METEOROLOGICAL AND CLIMATOLOGICAL DATA FOR NOVEMBER 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 radiosondes during November 1942*

Stations and elevations in meters above sea level

Altitude (meters) m. s. l.	Albuquerque, N. Mex. (1,620 m.)				Apalachicola, Fla. (8 m.)				Atlanta, Ga. (300 m.)				Bismarck, N. Dak. (505 m.)				Boise, Idaho (868 m.)				Brownsville, Tex. (6 m.)				Buffalo, N. Y. (221 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	838	9.7	35	30	1,019	16.7	77	30	986	9.8	72	28	954	−2.2	77	30	916	3.8	77	30	1,016	19.0	84	29	990	3.7	79
500					30	961	16.4	65	30	963	11.8	65									30	960	18.7	75	29	957	3.2	74
1,000					30	906	14.1	61	30	907	9.8	62	28	897	−0.8	73	30	902	4.9	71	30	906	16.3	68	29	899	0.7	74
1,500					30	854	12.2	56	30	854	8.1	59	28	842	−2.7	71	30	848	3.8	66	30	854	14.4	63	29	845	−1.3	70
2,000	30	801	10.0	36	30	804	10.5	49	30	803	7.3	55	28	790	−4.4	67	30	797	1.0	65	30	804	12.9	53	29	793	−3.4	67
2,500	30	754	7.2	36	30	757	8.9	39	30	756	5.7	49	28	741	−6.6	62	30	749	−1.8	63	30	758	10.7	48	29	744	−5.7	66
3,000	30	709	4.2	37	30	713	7.0	34	30	711	3.8	46	28	695	−9.2	61	30	703	−4.8	63	30	714	8.1	46	29	698	−7.8	66
4,000	30	626	−2.0	39	29	631	2.2	30	30	628	−1.0	42	28	610	−15.5	59	30	618	−10.9	63	30	632	2.7	42	28	613	−12.1	59
5,000	29	551	−7.8	39	29	556	−4.1	28	29	554	−6.9	39	26	534	−21.6	59	29	542	−16.7	60	30	558	−2.6	38	27	537	−17.9	52
6,000	29	484	−13.5	36	28	489	−11.1	28	28	486	−13.8	36	25	465	−28.1	59	29	474	−22.9	58	30	491	−8.9	35	27	470	−23.9	50
7,000	29	424	−20.7	35	28	429	−18.3	27	27	425	−21.4	33	25	403	−34.6	58	29	413	−29.3	56	30	430	−16.3	32	25	408	−30.3	48
8,000	29	370	−28.5	35	28	374	−26.0	27	26	370	−29.2	31	21	348	−40.9		29	358	−35.6	55	30	376	−23.8	31	25	354	−36.9	48
9,000	28	320	−36.5	35	28	325	−33.5	26	25	321	−36.4	31	19	300	−46.9		29	309	−42.2		30	327	−31.1	31	20	306	−43.2	
10,000	28	277	−44.1		27	282	−41.1		24	278	−43.8		18	257	−52.4		25	266	−48.5		30	284	−38.4	30	18	263	−48.3	
11,000	25	238	−51.4		27	242	−48.4		24	238	−50.7		16	220	−55.9		24	228	−54.3		30	244	−45.9		16	226	−52.5	
12,000	22	201	−57.0		26	208	−55.5		23	204	−56.4		13	188	−58.6		23	195	−57.8		30	210	−53.0		12	193	−56.0	
13,000	19	174	−61.0		25	177	−61.8		22	174	−60.6		12	159	−58.8		20	166	−59.4		30	179	−58.7		11	164	−56.0	
14,000	19	147	−63.5		23	150	−66.8		17	148	−63.7		11	135	−58.2		18	142	−59.5		28	152	−64.0		11	139	−56.7	
15,000	17	125	−66.5		21	127	−72.1		15	125	−66.5		10	115	−58.5		17	121	−60.5		28	129	−68.3		9	118	−58.5	
16,000	15	106	−69.0		20	107	−77.2		14	107	−69.3		7	98	−59.0		13	102	−61.2		27	109	−72.8		7	100	−60.0	
17,000	12	89	−70.3		17	90	−80.2		9	90	−70.0						12	87	−62.2		23	92	−74.8		6	85	−60.9	
18,000	11	75	−70.5		16	75	−78.5		5	76	−69.5						7	74	−62.5		21	77	−73.8					
19,000	8	63	−69.5		11	63	−73.7														14	65	−71.0					
20,000	5	53			7	53	−67.8														5	55	−66.8					

