29	295	−50.0		26	314	−40.9	
10,000	30	272	−47.7		29	270	−47.8		29	256	−54.5		25	266	−51.6		27	280	−42.2		25	254	−54.0		26	270	−47.6	
11,000	29	233	−53.5		29	232	−52.2		28	219	−56.9		24	228	−56.6		25	240	−49.7		25	217	−55.4		26	232	−52.4	
12,000	29	199	−55.4		29	199	−54.7		24	186	−57.7		22	194	−58.5		23	206	−55.3		23	185	−54.0		23	199	−55.7	
13,000	29	170	−56.0		28	170	−56.1		22	159	−56.8		18	166	−56.0		23	175	−61.0		22	158	−54.2		20	170	−57.2	
14,000	28	145	−57.5		28	145	−57.5		18	135	−56.2		18	141	−55.1		22	149	−66.6		19	135	−55.0		19	144	−60.3	
15,000	27	124	−59.5		25	124	−60.3		16	115	−57.4		16	120	−56.6		18	126	−71.7		18	116	−55.5		18	123	−63.2	
16,000	25	106	−62.3		18	105	−63.0		13	98	−59.2		15	103	−58.2		15	107	−76.8		16	98	−56.3		16	104	−65.4	
17,000	22	90	−63.8		11	89	−65.7		8	83	−59.7		14	88	−58.8		9	89	−79.4		7	84	−56.8		7	89	−67.2	
18,000	15	76	−64.0														6	75	−80.1									

Altitude (meters) m. s. l.	Denver, Colo. (1,616 m.)				Detroit, Mich. (194 m.)				El Paso, Tex. (1,193 m.)				Ely, Nev. (1,908 m.)				Great Falls, Mont. (1,128 m.)				Huntington, W. Va. (172 m.)				Joliet, Ill. (178 m.)			
	Number of observations	Pressure	Temperature	Relative humidity	Number of observations	Pressure	Temperature	Relative humidity	Number of observations	Pressure	Temperature	Relative humidity	Number of observations	Pressure	Temperature	Relative humidity	Number of observations	Pressure	Temperature	Relative humidity	Number of observations	Pressure	Temperature	Relative humidity	Number of observations	Pressure	Temperature	Relative humidity
Surface	31	840	−4.9	72	31	993	−4.9	84	31	886	6.5	50	31	812	−5.7	84	30	890	−1.4	61	31	999	−1.5	77	29	996	−6.0	86
500					31	954	−5.3	83													31	959	−0.7	74	29	957	−5.9	85
1,000					31	896	−6.5	77													31	900	−2.8	72	29	897	−6.4	78
1,500					31	840	−6.7	69	31	854	8.8	47					30	849	0.1	57	31	845	−4.6	69	29	842	−6.4	71
2,000	31	800	−0.5	58	31	788	−7.7	63	31	803	6.3	46	31	803	−3.3	80	30	797	−2.7	54	31	792	−5.5	61	28	789	−7.4	67
2,500	31	751	−2.0	54	31	738	−9.5	63	31	756	4.0	45	31	754	−2.9	72	30	748	−5.5	53	31	744	−7.4	57	28	740	−9.1	65
3,000	31	706	−4.8	51	31	692	−11.8	62	31	710	1.7	42	31	708	−4.5	64	30	701	−8.5	52	31	697	−9.3	55	28	693	−11.4	62
4,000	31	620	−11.3	49	31	606	−17.0	62	31	627	−4.0	38	31	623	−9.7	61	30	616	−13.9	50	31	612	−14.5	54	28	607	−16.8	59
5,000	31	544	−17.8	48	31	530	−23.0	61	31	551	−10.5	36	31	546	−15.3	57	30	539	−20.8	48	31	536	−20.0	53	28	531	−22.8	61
6,000	31	475	−25.0	46	29	462	−29.4	56	30	483	−17.3	36	30	478	−21.9	56	29	470	−28.0	48	30	468	−26.5	53	28	462	−29.6	60
7,000	31	413	−32.0	45	28	400	−35.9	54	29	422	−24.4	35	29	416	−29.4	53	29	408	−35.3	47	28	406	−33.6	52	28	401	−36.6	58
8,000	31	357	−39.2	42	27	346	−42.6		29	367	−32.0	35	28	361	−36.9	52	29	353	−42.2		26	351	−41.2		28	346	−42.8	
9,000	31	308	−46.2		26	298	−48.9		29	318	−39.8	35	27	312	−44.8		29	303	−48.9		24	302	−48.5		28	298	−48.2	
10,000	30	265	−51.9		24	255	−52.2		28	274	−47.4		25	268	−52.1		28	260	−55.1		22	259	−53.3		27	255	−52.2	
11,000	30	227	−55.6		21	219	−54.2		28	235	−54.0		25	229	−57.5		28	223	−59.1		20	222	−55.5		27	219	−54.2	
12,000	30	194	−55.9		17	187	−53.3		28	201	−57.3		25	196	−58.6		28	190	−60.0		18	189	−55.9		27	187	−54.0	
13,000	27	165	−55.5		15	160	−52.5		28	171	−58.7		21	167	−57.9		26	161	−58.0		14	160	−56.3		25	160	−53.4	
14,000	26	141	−56.6		12	137	−51.5		26	146	−61.6		17	142	−58.8		23	138	−57.9		12	136	−57.9		24	137	−54.4	
15,000	24	120	−58.7		10	117	−53.1		24	124	−64.4		12	122	−61.0		20	118	−59.6		7	116	−60.0		18	117	−55.7	
16,000	21	102	−60.8		8	100	−54.4		24	105	−68.3		7	104	−63.8		13	100	−60.7						13	99	−57.4	
17,000	14	87	−61.6						17	89	−71.1						5	85	−60.8						8	84	−58.5	
18,000	6	74	−61.6						11	75	−71.2																	

TABLE 1.—*Mean free-air barometric pressure in millibars, temperature in degrees Centigrade, and relative humidities in percent, obtained by airplanes and radiosondes during January 1942*—Continued

