SPECIAL SERIES OF SOUNDING-BALLOON OBSERVATIONS MADE DURING THE WINTER OF 1927–28

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[Weather Bureau, Washington, 1930]

Table 1 contains a summary of the results obtained from sounding balloons released from 12 selected Weather Bureau stations located in the southern and southwestern sections of the country. In addition to these there were 101 kite flights made at frequent intervals during the same periods at the 5 aerological stations and 38 airplane observations at 5 Naval Air Stations. The kite and airplane data, however, are not published at this time, owing to lack of space, but are available at the central office of the Weather Bureau. It is planned to publish the results of a detailed study of all these observations as soon as practicable.

Table 2 contains the tabulated data for the sounding-balloon observations.

TABLE 1.—*Summary of sounding-balloon observations*

DECEMBER, 1927

Station	Date	Time of release, 75th mer.	Stratosphere: Height of base, meters, M. S. L.	Stratosphere: Temperature at base	Maximum height reached, meters, M. S. L.	Minimum temperature recorded	Meteorograph found at—
				° C.		° C.	
Columbia, Mo	30	8:00 p.	10,200	−54.0	10,200	−54.0	Colchester, Ill.
	31	7:40 a.			6,548	−44.4	East Hardin, Ill.
Denver, Colo	30	8:10 p.			9,659	−48.8	Galatia, Colo.
	31	8:00 a.			10,082	−53.5	Haswell, Colo.
Fort Worth, Tex	30	8:00 p.	Record obliterated				Alba, Tex.
	31	8:00 a.	Not returned				
Los Angeles, Calif	30	8:21 p.	Not returned				
	31	7:58 a.	Not returned				
Memphis, Tenn	30	8:16 p.	Not returned				
	31	7:50 a.	Not returned				
Montgomery, Ala	30	8:01 p.	13,382	−61.3	15,173	−61.8	Stony Creek, Va.
	31	8:00 a.	11,250	−61.2	18,255	−61.2	Athens, Ga.
Nashville, Tenn	30	8:35 p.			1,746	6.7	Hendersonville, Tenn.
	31	8:12 a.			3,835	−9.0	Martha, Tenn.
New Orleans, La	30	8:35 p.	12,585	−65.1	12,830	−65.4	Tyson, Ala.
	31	8:07 a.			8,434	−36.2	Bay Minette, Ala.
Oklahoma City, Okla.	30	8:12 p.	14,917	−63.1	16,183	−64.2	Wagoner, Okla.
	31	8:55 a.	Not returned				
Roswell, N. Mex	30	7:54 p.			5,086	−17.3	Lovington, N. Mex.
	31	7:52 a.	14,888	−75.1	15,952	−75.1	Mertzon, Tex.
San Antonio, Tex	30	8:18 p.			2,100	6.3	San Antonio, Tex.
	31	8:09 a.	Not returned				
Vicksburg, Miss	30	7:58 p.	Record obliterated				Vicksburg, Miss.
	31	7:59 a.	10,600	−57.7	10,600	−57.7	Ethelsville, Ala.

FEBRUARY, 1928

Station	Date	Time of release, 75th mer.	Height of base, meters, M. S. L.	Temperature at base	Maximum height reached, meters, M. S. L.	Minimum temperature recorded	Meteorograph found at—
Columbia, Mo	15	8:00 p.	8,736	−62.1	13,827	−62.1	Silex, Mo.
	16	8:00 a.			9,606	−48.8	Bellflower, Mo.
	16	7:56 p.	Record obliterated				Nebo, Ill.
Denver, Colo	15	7:52 p.	Not returned				
	16	8:00 a.			2,488	−20.9	Elizabeth, Colo.
	16	7:49 p.	Not returned				
Fort Worth, Tex	15	8:00 p.	Record obliterated				Genoa, Ark.
	16	8:00 a.			5,247	−16.3	Allen, Tex.
	16	8:00 p.	Record obliterated				Irving, Tex.
Los Angeles, Calif	15	8:06 p.	Record obliterated				Tijuana, Mex.
	16	8:22 a.			10,069	−55.9	Tecate, Calif.
	16	7:47 p.			8,130	−41.8	San Clemente Island, Calif.
Memphis, Tenn	15	8:24 p.	Record obliterated				Nunnelly, Tenn.
	16	7:50 a.	Not returned				
	16	7:56 p.	Not returned				
Montgomery, Ala	15	8:00 p.	Not returned				
	16	8:08 a.	13,155	−66.0	18,129	−63.4	Deepstep, Ga.
	16	8:00 p.			10,424	−47.6	Mayesville, S. C.
Nashville, Tenn	15	8:09 p.			5,803	−32.8	Mount Juliet, Tenn.
	16	7:55 a.			6,250	−31.5	Silver Springs, Tenn.
	16	8:19 p.			1,473	−6.3	Tulip Grove, Tenn.
New Orleans, La	15	8:03 p.			5,586	−10.4	Long Beach, Miss.
	16	7:43 a.			7,039	−18.8	Milton, Fla.
	16	8:02 p.	Not returned				