Stations and elevations in meters above sea level

Altitude (meters) m. s. l.	Caribou, Maine (191 m.)				Charleston, S. C. (14 m.)				Denver, Colo. (1,616 m.)				Detroit, Mich. (217 m.)				El Paso, Tex. (1,193 m.)				Ely, Nev. (1,908 m.)				Great Falls, Mont. (1,128)			
	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	991	−2.5	81	30	1,019	12.6	85	30	836	1.7	62	27	991	2.9	81	29	883	13.1	41	30	809	0.0	70	30	883	0.2	64
500	30	953	−2.2	77	30	962	14.7	69					27	957	2.8	78												
1,000	30	895	−3.9	71	30	906	12.0	66					27	900	0.7	73												
1,500	30	840	−5.3	70	30	854	9.6	63					27	845	−0.7	66	29	852	14.7	38					30	842	0.1	64
2,000	30	788	−6.5	67	30	803	7.6	59	30	797	4.6	58	27	794	−2.7	60	29	802	12.3	37	30	801	1.6	66	30	791	−2.4	63
2,500	30	738	−8.3	64	30	756	6.3	50	30	750	2.9	52	27	745	−4.5	56	29	755	9.4	37	30	753	1.9	57	30	742	−5.5	64
3,000	30	692	−10.8	61	30	711	4.8	45	30	704	−0.1	50	27	699	−6.7	53	29	711	6.5	37	30	707	−1.0	55	30	696	−8.5	65
4,000	30	607	−15.4	56	28	628	−0.5	42	30	621	−7.1	47	27	614	−11.5	49	29	629	1.0	36	30	623	−6.3	51	30	612	−14.9	63
5,000	30	531	−21.2	56	27	554	−6.5	36	30	545	−13.0	45	27	539	−17.2	46	29	555	−5.0	31	30	548	−12.1	48	29	535	−21.4	62
6,000	30	463	−27.3	56	27	487	−13.2	35	30	478	−19.4	43	26	471	−23.1	46	29	487	−12.0	30	28	480	−19.1	45	29	467	−28.1	59
7,000	30	402	−33.7	55	26	426	−20.9	34	30	417	−26.7	42	24	410	−29.7	45	28	427	−19.3	29	28	419	−26.0	44	28	405	−35.3	57
8,000	30	348	−39.8	54	24	371	−28.5	34	30	362	−34.1	42	20	355	−36.6		26	372	−27.1	29	25	364	−33.2	43	28	350	−41.1	
9,000	29	300	−45.9		23	321	−35.9	34	29	312	−41.6		20	307	−43.4		26	323	−35.1	29	25	315	−40.5		28	302	−46.6	
10,000	28	257	−50.2		23	278	−43.3		28	269	−48.7		16	264	−50.1		25	280	−43.0		24	272	−47.9		28	259	−51.3	
11,000	28	221	−52.8		23	240	−50.6		28	230	−54.7		16	226	−55.9		25	240	−50.6		23	233	−55.2		28	222	−54.8	
12,000	26	189	−54.9		20	205	−56.6		28	197	−58.4		15	194	−58.5		25	206	−57.3		22	198	−61.0		27	190	−56.4	
13,000	24	161	−54.6		19	174	−60.3		25	168	−59.5		15	165	−58.8		25	175	−61.2		21	169	−62.9		26	162	−56.8	
14,000	21	137	−54.5		18	148	−63.2		23	143	−60.3		13	140	−59.9		25	149	−64.1		19	143	−63.5		24	139	−57.3	
15,000	17	117	−55.2		16	126	−67.0		20	121	−61.4		11	120	−60.8		25	126	−67.4		19	121	−64.9		21	118	−57.5	
16,000	13	99	−56.3		14	106	−70.8		20	103	−63.5		9	102	−63.5		23	107	−69.8		18	103	−66.6		19	101	−58.1	
17,000	9	84	−56.2		8	90	−72.3		14	87	−64.1		6	86	−62.2		22	91	−70.6		13	86	−66.8		15	86	−58.2	
18,000	6	71	−55.6		8	76	−70.8		10	74	−62.7						17	76	−70.3						13	73	−58.1	
19,000					7	64	−68.2										12	64	−69.0						7	62	−58.1	
20,000																	5	54	−67.8									