Altitude (meters) m. s. l.	Lake Charles, La. (6 m.)				Lakehurst, N. J.[1] (39 m.)				Medford, Oreg. (401 m.)				Miami, Fla. (4 m.)				Nashville, Tenn. (180 m.)				Norfolk, Va.[1 2] (10 m.)				Oakland, Calif. (2 m.)			
	Number of observations	Pressure	Temperature	Relative humidity	Number of observations	Pressure	Temperature	Relative humidity	Number of observations	Pressure	Temperature	Relative humidity	Number of observations	Pressure	Temperature	Relative humidity	Number of observations	Pressure	Temperature	Relative humidity	Number of observations	Pressure	Temperature	Relative humidity	Number of observations	Pressure	Temperature	Relative humidity
Surface	29	1,023	7.2	82	29	1,014	−2.9	68	31	971	4.7	82	31	1,020	15.1	87	31	1,000	0.6	71	20	1,021	2.8	73	31	1,020	9.7	84
500	29	963	8.9	63	29	957	−3.1	61	31	960	5.6	80	31	962	17.0	79	31	961	1.3	69	20	960	4.0	61	31	961	10.1	75
1,000	29	907	8.0	55	29	899	−4.7	56	31	903	5.6	70	31	908	13.9	80	31	903	−.1	64	20	903	2.6	56	31	905	8.8	68
1,500	29	854	7.3	48	29	843	−5.5	53	31	849	4.1	66	31	855	11.7	69	31	848	−.6	57	20	849	1.5	52	31	852	7.2	60
2,000	29	803	5.9	43	29	791	−6.4	48	31	798	1.7	65	31	805	9.8	61	31	796	−1.5	52	20	797	0.0	46	31	801	4.9	56
2,500	29	756	4.3	39	29	742	−7.8	45	31	750	−.7	63	31	758	7.4	53	31	748	−3.6	49	20	748	−1.8	38	31	753	2.2	53
3,000	29	710	2.1	36	29	695	−9.6	43	31	704	−3.4	59	31	713	5.3	47	31	702	−6.0	45	20	702	−3.7	35	31	708	−0.2	51
4,000	29	627	−3.4	35	29	610	−14.7	45	31	620	−9.2	52	30	631	.1	40	30	617	−10.6	42	20	618	−8.9	33	31	624	−5.6	45
5,000	28	552	−10.4	36	29	534	−20.7	47	30	544	−16.0	49	29	556	−5.9	37	29	541	−16.2	42	17	543	−16.2	30	31	548	−12.2	42
6,000	28	483	−17.6	37	28	466	−27.0	47	29	475	−23.3	47	27	488	−12.7	33	28	473	−22.9	40	----	----	----	----	31	480	−19.2	41
7,000	28	422	−24.8	37	28	404	−33.6	46	28	414	−30.7	46	27	428	−19.8	32	25	411	−30.2	39	----	----	----	----	30	419	−26.6	40
8,000	28	367	−32.4	36	27	350	−40.7	----	28	358	−38.4	46	27	373	−26.6	32	22	356	−38.1	38	----	----	----	----	29	364	−34.3	40
9,000	28	318	−40.0	36	26	301	−47.3	----	28	309	−45.7	----	26	324	−33.5	31	21	308	−45.1	----	----	----	----	----	28	315	−41.7	----
10,000	27	274	−47.0	----	25	259	−51.7	----	28	266	−52.9	----	26	281	−40.6	----	20	264	−50.6	----	----	----	----	----	25	271	−48.8	----
11,000	26	235	−52.8	----	25	223	−53.8	----	26	227	−58.7	----	26	242	−47.2	----	18	226	54.0	----	----	----	----	----	23	233	−54.6	----
12,000	22	201	−57.0	----	24	191	−54.0	----	24	194	−59.7	----	26	207	−53.4	----	17	193	−56.1	----	----	----	----	----	23	199	−57.3	----
13,000	22	171	−60.7	----	22	164	−54.5	----	21	165	−58.1	----	26	177	−58.5	----	16	164	−56.2	----	----	----	----	----	20	169	−57.9	----
14,000	21	146	−63.3	----	19	140	−55.2	----	19	141	−59.0	----	26	151	−63.3	----	11	140	−57.9	----	----	----	----	----	19	144	−57.4	----
15,000	20	124	−66.2	----	14	120	−56.1	----	18	120	−60.4	----	26	128	−67.7	----	10	119	−59.7	----	----	----	----	----	16	123	−59.6	----
16,000	16	105	−69.5	----	8	102	−57.2	----	15	102	−61.8	----	24	108	−70.9	----	8	101	−62.1	----	----	----	----	----	14	104	−61.3	----
17,000	10	88	−71.5	----	6	87	−58.4	----	11	87	−62.7	----	19	92	−73.0	----	5	85	−62.9	----	----	----	----	----	10	88	−63.0	----
18,000	----	----	----	----	----	----	----	----	5	73	−62.4	----	10	76	−73.5	----	----	----	----	----	----	----	----	----	8	75	−64.0	----

Altitude (meters) m. s. l.	Oklahoma City, Okla. (391 m.)				Omaha, Nebr. (301 m.)				Pensacola, Fla.[1] (24 m.)				Phoenix, Ariz. (339 m.)				Portland, Maine (20 m.)				St. Louis, Mo. (171 m.)				St. Paul, Minn. (225 m.)			
	Number of observations	Pressure	Temperature	Relative humidity	Number of observations	Pressure	Temperature	Relative humidity	Number of observations	Pressure	Temperature	Relative humidity	Number of observations	Pressure	Temperature	Relative humidity	Number of observations	Pressure	Temperature	Relative humidity	Number of observations	Pressure	Temperature	Relative humidity	Number of observations	Pressure	Temperature	Relative humidity
Surface	30	977	1.0	68	31	985	−4.6	83	17	1,019	11.0	71	31	978	10.0	66	31	1,013	−6.7	71	31	1,000	−1.4	68	31	990	−6.6	78
500	30	964	2.5	66	31	960	−2.7	74	17	962	9.6	55	31	960	14.8	47	31	953	−6.9	74	31	960	−1.1	66	31	956	−6.7	78
1,000	30	906	2.7	61	31	901	−2.7	62	17	906	8.6	45	31	905	13.1	39	31	894	−8.3	71	31	902	−2.3	63	31	896	−7.6	75
1,500	30	852	1.7	59	31	846	−3.1	56	17	853	7.6	37	31	852	10.0	38	31	837	−9.7	69	31	846	−2.8	56	31	841	−7.7	67
2,000	30	800	1.0	51	31	794	−4.1	50	17	802	5.7	29	31	802	7.2	39	31	785	−11.0	69	31	794	−3.4	50	31	788	−8.8	63
2,500	30	752	−1.0	48	31	746	−6.3	48	17	754	3.4	29	31	755	4.4	37	31	735	−12.9	71	31	746	−5.5	48	31	739	−10.1	60
3,000	30	706	−3.3	45	31	699	−8.9	47	17	708	0.7	27	31	709	1.9	35	31	688	−14.8	70	31	699	−8.1	47	31	692	−12.3	58
4,000	29	621	−9.7	42	31	614	−14.0	45	17	625	−5.5	31	31	626	−3.5	35	31	602	−19.3	68	30	614	−13.3	48	31	606	−17.6	55
5,000	28	546	−15.9	42	30	537	−20.6	44	16	549	−11.7	30	31	551	−9.7	35	30	526	−25.1	66	30	538	−19.3	45	31	530	−24.1	54
6,000	28	477	−22.1	43	27	468	−28.2	43	16	481	−18.6	34	31	483	−16.7	35	30	457	−31.5	65	30	470	−26.1	44	31	461	−30.4	53
7,000	26	416	−29.3	42	27	406	−35.3	44	15	420	−25.8	36	31	422	−24.1	36	30	394	−38.2	63	30	408	−33.0	44	31	400	−37.6	52
8,000	26	360	−37.1	41	26	351	−42.1	----	7	364	−32.5	----	30	367	−31.7	36	30	342	−44.4	----	29	353	−40.0	----	30	345	−44.9	----
9,000	25	311	−44.5	----	26	302	−48.8	----	5	315	−39.5	----	30	318	−39.3	36	29	294	−49.5	----	29	304	−46.1	----	30	296	−50.9	----
10,000	25	268	−50.8	----	26	259	−54.2	----	----	----	----	----	29	274	−46.7	----	28	252	−52.7	----	28	262	−51.6	----	28	254	−55.1	----
11,000	23	230	−55.1	----	26	221	−56.7	----	----	----	----	----	29	236	−52.8	----	25	216	−53.2	----	28	224	−55.0	----	28	217	−56.8	----
12,000	22	196	−56.9	----	24	188	−56.7	----	----	----	----	----	29	201	−56.4	----	22	185	−53.0	----	27	191	−55.2	----	24	185	−56.1	----
13,000	21	168	−57.2	----	22	161	−56.0	----	----	----	----	----	29	172	−57.1	----	20	157	−52.9	----	22	163	−55.0	----	20	158	−54.3	----
14,000	16	143	−58.3	----	19	137	−56.1	----	----	----	----	----	28	147	−58.1	----	12	135	−54.0	----	20	139	−56.0	----	16	135	−54.6	----
15,000	11	121	−60.9	----	14	116	−58.2	----	----	----	----	----	27	125	−60.5	----	8	115	−55.2	----	17	118	−57.3	----	11	115	−57.0	----
16,000	9	104	−63.4	----	8	99	−59.4	----	----	----	----	----	25	106	−63.2	----	5	97	−55.0	----	15	100	−58.7	----	6	98	−58.5	----
17,000	----	----	----	----	----	----	----	----	----	----	----	----	17	90	−65.6	----	----	----	----	----	11	85	−59.9	----	----	----	----	----
18,000	----	----	----	----	----	----	----	----	----	----	----	----	14	76	−66.2	----	----	----	----	----	----	----	----	----	----	----	----	----
19,000	----	----	----	----	----	----	----	----	----	----	----	----	9	64	−65.3	----	----	----	----	----	----	----	----	----	----	----	----	----
20,000	----	----	----	----	----	----	----	----	----	----	----	----	6	54	−63.9	----	----	----	----	----	----	----	----	----	----	----	----	----

See footnotes at end of table.

TABLE 1.—*Mean free-air barometric pressure in millibars, temperature in degrees Centigrade, and relative humidities in percent, obtained by airplanes and radiosondes during January 1942*—Continued

Altitude (meters) m. s. l.	San Antonio, Tex. (174 m.)				San Diego, Calif.[1] (19 m.)				Sault Sainte Marie, Mich. (221 m.)				Seattle, Wash.[1] (27 m.)				Spokane, Wash. (598 m.)				Washington, D. C. (25 m.)				Anchorage, Alaska (42 m.)			
	Number of observations	Pressure	Temperature	Relative humidity	Number of observations	Pressure	Temperature	Relative humidity	Number of observations	Pressure	Temperature	Relative humidity	Number of observations	Pressure	Temperature	Relative humidity	Number of observations	Pressure	Temperature	Relative humidity	Number of observations	Pressure	Temperature	Relative humidity	Number of observations	Pressure	Temperature	Relative humidity
Surface	31	1,003	8.9	64	30	1,016	13.3	81	31	987	−9.7	85	30	1,019	3.1	80	31	953	−5.0	93	31	1,016	0.9	68	31	998	−4.0	86
500	31	965	10.1	61	30	960	13.3	55	31	952	−10.5	87	30	962	4.8	68					31	958	−0.5	67	31	942	−1.0	71
1,000	31	908	8.9	62	30	905	11.5	41	31	892	−11.3	87	30	905	3.1	64	31	906	−4.2	87	31	900	−2.4	66	31	884	−2.2	66
1,500	31	855	7.9	58	30	852	8.9	34	31	836	−11.7	82	30	850	0.9	61	31	851	−3.8	80	31	844	−4.4	67	31	830	−4.9	67
2,000	31	805	6.6	53	30	802	6.7	29	31	782	−13.1	78	30	799	−0.6	55	31	798	−4.0	73	31	793	−5.2	63	31	778	−8.0	69
2,500	31	757	5.3	45	30	754	4.2	30	31	732	−15.3	77	30	750	−3.0	50	30	749	−5.5	67	30	744	−6.8	59	31	730	−11.1	70
3,000	31	712	2.7	40	30	709	1.4	30	31	685	−17.5	75	30	704	−5.6	51	29	702	−7.5	62	29	697	−8.4	56	31	683	−13.9	67
4,000	30	628	−2.7	32	30	625	−4.6	24	29	599	−22.5	69	30	619	−11.4	56	29	616	−13.1	58	29	612	−13.1	54	31	598	−20.2	65
5,000	30	553	−9.3	32	29	550	−11.2	33	28	522	−28.5	66	30	542	−17.3	54	28	540	−19.5	56	29	536	−19.2	56	31	522	−27.0	65
6,000	30	485	−16.5	31	29	482	−17.8	43	26	454	−34.8	63	30	474	−24.3	57	28	471	−25.9	54	28	468	−25.6	53	31	454	−33.6	64
7,000	29	424	−23.7	31	28	420	−25.6	47	26	392	−41.5		30	412	−31.8	59	28	409	−32.7	52	26	406	−32.6	52	31	392	−40.3	60
8,000	27	369	−31.2	30	13	366	−33.5		26	338	−47.8		29	357	−39.3	62	26	354	−40.2		25	352	−40.1		31	338	−46.1	
9,000	25	320	−38.7	29	13	317	−41.1		24	290	−51.2		27	308	−47.2		26	305	−47.6		24	303	−47.4		31	291	−50.2	
10,000	24	276	−45.1		8	273	−48.2		24	248	−53.1		25	264	−54.3		25	262	−54.2		23	260	−53.6		31	250	−52.3	
11,000	22	237	−50.8		5	235	−54.2		21	213	−52.6		24	226	−59.4		25	224	−58.4		22	223	−56.3		29	214	−53.4	
12,000	19	203	−54.5						17	182	−51.9		23	192	−62.0		23	191	−58.1		20	189	−56.7		29	183	−52.9	
13,000	17	173	−57.1						14	156	−51.5		19	163	−60.0		21	163	−57.2		19	161	−56.9		29	157	−51.2	
14,000	16	148	−60.2						11	133	−52.3		18	139	−59.2		17	139	−56.5		18	138	−57.6		27	134	−50.8	
15,000	11	126	−63.0						7	114	−53.2		14	118	−59.6		14	118	−58.0		17	117	−59.3		24	115	−50.8	
16,000	11	107	−66.2						6	97	−53.8		12	101	−60.2		10	101	−59.2		16	99	−61.3		14	98	−51.4	
17,000	8	90	−68.0										7	86	−60.5		6	86	−60.2		10	84	−63.1					
18,000	7	76	−69.2																		6	71	−62.1					