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

Stations and elevations in meters above sea level

Altitude (meters) m. s. l.	Huntington, W. Va. (172 m.)				International Falls, Minn. (343 m.)				Joliet, Ill. (178 m.)				Lake Charles, La. (5 m.)				(1) Lakehurst, N. J. (39 m.)				Medford, Oreg. (409 m.)				Miami, Fla. (4 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	999	6.6	78	30	972	−5.0	81	30	995	4.0	83	29	1018	15.0	88	20	1013	5.6	76	30	969	7.0	87	30	1017	20.6	81
500	29	960	7.2	76	30	953	−5.1	81	30	956	3.5	81	29	961	16.2	74	20	957	4.8	58	30	958	6.9	85	30	961	20.2	78
1,000	29	903	5.2	73	30	894	−5.9	79	30	899	2.1	76	29	906	13.8	67	20	900	2.3	54	30	902	6.2	78	30	906	16.8	80
1,500	29	849	3.1	72	30	838	−6.6	77	30	845	1.4	71	29	854	12.4	60	20	846	0.8	52	28	848	3.7	77	30	855	14.4	73
2,000	29	798	1.8	66	30	786	−7.7	74	29	794	−0.3	69	29	804	11.3	48	20	795	−0.3	51	28	797	1.3	76	30	805	12.4	60
2,500	29	750	0.0	61	30	737	−9.5	72	28	746	−1.8	65	29	757	9.2	43	20	746	−2.4	51	28	748	−1.2	74	30	759	11.1	47
3,000	29	704	−2.1	59	30	691	−12.0	71	28	700	−3.9	61	29	713	7.0	40	20	701	−4.6	55	28	703	−6.3	66	30	715	9.3	42
4,000	28	621	−6.6	52	30	605	−17.6	69	26	616	−9.5	58	28	631	1.8	36	20	617	−9.8	49	22	619	−8.6	60	30	633	4.4	33
5,000	28	546	−12.4	47	30	529	−23.4	68	26	541	−15.2	58	28	557	−4.0	30	19	542	−15.2	47	22	543	−13.4	55	30	559	−1.6	31
6,000	28	478	−18.7	44	29	461	−29.7	67	24	473	−21.6	57	27	490	−10.7	27	18	475	−20.9	44	21	475	−20.0	51	29	492	−7.9	27
7,000	27	417	−25.2	42	28	399	−36.0	65	23	412	−28.3	56	27	429	−17.9	27	18	414	−27.9	40	20	414	−27.2	51	29	432	−15.0	25
8,000	27	363	−32.3	41	26	345	−41.7	----	22	358	−34.9	56	26	375	−25.4	27	17	359	−35.1	----	20	359	−34.1	50	27	378	−22.2	24
9,000	27	314	−39.7	----	21	297	−46.4	----	21	309	−41.4	----	26	326	−32.8	27	17	310	−42.5	----	19	311	−41.0	----	24	328	−29.5	24
10,000	26	271	−47.0	----	19	255	−49.6	----	21	266	−47.9	----	26	282	−40.1	----	16	267	−49.4	----	18	268	−48.4	----	24	285	−36.7	24
11,000	26	232	−53.1	----	15	219	−52.5	----	20	229	−53.2	----	25	243	−47.0	----	16	230	−55.0	----	18	230	−54.6	----	24	246	−44.0	----
12,000	25	198	−57.1	----	13	187	−53.8	----	17	196	−56.1	----	24	208	−53.6	----	14	196	−57.7	----	18	196	−57.1	----	24	212	−51.1	----
13,000	25	169	−59.1	----	12	160	−53.2	----	15	167	−56.9	----	23	178	−59.0	----	12	167	−58.6	----	14	167	−58.9	----	20	181	−57.8	----
14,000	22	144	−60.7	----	9	137	−53.4	----	12	142	−57.0	----	19	151	−63.1	----	10	143	−59.2	----	13	142	−59.6	----	19	154	−64.2	----
15,000	21	122	−62.9	----	9	116	−53.5	----	10	121	−57.6	----	17	128	−66.8	----	8	122	−60.2	----	12	121	−61.0	----	17	131	−68.9	----
16,000	15	104	−64.7	----	5	99	−52.7	----	7	103	−58.8	----	12	109	−69.9	----	7	105	−61.1	----	11	103	−62.7	----	13	110	−73.4	----
17,000	13	87	−65.6	----	----	----	----	----	----	----	----	----	10	92	−70.8	----	----	----	----	----	6	87	−62.3	----	10	93	−75.1	----
18,000	8	74	−63.9	----	----	----	----	----	----	----	----	----	7	78	−71.2	----	----	----	----	----	5	74	−62.4	----	10	78	−73.5	----
19,000	----	----	----	----	----	----	----	----	----	----	----	----	5	66	−69.7	----	----	----	----	----	----	----	----	----	5	66	−70.0	----

Stations and elevations in meters above sea level

Altitude (meters) m. s. l.	Nashville, Tenn. (180 m.)				(1) Norfolk, Va. (4 m.)				Oakland, Calif. (6 m.)				Oklahoma City, Okla. (391 m.)				Omaha, Nebr. (301 m.)				(1) Pensacola, Fla. (24 m.)				Phoenix, Ariz. (339 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	22	997	11.2	74	29	1,020	11.2	75	30	1,018	12.0	79	30	971	9.3	69	28	980	3.3	75	25	1,018	17.0	72	30	974	13.1	58
500	22	960	10.8	73	29	962	10.3	63	30	960	11.7	70	30	958	10.2	69	28	957	4.3	71	25	961	15.7	55	30	956	19.2	42
1,000	22	904	9.1	70	29	905	7.7	65	30	904	10.8	65	30	902	10.0	65	28	900	3.6	67	25	907	13.4	47	30	902	17.9	34
1,500	22	851	7.7	70	29	852	5.3	61	30	851	9.6	56	30	850	9.0	62	28	846	2.3	60	25	854	11.3	43	30	850	14.7	34
2,000	22	800	5.9	67	29	801	3.6	57	29	801	7.4	48	30	800	7.8	57	28	795	0.8	56	24	804	9.6	34	30	801	11.3	36
2,500	22	753	3.9	62	29	753	2.2	53	29	753	4.9	43	30	752	6.1	52	28	747	−1.2	52	24	757	7.9	31	30	754	8.4	36
3,000	22	708	1.3	55	29	707	0.2	47	29	708	2.3	43	30	708	3.9	47	28	701	−3.6	51	23	713	6.0	25	30	710	5.7	34
4,000	22	625	−2.7	50	27	624	−5.0	41	28	625	−3.2	44	29	625	−1.1	39	28	617	−9.3	49	21	630	0.8	30	30	628	0.8	30
5,000	22	550	−7.8	44	24	549	−11.2	36	28	550	−8.9	44	28	550	−7.5	35	28	542	−15.6	45	20	556	−5.9	32	30	554	−5.6	29
6,000	19	483	−14.2	46	21	481	−17.6	32	28	483	−15.0	44	28	483	−14.5	33	27	474	−22.3	43	15	488	−12.5	35	30	486	−12.2	29
7,000	19	423	−21.1	44	18	420	−24.4	29	27	422	−21.6	45	28	423	−22.0	32	27	412	−28.7	43	14	428	−19.9	44	27	426	−19.7	29
8,000	19	368	−28.4	43	----	----	----	----	27	368	−28.8	44	28	368	−29.5	31	26	358	−35.7	42	11	373	−27.3	----	26	372	−27.3	29
9,000	18	320	−35.7	45	----	----	----	----	27	319	−36.4	44	28	320	−36.7	31	26	309	−43.0	----	11	324	−34.8	----	26	322	−35.1	29
10,000	17	277	−43.3	----	----	----	----	----	26	276	−44.2	----	27	277	−43.6	----	26	266	−49.5	----	11	280	−42.3	----	26	279	−43.0	----
11,000	15	238	−50.1	----	----	----	----	----	24	237	−51.8	----	26	238	−50.8	----	26	228	−54.6	----	9	241	−49.8	----	25	240	−50.9	----
12,000	12	204	−55.6	----	----	----	----	----	23	202	−58.0	----	25	203	−56.6	----	25	195	−57.1	----	6	207	−56.5	----	25	205	−57.1	----
13,000	11	174	−58.9	----	----	----	----	----	23	172	−61.0	----	25	174	−59.5	----	25	166	−58.2	----	5	176	−61.6	----	25	175	−61.0	----
14,000	10	148	−61.0	----	----	----	----	----	23	146	−62.3	----	23	148	−62.0	----	24	141	−59.5	----	----	----	----	----	25	149	−63.4	----
15,000	10	126	−63.0	----	----	----	----	----	23	124	−63.9	----	22	126	−64.8	----	24	120	−60.9	----	----	----	----	----	25	126	−66.1	----
16,000	10	107	−65.1	----	----	----	----	----	21	105	−65.9	----	20	106	−67.4	----	23	102	−61.3	----	----	----	----	----	24	107	−68.7	----
17,000	10	91	−66.8	----	----	----	----	----	21	89	−67.1	----	17	90	−69.6	----	18	87	−61.8	----	----	----	----	----	22	90	−69.5	----
18,000	8	77	−68.3	----	----	----	----	----	17	76	−66.5	----	14	76	−70.1	----	13	74	−61.7	----	----	----	----	----	21	77	−69.0	----
19,000	7	65	−67.6	----	----	----	----	----	11	64	−65.5	----	11	64	−67.1	----	7	62	−60.8	----	----	----	----	----	12	65	−67.2	----
20,000	5	55	−66.4	----	----	----	----	----	5	54	−63.0	----	5	54	−63.0	----	----	----	----	----	----	----	----	----	6	55	−64.8	----