Altitude (meters) m. s. l.	Fairbanks, Alaska (156 m.)				Juneau, Alaska (49 m.)				Ketchikan, Alaska (26 m.)				Nome, Alaska (14 m.)			
	Number of observations	Pressure	Temperature	Relative humidity	Number of observations	Pressure	Temperature	Relative humidity	Number of observations	Pressure	Temperature	Relative humidity	Number of observations	Pressure	Temperature	Relative humidity
Surface	31	988	−13.6	88	31	1,004	3.4	84	27	1,009	5.7	79	27	1,000	−7.5	74
500	31	945	−7.9	82	31	950	2.0	82	27	952	3.5	78	27	940	−6.2	75
1,000	31	887	−5.2	74	30	892	−0.5	82	27	895	0.5	78	27	882	−6.9	73
1,500	31	832	−6.0	69	29	838	−2.6	80	27	840	−1.6	77	27	827	−8.3	71
2,000	31	780	−8.1	66	28	786	−4.7	75	25	789	−4.1	76	27	775	−10.7	69
2,500	31	731	−11.1	64	26	738	−7.3	70	25	740	−6.3	73	27	726	−13.7	68
3,000	31	684	−14.2	63	24	691	−10.2	65	24	694	−9.2	71	27	679	−16.7	67
4,000	30	599	−20.4	61	22	606	−16.3	60	22	608	−15.0	70	26	594	−23.3	65
5,000	30	522	−27.4	59	22	529	−22.5	58	22	532	−21.6	70	26	517	−29.6	64
6,000	30	454	−34.4	59	17	461	−29.8	55	18	464	−28.5	71	26	449	−36.1	63
7,000	29	392	−41.0		16	399	−37.0	56	18	402	−35.3	68	25	387	−42.4	
8,000	29	338	−46.9		16	344	−44.3		16	347	−42.3		25	334	−48.1	
9,000	28	290	−51.6		15	296	−50.9		16	298	−48.9		25	287	−51.7	
10,000	28	248	−53.8		14	252	−56.2		16	255	−53.6		25	246	−51.7	
11,000	27	213	−54.7		12	215	−59.1		16	218	−57.4		23	211	−50.9	
12,000	26	182	−53.7		8	182	−61.0		14	186	−57.9		20	180	−49.0	
13,000	26	155	−52.4		8	154	−59.2		10	158	−55.7		17	155	−47.2	
14,000	21	133	−52.0		6	130	−57.4		9	135	−54.4		13	133	−46.5	
15,000	15	114	−52.4		5	110	−57.5		7	115	−55.0		10	114	−46.7	
16,000	10	97	−52.7						5	98	−55.8		5	98	−46.5	

See footnotes at end of table.

445914—42——2

LATE REPORTS

TABLE 1.—*Mean free-air barometric pressure in millibars, temperature in degrees Centigrade, and relative humidities in percent, obtained by airplanes and radiosondes during January 1942*—Continued

Stations with elevations in meters above sea level.