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

Altitude (meters) m. s. l.	Portland, Maine (20 m.)				St. Louis, Mo. (171 m.)				St. Paul, Minn. (225 m.)				San Antonio, Tex. (242 m.)				San Diego, Calif. (19 m.)				S. S. Marie, Mich. (221 m.)				(1) Seattle, Wash.			
	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	1,014	0.9	82	30	997	7.9	77	30	988	0.3	74	27	990	14.8	77	29	1,012	15.5	82	30	987	−0.5	86	Not summarized. Insufficient number of observations.			
500	30	956	2.1	74	30	958	7.0	75	30	955	−0.1	75	27	961	16.4	72	29	957	15.1	56	30	953	−1.0	86				
1,000	30	898	0.0	71	30	901	5.6	74	30	898	−1.2	72	27	906	14.6	67	29	902	14.1	45	30	895	−3.3	83				
1,500	30	844	−1.0	64	30	848	4.8	73	30	843	−1.5	64	27	854	13.1	64	29	850	12.5	37	30	840	−5.2	81				
2,000	30	792	−2.6	59	30	797	3.6	68	30	791	−3.4	61	27	804	11.5	56	28	801	10.6	31	30	788	−6.8	74				
2,500	30	743	−4.8	57	30	749	1.4	63	30	743	−5.2	57	27	757	10.3	47	27	754	8.6	28	30	739	−8.3	66				
3,000	30	697	−7.3	58	30	704	−0.8	57	30	696	−7.7	55	27	713	7.8	43	26	709	6.4	25	29	693	−10.5	62				
4,000	30	612	−12.4	58	30	620	−5.5	51	30	612	−13.5	57	26	631	1.5	43	26	627	0.4	26	29	607	−15.5	56				
5,000	29	537	−18.5	53	29	546	−11.2	46	30	536	−19.3	58	25	557	−3.9	36	25	552	−5.8	31	28	531	−21.4	58				
6,000	29	469	−24.8	49	29	478	−18.0	42	28	468	−25.7	58	24	490	−10.3	33	24	485	−12.8	31	26	464	−27.3	59				
7,000	29	407	−31.4	49	29	418	−25.0	41	27	406	−31.9	56	24	429	−18.0	31	24	425	−20.3	28	25	402	−33.9	59				
8,000	29	353	−38.2	49	29	363	−32.0	42	26	351	−39.0	54	24	375	−25.4	31	10	371	−28.0	----	23	348	−40.6	----				
9,000	29	304	−44.6	----	29	314	−39.6	42	23	304	−45.6	----	24	325	−32.8	30	10	323	−35.6	----	22	300	−46.1	----				
10,000	27	261	−50.2	----	29	271	−46.8	----	23	261	−51.0	----	24	282	−40.3	----	7	279	−43.4	----	20	258	−50.5	----				
11,000	25	224	−54.1	----	28	232	−53.3	----	21	224	−54.9	----	22	243	−47.9	----	----	----	----	----	19	222	−53.8	----				
12,000	22	192	−55.9	----	28	199	−57.5	----	17	191	−57.0	----	22	208	−54.0	----	----	----	----	----	16	190	−56.2	----				
13,000	20	164	−57.5	----	26	169	−59.0	----	15	163	−57.8	----	22	178	−59.6	----	----	----	----	----	14	162	−56.6	----				
14,000	16	139	−58.1	----	23	144	−60.4	----	10	139	−57.5	----	19	151	−64.3	----	----	----	----	----	8	139	−56.8	----				
15,000	13	119	−58.4	----	22	122	−61.6	----	7	119	−57.5	----	19	128	−68.9	----	----	----	----	----	6	119	−58.7	----				
16,000	8	101	−60.0	----	22	104	−63.2	----	----	----	----	----	13	108	−72.8	----	----	----	----	----	5	102	−60.4	----				
17,000	----	----	----	----	16	88	−64.6	----	----	----	----	----	7	91	−75.4	----	----	----	----	----	----	----	----	----				
18,000	----	----	----	----	12	74	−65.2	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----				
19,000	----	----	----	----	6	63	−64.1	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----				

Altitude (meters) m. s. l.	Stations and elevations in meters above sea level: Spokane, Wash. (598 m.)				Washington, D. C. (25 m.)			
	Number of observations	Pressure	Temperature	Relative humidity	Number of observations	Pressure	Temperature	Relative humidity
Surface	29	945	1.9	85	30	1017	7.8	69
500	----	----	----	----	30	960	6.8	66
1,000	29	899	0.4	80	30	903	4.5	66
1,500	29	844	−1.7	76	30	849	3.0	64
2,000	29	792	−4.2	70	30	798	1.2	65
2,500	29	744	−6.6	67	30	750	−0.2	60
3,000	29	697	−9.4	64	30	704	−2.1	58
4,000	28	612	−15.3	57	30	621	−6.6	52
5,000	27	535	−21.6	52	29	546	−11.7	45
6,000	27	466	−27.6	47	29	478	−18.0	44
7,000	27	405	−34.1	46	29	417	−24.9	43

Altitude (meters) m. s. l.	Stations and elevations in meters above sea level: Spokane, Wash. (598 m.)				Washington, D. C. (25 m.)			
	Number of observations	Pressure	Temperature	Relative humidity	Number of observations	Pressure	Temperature	Relative humidity
8,000	26	350	−39.6	46	29	362	−32.4	41
9,000	26	302	−45.3	----	28	314	−39.8	41
10,000	25	259	−49.8	----	28	271	−46.8	----
11,000	25	222	−53.0	----	25	232	−53.3	----
12,000	25	190	−54.5	----	24	198	−57.8	----
13,000	24	163	−54.5	----	22	169	−58.9	----
14,000	22	139	−54.5	----	19	144	−60.7	----
15,000	21	119	−55.2	----	19	122	−62.5	----
16,000	17	101	−55.4	----	15	104	−64.4	----
17,000	15	86	−55.4	----	11	88	−64.9	----
18,000	9	73	−55.1	----	----	----	----	----

All observations taken at 11 p. m., 75th meridian time.
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 are missing for some observations at certain levels, also, the humidity data are not used in daily observations when the temperature is below −40° C.
Stations marked with the figure one (1) are Navy Stations.

TABLE 2.—*Free-air resultant winds based on pilot-balloon observations made near 5 p. m. (75th meridian time) during November 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.	Abiline, Tex. (538 m.)			Albuquerque, N. Mex. (1,630 m.)			Atlanta, Ga. (299 m.)			Billings, Mont. (1,095 m.)			Bismarck, N. Dak. (512 m.)			Boise, Idaho (870 m.)			Brownsville, Tex. (7 m.)			Buffalo, N. Y. (220 m.)			Burlington, Vt. (132 m.)			Charleston, S. C. (17 m.)			Cincinnati, Ohio (152 m.)			Denver, Colo. (1,627 m.)			El Paso, Tex. (1,196 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	29	237	2.9	30	279	1.3	28	303	1.0	28	249	3.8	29	268	3.2	25	312	0.7	30	132	3.2	27	252	3.8	29	231	1.4	29	314	0.4	28	223	1.8	29	4	1.0	30	246	2.2
500							28	270	1.1										30	144	4.2	27	248	6.4	29	231	4.5	29	281	1.1	28	225	4.3						
1,000	29	229	4.8				28	284	1.0				29	269	4.6	25	291	0.6	25	162	3.3	19	247	9.1	27	251	6.9	28	261	1.9	24	235	8.1						
1,500	29	237	5.4				27	284	2.6	28	252	6.4	29	284	7.6	25	215	1.4	23	194	3.2	17	252	10.6	24	260	9.7	28	266	4.1	20	245	10.4				30	271	1.0
2,000	28	254	7.3	30	284	2.6	26	282	5.3	27	270	8.1	28	277	9.6	25	235	3.3	21	219	2.0	16	261	12.1	16	279	9.9	28	263	5.4	18	263	14.1	29	326	1.5	30	258	4.8
2,500	28	270	9.7	30	280	4.4	26	275	7.7	27	280	10.2	26	277	10.9	22	264	6.3	19	267	2.2	11	267	10.4	11	293	11.6	24	262	7.6	12	270	14.8	29	258	2.7	30	260	6.7
3,000	25	268	10.3	30	280	6.6	26	272	8.9	26	277	11.3	26	282	12.6	20	267	8.0	18	251	2.5							22	268	9.3	10	276	14.9	28	274	5.9	30	262	7.8
4,000	24	263	13.1	28	281	12.8	24	270	13.0	22	274	15.6	23	284	14.9	13	262	9.7	14	269	3.6							20	273	12.5				28	282	12.0	28	271	10.5
5,000	22	261	12.3	27	279	13.9	22	275	16.0	14	287	14.5	18	285	16.8	13	271	13.4	13	286	4.8							16	275	12.9				26	285	19.8	26	267	12.0
6,000	20	265	13.8	27	275	17.3	21	278	18.2	12	303	17.3	14	286	18.9	12	277	16.0	13	286	5.9							15	271	13.7				24	282	21.8	24	267	13.1
8,000	17	276	17.0	19	283	15.8	15	284	20.8										12	286	10.9							10	278	14.2				16	272	24.0	19	275	14.3
10,000	13	281	20.9	12	297	19.2													12	264	18.3													12	278	28.4	16	266	19.0
12,000	12	286	24.4																11	260	26.8																11	274	18.9
14,000	10	280	28.9																																				