Altitude (meters) m. s. l.	MAY: Joliet,[3] Ill. (178 m.)				DECEMBER: Fairbanks, Alaska. (156 m.)				DECEMBER: Nome, Alaska (14 m.)				YEAR 1941: Anchorage, Alaska (41 m.)				YEAR 1941: Coco Solo, C. Z. (15 m.)				YEAR 1941: Fairbanks, Alaska (156 m.)			
	Number of observations	Pressure	Temperature	Relative humidity	Number of observations	Pressure	Temperature	Relative humidity	Number of observations	Pressure	Temperature	Relative humidity	Number of observations	Pressure	Temperature	Relative humidity	Number of observations	Pressure	Temperature	Relative humidity	Number of observations	Pressure	Temperature	Relative humidity
Surface	31	995	13.5	79	31	986	−18.5	78	31	997	−10.1	83	366	1,002	4.2	71	228	1,012	26.5	89	363	990	0.5	61
500	31	958	15.5	68	31	943	−13.7	77	31	937	−9.1	83	365	947	3.4	69	228	957	24.2	86	363	949	0.2	62
1,000	31	903	13.1	63	31	883	−11.5	74	31	878	−9.7	80	365	890	1.0	69	228	904	21.4	82	362	892	−1.6	63
1,500	31	850	10.3	61	31	827	−11.1	69	31	823	−11.7	77	363	836	−2.2	71	228	853	18.5	76	362	837	−3.7	64
2,000	31	800	7.5	60	31	775	−13.5	67	31	771	−14.4	73	362	785	−5.5	73	227	804	15.9	69	362	785	−6.4	66
2,500	31	753	4.6	60	31	725	−16.2	66	31	721	−17.1	68	360	736	−8.5	73	223	758	13.6	57	362	736	−9.4	66
3,000	31	708	1.4	61	31	678	−19.2	63	31	674	−20.4	66	357	690	−11.5	72	215	714	11.1	46	362	690	−12.5	66
4,000	30	625	−4.0	54	31	592	−25.5	62	30	588	−26.9	64	353	604	−17.6	69	130	633	4.4	45	360	604	−18.8	63
5,000	30	550	−10.4	49	30	515	−32.0	60	28	511	−33.4	63	342	528	−24.2	66	----	----	----	----	353	528	−25.3	60
6,000	29	482	−17.2	48	28	446	−38.9	59	28	442	−40.0	62	335	460	−30.9	64	----	----	----	----	350	459	−32.2	58
7,000	29	421	−24.0	47	27	385	−45.6	----	28	382	−46.0	----	332	398	−37.7	57	----	----	----	----	342	397	−39.0	----
8,000	29	366	−31.3	44	22	330	−51.6	----	27	327	−51.3	----	329	344	−44.2	----	----	----	----	----	326	343	−45.4	----
9,000	28	317	−38.6	----	20	283	−56.4	----	22	280	−54.7	----	323	296	−49.3	----	----	----	----	----	312	294	−50.5	----
10,000	28	274	−45.5	----	19	241	−58.8	----	21	240	−55.5	----	314	254	−51.2	----	----	----	----	----	305	252	−52.8	----
11,000	27	235	−51.6	----	16	206	−58.7	----	18	206	−53.7	----	307	218	−51.0	----	----	----	----	----	291	217	−51.9	----
12,000	25	201	−56.4	----	13	175	−57.5	----	13	175	−52.2	----	301	187	−49.6	----	----	----	----	----	278	185	−50.1	----
13,000	25	172	−59.5	----	10	150	−56.3	----	10	151	−51.5	----	283	160	−48.7	----	----	----	----	----	263	159	−49.2	----
14,000	25	146	−60.1	----	8	128	−55.5	----	8	129	−51.0	----	272	138	−48.6	----	----	----	----	----	244	136	−48.9	----
15,000	24	124	−59.0	----	6	109	−55.5	----	5	111	−50.6	----	253	118	−48.7	----	----	----	----	----	216	117	−49.1	----
16,000	23	106	−59.1	----	----	----	----	----	----	----	----	----	217	102	−48.9	----	----	----	----	----	182	101	−48.6	----
17,000	20	90	−59.4	----	----	----	----	----	----	----	----	----	168	88	−48.8	----	----	----	----	----	----	----	----	----
18,000	15	76	−58.7	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
19,000	9	64	−56.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

YEAR 1941

Altitude (meters) m. s. l.	Juneau, Alaska (49 m.)				Ketchikan, Alaska (260 m.)				Nome, Alaska (14 m.)				San Juan, P. R. (15 m.)				Swan Island, West Indies (10 m.)				St. Louis, Mo. (171 m.)			
	Number of observations	Pressure	Temperature	Relative humidity	Number of observations	Pressure	Temperature	Relative humidity	Number of observations	Pressure	Temperature	Relative humidity	Number of observations	Pressure	Temperature	Relative humidity	Number of observations	Pressure	Temperature	Relative humidity	Number of observations	Pressure	Temperature	Relative humidity
Surface	354	1,005	7.2	76	350	1,009	8.7	78	355	1,007	−0.3	76	323	1,014	24.7	87	365	1,012	26.2	82	352	997	12.4	75
500	354	951	4.8	76	350	953	6.6	79	354	948	−1.6	75	323	960	22.8	87	364	957	23.1	86	352	959	12.4	70
1,000	350	894	1.7	78	350	896	3.4	79	353	890	−3.3	74	323	906	19.8	84	364	904	20.2	82	351	903	10.2	69
1,500	342	840	−1.3	80	346	842	0.5	79	353	835	−5.3	71	323	855	16.9	81	364	853	17.6	75	350	850	8.1	68
2,000	334	789	−4.1	80	344	791	−2.3	76	353	783	−7.6	67	323	806	14.6	72	365	804	15.2	69	350	800	6.0	65
2,500	324	740	−6.8	78	342	742	−5.0	71	353	734	−10.3	65	323	759	12.5	61	365	758	12.9	63	348	752	3.7	61
3,000	311	694	−9.6	74	341	696	−7.8	67	353	688	−13.1	63	320	715	10.0	53	365	714	10.5	56	348	707	1.0	59
4,000	286	609	−15.6	68	335	612	−13.9	62	344	602	−19.1	58	319	634	4.7	46	361	633	5.4	49	343	624	−4.6	55
5,000	263	532	−22.0	64	318	535	−20.4	60	337	526	−25.4	55	313	560	−0.8	42	357	560	−0.1	45	338	549	−10.6	50
6,000	239	464	−28.6	61	307	467	−27.1	57	328	457	−32.3	53	311	494	−6.8	39	352	493	−6.2	43	335	481	−17.0	46
7,000	219	402	−35.6	----	287	405	−34.1	51	326	396	−38.9	----	307	434	−13.4	36	350	434	−12.5	41	328	420	−23.8	42
8,000	204	347	−42.4	----	264	350	−41.1	----	314	342	−45.0	----	297	380	−20.3	35	348	380	−19.3	40	315	366	−30.9	----
9,000	177	299	−48.3	----	249	302	−47.3	----	303	294	−49.5	----	296	330	−27.6	35	345	331	−26.3	38	308	317	−38.1	----
10,000	161	256	−52.0	----	232	259	−51.2	----	289	252	−51.2	----	289	287	−35.2	34	342	288	−33.7	37	296	274	−44.9	----
11,000	148	220	−52.5	----	219	222	−53.0	----	276	217	−50.6	----	279	248	−43.0	----	336	249	−41.6	----	286	235	−50.5	----
12,000	140	188	−50.8	----	204	190	−52.2	----	265	186	−49.3	----	270	214	−50.6	----	330	214	−49.4	----	277	202	−54.3	----
13,000	125	161	−49.2	----	194	163	−51.1	----	254	159	−48.3	----	260	183	−58.2	----	322	184	−57.4	----	267	172	−57.1	----
14,000	116	138	−49.2	----	166	139	−51.0	----	237	137	−48.0	----	255	156	−65.2	----	306	156	−65.3	----	254	147	−59.3	----
15,000	----	----	----	----	144	119	−51.1	----	224	118	−48.0	----	244	132	−71.2	----	299	132	−72.5	----	238	125	−61.1	----
16,000	----	----	----	----	106	103	−51.4	----	190	102	−47.8	----	233	111	−75.3	----	292	111	−77.9	----	220	106	−62.2	----
17,000	----	----	----	----	----	----	----	----	147	88	−47.9	----	221	93	−76.6	----	267	93	−80.2	----	180	91	−62.3	----
18,000	----	----	----	----	----	----	----	----	----	----	----	----	193	78	−74.1	----	231	78	−78.1	----	----	----	----	----
19,000	----	----	----	----	----	----	----	----	----	----	----	----	160	66	−69.6	----	162	66	−73.7	----	----	----	----	----