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. (410 m.)			Miami, Fla. (15 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	223	1.3	30	291	1.2	28	300	1.1	27	274	2.4	29	40	2.4	26	242	1.8	30	90	1.2	25	196	2.6	24	325	1.2	30	64	3.1	30	54	1.0	30	214	2.2	27	311	3.7
500							28	275	2.7				29	45	1.9	26	231	3.6				25	203	4.6	24	321	1.2	30	58	6.1	30	91	0.6	30	207	4.4	27	299	4.9
1,000							28	260	4.2	27	260	5.2	25	280	0.9	23	241	6.0	30	102	0.5	23	220	5.9	24	198	1.5	28	52	4.6	28	105	0.3	29	223	4.9	25	295	7.3
1,500							28	276	6.5	26	265	9.0	25	274	2.9	22	255	8.4	30	223	1.4	21	243	8.6	24	225	4.5	27	60	3.3	28	305	1.5	27	243	7.1	21	293	10.3
2,000	30	224	1.9	30	275	1.5	25	285	8.8	24	267	10.9	23	276	5.3	16	271	13.1	30	250	3.3	19	254	10.3	21	243	5.6	23	50	2.6	27	282	3.2	24	262	8.6	15	288	10.7
2,500	30	237	3.3	30	232	2.9	22	280	10.2	22	270	12.0	22	275	7.1	13	280	15.8	30	264	4.5	18	260	11.4	20	256	7.4	20	2	2.2	24	274	5.7	22	271	10.6	12	295	14.3
3,000	29	256	4.4	30	234	5.4	19	274	13.0	20	274	13.1	19	276	8.3	13	285	18.9	30	271	6.0	16	278	13.7	17	262	8.0	18	337	1.9	23	266	7.5	21	266	12.8			
4,000	24	272	10.1	27	272	11.2	19	283	15.9	13	279	14.5	15	280	11.4				28	287	9.0	13	283	15.9	13	287	12.4	16	287	2.8	20	277	9.8	14	284	15.3			
5,000	20	280	13.3	18	288	15.9	17	278	18.4	11	284	18.5	15	276	11.9				28	285	11.5				10	290	14.6	16	272	2.5	19	273	10.7	14	280	19.1			
6,000	19	279	17.6	12	281	14.6	15	282	20.2				13	283	13.0				28	285	14.1							13	285	4.3	15	272	11.1	13	282	20.2			
8,000	16	290	20.2				12	276	21.1										25	286	18.6							10	287	14.0	14	277	17.5	10	284	25.1			
10,000	14	292	21.0																21	293	22.0										12	280	22.8						
12,000	12	282	25.1																17	297	22.9										10	275	29.6						
14,000																			11	310	21.3																		

Altitude (meters) m. s. l.	Oakland, Calif. (8 m.)			Oklahoma City, Okla. (402 m.)			Omaha, Nebr. (306 m.)			Phoenix, Ariz. (388 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. (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	29	271	2.5	27	257	2.1	27	257	1.1	30	218	0.5	29	315	1.5	23	204	3.0	28	244	1.1	30	164	0.8	29	284	3.6	19	310	0.9	26	199	3.3	24	214	1.6	28	267	2.4
500	29	341	0.9	27	248	2.3	27	216	1.6	30	207	0.8				23	217	6.0	28	237	1.9	30	176	2.2	29	294	2.6	19	256	1.9	26	195	4.3				28	257	3.9
1,000	24	300	1.5	26	230	4.5	25	222	3.5	30	174	1.0	29	316	1.8	20	225	8.0	28	250	4.3	28	190	2.8	28	332	0.8	18	266	5.4	21	199	7.1	24	202	3.0	27	273	4.8
1,500	23	294	4.1	25	245	5.2	24	233	6.0	30	206	1.5	29	297	5.0	20	245	10.1	23	271	7.1	26	217	3.4	28	32	1.3	13	262	6.8	17	205	7.7	16	188	5.0	26	281	7.4
2,000	21	294	4.3	23	260	6.8	24	254	7.5	30	229	2.1	29	284	7.0	17	269	11.9	22	271	7.7	24	238	5.8	28	344	2.5	11	267	9.1	13	217	5.7	11	214	5.5	23	282	11.2
2,500	20	290	5.2	22	266	10.0	21	264	9.7	29	260	3.3	28	284	9.0	16	277	13.6	19	278	10.3	22	252	6.6	28	317	4.0				12	238	6.0				21	285	12.7
3,000	19	289	8.1	22	271	12.0	19	265	12.4	29	265	4.7	27	284	12.1	16	275	14.6	15	288	12.2	20	263	6.6	27	309	5.5				11	253	8.1				20	279	14.5
4,000	18	278	9.7	21	270	16.0	18	279	15.9	28	277	8.1	25	279	14.0	15	283	16.1				18	276	8.9	24	286	6.8										17	282	18.3
5,000	18	287	12.0	20	277	17.1	15	277	16.9	27	279	9.8	18	286	15.5	11	280	18.0				16	269	11.2	21	278	8.5										12	280	22.5
6,000	18	284	15.8	20	281	18.9	14	284	22.6	27	277	12.6	14	292	16.8	11	287	22.0				15	273	11.8	15	271	10.6										10	275	24.9
8,000	14	270	15.2	17	282	21.5	10	284	27.9	23	277	14.8										13	279	14.3															
10,000	10	261	13.7	15	278	23.5				19	269	16.9										10	286	19.4															
12,000										16	275	19.7																											
14,000										11	278	22.8																											