[1] Navy stations.
[2] Airplane observations.
[3] Observations made at 1:00 a. m., 75th meridian time.

NOTE.:—All observations taken at 11 p. m. 75th meridian time, except at Lakehurst, N. J., where they were taken near 5 a. m. (75th meridian time), between Jan. 1 and 21, and near 11 p. m. (75th meridian time), during the remainder of the month, and at Norfolk, Va., and at Seattle, Wash., where they are taken about 6 a. m. e. s. t.

None of the means included in this table are based on less than 15 surface or 5 standard level observations.

Number of observations refers to pressure only, as temperature and humidity data are missing for some observations at certain levels, also, the humidity data are not used in daily observations when the temperature is below −40.0° C.

TABLE 2.—*Free-air resultant winds based on pilot balloon observations made near 5 p.m. (75th meridian time) during January, 1942. 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. (537 m.)			Albuquerque, N. Mex. (1,630 m.)			Atlanta, Ga. (299 m.)			Billings, Mont. (1,095 m.)			Bismarck, N. Dak. (512 m.)			Boise, Idaho (866 m.)			Brownsville, Tex. (7 m.)			Buffalo, N. Y. (220 m.)			Burlington, Vt. (132 m.)			Charleston S. C. (17 m.)			Chicago, Ill. (192 m.)			Cincinnati, Ohio (152 m.)			Denver, Colo. (1,627 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	31	280	1.5	31	269	1.5	30	282	3.1	30	241	5.6	31	294	5.5	25	112	1.4	26	75	1.8	28	238	4.7	30	186	1.3	30	287	1.2	27	267	4.2	31	238	2.4	30	219	0.8
500	---	---	---	---	---	---	30	279	4.0	---	---	---	---	---	---	---	---	---	26	95	3.0	28	242	8.2	30	219	3.7	30	255	3.0	27	268	5.9	31	242	4.4	---	---	---
1,000	31	279	1.8	---	---	---	30	282	5.5	---	---	---	31	302	8.4	25	132	1.2	23	75	2.0	20	247	11.4	28	250	5.9	28	249	5.1	24	267	8.1	27	253	7.0	---	---	---
1,500	28	257	4.0	---	---	---	28	278	8.9	30	267	9.7	29	310	12.2	25	152	1.4	22	272	1.6	12	270	9.0	22	267	9.6	28	259	8.7	22	273	10.8	23	279	9.6	---	---	---
2,000	27	269	6.2	31	272	2.3	26	279	11.8	30	295	9.9	26	309	13.0	23	208	2.2	19	265	2.8	---	---	---	11	294	9.0	25	271	11.1	21	280	13.4	20	280	13.7	30	273	1.4
2,500	25	289	8.0	31	281	3.3	25	280	14.0	29	294	10.4	26	310	14.2	19	230	3.3	16	272	3.9	---	---	---	---	---	---	25	264	13.0	20	280	14.4	17	282	15.4	30	292	4.4
3,000	23	285	10.4	31	287	6.6	24	280	16.1	27	297	11.2	25	309	14.8	19	252	4.2	16	273	6.0	---	---	---	---	---	---	25	262	14.4	19	284	17.1	13	279	15.3	29	292	6.8
4,000	23	283	13.7	29	291	11.1	20	285	17.5	24	303	12.8	24	312	15.3	16	280	5.7	13	287	7.6	---	---	---	---	---	---	22	264	19.0	16	283	20.4	---	---	---	25	300	10.3
5,000	22	279	17.3	28	288	15.2	19	286	19.8	22	305	12.8	24	307	17.7	11	311	8.0	12	290	7.6	---	---	---	---	---	---	17	267	20.4	13	284	21.2	---	---	---	21	311	12.5
6,000	20	279	19.6	27	288	19.9	17	282	19.0	19	311	11.8	22	307	18.0	---	---	---	11	279	10.3	---	---	---	---	---	---	14	267	19.0	---	---	---	---	---	---	19	313	13.5
8,000	16	287	23.5	20	288	19.6	---	---	---	---	---	---	19	304	18.8	---	---	---	11	280	15.9	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
10,000	13	286	28.9	14	287	22.4	---	---	---	---	---	---	14	292	17.0	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
12,000	---	---	---	12	278	26.0	---	---	---	---	---	---	11	302	14.0	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Altitude (meters) m. s. l.	El Paso, Tex. (1,196 m.)			Ely, Nev. (1,910 m.)			Grand Junction, Colo. (1,413 m.)			Greensboro, N. C. (271 m.)			Havre, Mont. (767 m.)			Jacksonville, Fla. (16 m.)			Las Vegas, Nev. (570 m.)			Little Rock, Ark. (88 m.)			Medford, Oreg. (410 m.)			Miami, Fla. (10 m.)			Minneapolis, Minn. (265 m.)			Mobile, Ala. (66 m.)			Nashville, Tenn. (194 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	31	221	0.8	31	349	0.5	30	112	0.5	29	278	1.9	31	255	4.0	31	281	1.6	31	54	2.6	31	304	1.2	29	97	0.5	31	16	1.8	31	277	3.1	30	309	1.9	29	267	1.8
500	---	---	---	---	---	---	---	---	---	29	273	3.3	---	---	---	31	261	3.6	---	---	---	31	285	2.7	29	143	.4	31	31	2.1	31	278	4.4	29	296	2.8	29	258	3.5
1,000	---	---	---	---	---	---	---	---	---	29	277	4.9	31	260	8.2	31	257	5.3	31	42	3.1	30	282	5.4	29	145	3.8	31	360	.9	24	299	7.9	27	300	4.2	25	266	4.4