TABLE 3.—*Maximum free-air wind velocities (M. P. S.) for different sections of the United States, based on pilot-balloon observations during November 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]	43.2	NW	2,500	28	Boston, Mass	58.0	NW	2,980	28	Boston, Mass	67.0	NNW	8,520	15	Caribou, Maine.
East-Central [2]	36.0	WNW	2,090	13	Washington, D. C	48.0	NW	4,530	27	Knoxville, Tenn	76.0	WSW	9,840	11	Greensboro, N. C.
Southeast [3]	30.2	SW	2,450	24	Charleston, S. C	34.4	WNW	4,610	27	Birmingham, Ala	66.0	W	13,080	13	Tampa, Fla.
North-Central [4]	44.4	NW	1,430	12	Duluth, Minn	55.0	NW	4,820	12	Fargo, N. Dak	74.4	NW	10,370	8	Detroit, Mich.
Central [5]	38.3	SW	1,240	16	Indianapolis, Ind	43.2	WNW	3,150	12	Joliet, Ill	63.0	W	7,280	17	Omaha, Nebr.
											63.0	W	8,910	10	St. Louis, Mo.
South-Central [6]	40.8	W	2,430	30	Abilene, Tex	35.3	WSW	4,960	16	Amarillo, Tex	65.0	WSW	11,410	30	Oklahoma City, Okla.
Northwest [7]	35.0	SSW	1,540	2	Seattle, Wash	50.4	W	3,860	29	Ellensburg, Wash	56.0	NW	5,770	25	Pocatello, Idaho.
West-Central [8]	41.9	W	2,480	17	Cheyenne, Wyo	58.0	SW	4,340	3	Ely, Nev	70.0	NNW	10,200	29	Pueblo, Colo.
Southwest [9]	35.8	W	2,480	30	El Paso, Tex	40.9	W	4,960	17	Albuquerque, N. Mex	68.0	W	12,050	9	Albuquerque, N.Mex.

[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

Precipitation during November was abnormally heavy in a large northwestern area, including northern California, and also from the central Mississippi Valley and Lake Region eastward. The month was abnormally dry in the South, especially the Southwest where very little precipitation occurred; New Mexico had only 3 percent of normal rainfall for the month.

The only flooding of consequence during the month was in the Willamette River Basin in Oregon. There was considerable flooding of lowlands and record or near record stages were reached in some cases.

Flooding in the Willamette Basin occurred at three distinct periods near the end of the month, namely, November 23–25; 27–28; and 29–30. In the first period, stages were generally higher in the lower basin while in the last period the highest stages were in the upper basin.

The Ohio River was at a low stage at the beginning of the month but several rises occurred thereafter and at the end of the month moderate stages existed. In the Mississippi River, seasonable moderate stages prevailed, the highest stages being reached near the end of the month.

The extreme upper Mississippi River was reported closed to navigation on November 26, and all pools frozen over by December 2.

FLOOD-STAGE REPORT FOR NOVEMBER 1942

River and station	Flood stage	Above flood stages—dates		Crest	
		From—	To—	Stage	Date
MISSISSIPPI SYSTEM					
Upper Mississippi Basin	*Feet*			*Feet*	
Illinois: Beardstown, Ill	14	29	30	14.2	29–30
Mississippi: Louisiana, Mo	12	22	23	12.	22
				12.1	23
Ohio Basin					
West Fork White: Edwardsport, Ind	12	21	21	12.7	21
		24	26	12.7	25
Arkansas Basin					
Black: Black Rock, Ark	14	23	24	14.6	23
Lower Mississippi Basin					
St. Francis: Fisk, Mo	20	26	26	20.3	26
WEST GULF OF MEXICO DRAINAGE					
East Fork of Trinity: Rockwall (near), Tex	10	6	8	10.6	
PACIFIC SLOPE DRAINAGE					
Columbia Basin					
Middle Fork of Willamette: Eula, Oreg	13	27	27	13.4	27
		29	30	17.0	29
Coast Fork of Williamette: Saginaw, Oreg	9	29	29	9.5	29
McKenzie: Leaburg, Oreg	12	23	24	15.9	23
		27	28	17.8	27
		29	(1)	19.4	29
Santiam: Jefferson, Oreg	13	23	25	20.8	24
		26	29	19.8	27
		29	(1)	19.6	30
Luckiamute: Suver, Oreg	25	24	25	28.4	24
		27	(1)	28.5	27
South Yamhill: Willamina, Oreg	8	23	23	10.3	23
		26	26	9.2	26
Long Tom: Monroe, Oreg	10	24	25	11.5	24
		27	28	10.4	28
Willamette: Eugene, Oreg	12	27	27	12.0	27
		30	30	14.6	30
Harrisburg, Oreg	10	24	25	13.8	24–25
		27	(1)	15.7	30
Albany, Oreg	20	29	29	20.3	29
Salem, Oreg	20	30	(1)	21.3	30
Oregon City, Oreg	12	26	(1)	13.0	29–30

[1] Continued into following month.