1,500	31	242	.8	---	---	---	---	---	---	29	279	7.6	30	279	10.8	29	269	7.5	31	33	2.1	30	284	8.7	29	180	4.9	31	272	1.9	22	309	9.3	26	308	7.7	24	282	6.6
2,000	31	269	1.6	31	169	.2	30	39	.4	23	277	11.4	28	289	11.3	28	272	10.9	31	314	.5	28	282	10.5	29	204	6.0	29	276	4.9	21	308	12.2	26	298	8.9	22	288	10.1
2,500	30	272	5.3	31	209	1.4	30	246	1.2	21	282	13.2	26	288	12.1	26	272	11.3	31	297	1.7	27	287	12.4	24	210	5.5	27	265	5.6	20	309	13.6	22	286	8.5	21	287	13.4
3,000	28	272	8.8	31	260	1.5	30	253	3.7	20	285	16.0	23	291	11.7	26	270	12.0	31	276	3.2	24	289	13.2	20	199	3.6	22	269	7.8	20	308	14.9	21	288	10.8	18	287	15.3
4,000	28	278	12.2	26	295	4.4	24	298	5.9	18	286	20.6	21	300	12.8	25	269	15.9	31	277	6.6	20	289	15.5	16	200	3.0	21	265	10.2	18	306	18.3	18	276	14.1	11	289	18.7
5,000	27	282	15.0	21	307	6.8	22	309	7.7	16	282	21.5	16	293	11.4	24	269	17.8	26	303	9.3	16	294	16.3	16	243	3.4	19	264	11.6	17	311	20.4	12	283	12.0	---	---	---
6,000	24	280	16.7	21	311	9.1	17	302	8.6	16	282	24.8	12	309	11.3	21	270	21.7	25	298	13.3	---	---	---	15	264	4.4	17	270	14.9	15	310	23.0	---	---	---	---	---	---
8,000	20	289	17.4	17	323	16.7	---	---	---	11	285	24.9	---	---	---	13	272	23.3	21	299	18.8	---	---	---	---	---	---	12	274	23.2	11	306	26.3	---	---	---	---	---	---
10,000	16	288	20.0	16	313	22.3	---	---	---	---	---	---	---	---	---	---	---	---	17	306	24.4	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
12,000	10	274	25.3	13	299	22.3	---	---	---	---	---	---	---	---	---	---	---	---	15	292	26.7	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
14,000	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	10	290	22.5	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Altitude (meters) m. s. l.	New York, N. Y. (15 m.)			Oakland, Calif. (8 m.)			Oklahoma City, Okla. (402 m.)			Omaha, Nebr. (306 m.)			Phoenix, Ariz. (338 m.)			Rapid City, S. Dak. (982 m.)			St. Louis, Mo. (181 m.)			San Antonio, Tex. (180 m.)			San Diego, Calif. (15 m.)			Sault St. Marie, Mich. (230 m.)			Seattle, Wash. (12 m.)			Spokane, Wash. (603 m.)			Washington, D. C. (24 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	288	4.1	28	264	0.4	30	301	1.9	30	291	3.2	31	98	0.2	31	334	5.7	30	264	3.7	31	30	0.5	30	299	2.8	24	316	1.0	26	146	1.4	---	---	---	30	272	1.9
500	28	272	6.5	28	107	1.8	30	290	1.9	29	295	4.4	31	93	0.5	---	---	---	30	266	5.7	31	26	0.9	30	310	1.3	24	273	2.3	26	142	4.2	---	---	---	30	251	4.2
1,000	26	274	8.9	25	169	1.2	30	282	3.3	28	302	7.8	31	102	1.3	31	332	5.7	28	277	8.0	30	254	0.9	29	34	0.2	19	294	4.7	23	159	4.1	---	---	---	28	261	7.5
1,500	24	285	11.1	24	201	2.1	29	286	6.6	28	302	10.2	31	116	1.3	31	315	9.1	26	289	10.3	26	272	2.6	29	315	1.2	12	325	7.3	23	188	4.3	---	---	---	28	273	10.1
2,000	17	289	13.9	17	211	1.6	28	288	7.8	28	304	11.7	31	251	0.5	30	311	10.8	26	290	12.3	23	268	4.5	29	310	2.4	---	---	---	20	199	5.8	---	---	---	26	275	13.2
2,500	16	286	15.2	14	3	0.8	26	282	9.0	28	302	13.1	31	276	2.5	29	313	12.1	26	294	13.5	22	270	6.0	27	296	4.1	---	---	---	20	206	6.5	---	---	---	22	279	16.6
3,000	---	---	---	14	318	1.7	25	286	11.2	28	301	13.5	30	289	4.3	29	311	13.2	24	296	16.0	21	272	8.9	25	294	4.5	---	---	---	17	212	5.2	---	---	---	20	280	19.9
4,000	---	---	---	12	302	7.8	24	289	13.2	24	302	15.3	29	286	6.6	28	309	14.8	22	294	18.3	18	276	12.6	22	279	6.4	---	---	---	13	237	6.8	---	---	---	15	280	26.4
5,000	---	---	---	11	312	10.3	22	293	16.2	22	296	17.1	25	296	9.9	27	313	15.6	19	295	21.5	17	278	14.1	19	283	9.0	---	---	---	---	---	---	---	---	---	14	283	30.5
6,000	---	---	---	---	---	---	16	295	16.3	22	299	18.5	23	290	13.2	24	313	15.6	17	299	21.1	16	281	16.7	15	281	9.3	---	---	---	---	---	---	---	---	---	10	291	35.0
8,000	---	---	---	---	---	---	---	---	---	13	313	20.0	17	303	17.1	20	322	18.1	---	---	---	11	294	21.1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
10,000	---	---	---	---	---	---	---	---	---	---	---	---	10	293	19.3	13	315	18.5	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
12,000	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	10	296	14.5	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

TABLE 3.—*Maximum free-air wind velocities (m. p. s.), for different sections of the United States based on pilot balloon observations during January 1942*

Section	Surface to 2,500 meters (m. s. l.)					Between 2,500 and 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]	59.0	WSW	1,810	17	Binghamton, N. Y.	55.6	W WSW	3,700 5,000	7 10	Boston, Mass. Raleigh, N. C.	48.8	W W	7,310 7,130	28 6	Caribou, Maine Washington, D. C.
East-Central [2]	46.2	WNW	2,500	2	Raleigh, N. C.	61.0	W	4,700	2	Washington, D. C.	72.0	W	7,110	6	Greensboro, N. C.
Southeast [3]	40.2	WNW	1,910	8	Jacksonville, Fla.	40.9	WNW	5,000	8	Atlanta, Ga.	69.2	SW	11,320	11	Jacksonville, Fla.
North-Central [4]	56.7	NW	1,970	13	Rapid City, S. Dak.	46.2	NW	4,640	6	Bismarck, N. Dak.	72.0	NW	11,110	7	Huron, S. Dak.
Central [5]	43.2	WSW	2,370	13	Des Moines, Iowa	66.2	WNW	4,150	7	Wichita, Kans.	77.2	W	9,020	5	Wichita, Kans.
South-Central [6]	35.5	NW	2,500	9	Tulsa, Okla.	48.0	W	4,430	30	Houston, Tex.	78.0	WSW	17,140	24	San Antonio, Tex.
Northwest [7]	33.2	E	260	13	Tatoosh Island, Wash.	48.0	W	3,770	11	Butte, Mont.	72.0	NNW	10,430	29	Boise, Idaho.
West-Central [8]	35.4	NE	620	11	Oakland, Calif.	44.0	WNW	4,840	6	Cheyenne, Wyo.	70.0	NW	15,140	6	Ely, Nev.
Southwest [9]	32.8	SSE	2,040	21	Bakersfield, Calif.	46.0	WNW	4,530 4,710	3	El Paso, Tex.	68.0	WNW	13,530	4	Winslow, Ariz.

[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

By BENNETT SWENSON

Widespread deficiencies of precipitation marked the month of January 1942. Every State except Florida had below normal precipitation; for the country as a whole, the weighted average precipitation was 1.55 inches, or two-thirds of normal. Floods were few and scattered; light to moderate floods occurring principally in portions of the Southeast and in the Sacramento Valley.

Atlantic Slope drainage.—Portions of the Altamaha River system were in flood at the beginning of the month as the result of heavy rains during the latter part of December. Additional moderate to heavy rains from January 2–4 served to augment the rises. Primary and secondary crests in the Ocmulgee River reached the Altamaha after the crest from the Oconee River, with resultant flood crests of considerable duration throughout the Altamaha, the river at Everett, Ga., being above flood stage from the 4th to the 19th. The total losses from the flooding during the period December 24 to January 19 has been estimated at $15,600.

Light flooding occurred in the Savannah River at Clyo, Ga., with a crest of 8.6 feet on January 4–5. No damage was reported.

Otherwise stages were generally low.

At the end of the month the snow cover was practically absent from the Delaware and Susquehanna River basins, except in the upper portions, southward. The only snow depths of consequence were in the extreme north portions of New York and New England.

East Gulf of Mexico drainage.—River stages had barely begun to subside after the heavy rains in the latter part of December when further heavy rains during the first few days of January caused a second rise in the streams. Flood stages were exceeded in the second rise in the Flint River at Albany, Ga., in the Apalachicola River at Blountstown, Fla., and in the Pearl River at Pearl River, La. Flood losses were slight; the losses in the Pearl River during the period of flooding from December 22 to January 11 was estimated at slightly less than $8,000.

Ohio River basin.—Stages were generally low throughout the month. In the Allegheny River an ice gorge formed at Parkers Landing, Pa., and held from January 21 to 25. The maximum stage reached at Parkers Landing was 13.5 feet. In the vicinity of Evansville, Ind., there was moderate to heavy ice in the Ohio River between January 6 and 15, resulting in some delay to boat traffic. Floating ice was observed at Cairo, Ill., from the 10th to the 15th.

Mississippi System (except Ohio River).—Ice in the lower Des Moines River broke up toward the close of January and an ice gorge formed in the vicinity of Chillicothe, Iowa, where considerable low land was flooded. At Ottumwa, Iowa, an estimated crest of about 10 feet was reached on the 27th.

In the Missouri River the stage of 1.3 feet at Omaha, Nebr., on January 1, 1942, is the lowest stage of record.

The Mississippi River was highest at the beginning of the month, falling during the first half and rising thereafter. Flood stage was not reached, however, except at Louisiana, Mo., due to the manipulation of Dam No. 24. Floating ice was observed in the main river from the 5th to the 14th in the reach from Cape Girardeau to New Madrid, Mo., and the upper reaches were frozen following severe cold during the first 10 days of the month.

Slight overflows occurred in the White River of Arkansas, in the St. Francis River basin at Manila, Ark., and in the Coldwater River at Coldwater, Miss., during the first half of the month. The North Canadian River at Yukon Okla., remained slightly above flood stage the entire month. No damages were reported from these overflows.

Pacific Slope drainage.—Moderate flooding occurred in the Sacramento River during the latter part of the month. The total damage from this overflow has been estimated at approximately $115,000.

The flood had its beginning on January 23, when moderate to heavy rains occurred in the morning in the upper Sacramento Valley. During the night of the 23–24th, heavy rains occurred again in the upper Sacramento and light rains in the Feather and American River basins. Heavy rains occurred in the American River basin on the 25th; elsewhere the rains were light or moderate but marked increases in temperature were favorable for snow melt in the higher mountains.

The morning of the 26th brought continued intermittent rain and high temperatures and during the night the passage of a cold front was accompanied by heavy rains over the entire Sacramento Valley. These rains caused a pronounced secondary rise in all of the streams.