TABLE 1.—*Summary of sounding-balloon observations*—Continued

FEBRUARY, 1928—Continued

Station	Date	Time of release, 75th mer.	Height of base, meters, M. S. L.	Temperature at base	Maximum height reached, meters, M. S. L.	Minimum temperature recorded	Meteorograph found at—
				°C		°C	
Oklahoma City, Okla.	15	8:45 p.			9,507	−51.5	Coweta, Okla.
	16	8:17 a.	7,951	−50.6	13,745	−52.9	Mounds, Okla.
	16	8:30 p.			8,406	−44.5	Bruner, Mo.
Roswell, N. Mex	15	7:53 p.	Not returned				
	16	7:55 p.	Not returned				
San Antonio, Tex	15	8:07 p.	14,544	−70.9	14,544	−70.9	Cleveland, Tex.
	16	8:09 a.			8,945	−36.7	Huntsville, Tex.
	16	7:40 p.	Not returned				
Vicksburg, Miss	15	8:05 p.			10,165	−45.8	Northport, Ala.
	16	8:00 a.	Record obliterated				Columbiana, Ala.
	16	7:59 p.	12,208	−65.2	17,055	−65.2	Gadsden, Ala.

MARCH, 1928

Station	Date	Time of release, 75th mer.	Height of base, meters, M. S. L.	Temperature at base	Maximum height reached, meters, M. S. L.	Minimum temperature recorded	Meteorograph found at—
Columbia, Mo	14	7:58 p.			7,781	−38.1	Troy, Mo.
	15	7:58 a.	11,425	−57.3	15,981	−57.3	Bowling Green, Mo.
Denver, Colo	14	7:49 p.	9,710	−58.1	15,380	−58.8	Roggen, Colo.
	15	7:49 a.	11,373	−58.1	17,563	−58.1	Denver, Colo.
	15	7:59 p.	9,383	−54.8	17,615	−59.1	Castle Rock, Colo.
Fort Worth, Tex	14	8:15 p.			8,758	−36.3	Dodd City, Tex.
	15	8:15 a.	Record obliterated				Van Alstyne, Tex.
	15	8:05 p.	Record obliterated				Rowlett, Tex.
Los Angeles, Calif	14	7:53 p.			8,596	−38.6	San Diego, Calif.
	15	7:49 a.	Not returned				
Memphis, Tenn	14	8:16 p.	Not returned				
Montgomery, Ala	14	8:00 p.	10,403	−58.6	11,070	−60.2	Ideal, Ga.
	15	8:00 a.	Not returned				
	15	8:00 p.	16,141	−60.3	19,546	−61.0	Meansville, Ga.
Nashville, Tenn	14	8:20 p.	Not returned				
	15	8:18 a.	Record obliterated				West Nashville, Tenn.
Oklahoma City, Okla.	14	8:17 p.	Not returned				
	15	8:08 a.	10,905	−56.7	14,663	−57.1	Fairfax, Okla.
	15	8:05 p.	13,349	−56.6	15,643	−59.5	Skiatook, Okla.
Roswell, N. Mex	14	7:52 p.	15,062	−62.0	20,256	−65.7	Oilton, Tex.
	15	7:54 a.			13,956	−52.4	Cap Rock, N. Mex.
San Antonio, Tex	14	8:35 p.			6,188	−19.9	Maxwell, Tex.
	15	7:55 a.			4,039	−0.3	Sattler, Tex.
Vicksburg, Miss	14	7:57 p.	Record obliterated				Union, Miss.

TABLE 2.—*Tabulated data*

COLUMBIA, MO.

[90th Mer.]

DECEMBER 30, 1927

Time	Altitude, M. S. L.	Pressure	Temperature	$\frac{\Delta t}{100 \text{ m.}}$	Humidity: Relative	Humidity: Vapor pressure	Wind: Direction	Wind: Velocity	Remarks
P. m.	M.	Mb.	°C.	°C.	P. ct.	Mb.		M. p. s.	
7:00	227	985.8	−9.4		93	2.57	n.	7.6	10 Nb., NE. Cold, snowy, stormy night. Clouds moving swiftly from NE at 6:00 p. m. Thought to be same at time of release. Superadiabatic.
	250	982.9	−9.7						
	500	951.3	−12.8						
	750	920.5	−15.8						
7:03	821	912.0	−16.7	1.23					
	1,000	890.8	−13.6						
	1,250	862.0	−9.2						

TABLE 2.—*Tabulated data*—Continued

COLUMBIA, MO.—Continued

[90th Mer.]

DECEMBER 30, 1927—Continued

Time	Altitude, M. S. L.	Pressure	Temperature	$\frac{\Delta t}{100\,m.}$	Humidity: Relative	Humidity: Vapor pressure	Wind: Direction	Wind: Velocity	Remarks
P. m.	M.	Mb.	°C.	°C.	P. ct.	Mb.		M. p. s.	
7:05	1,299	856.6	−8.3	−1.76					Inversion.
	1,500	834.7	−8.3						
	2,000	782.6	−8.1						
	2,500	734.0	−8.0						
7:12	2,647	720.2	−8.0	−0.02					Inversion.
	3,000	688.1	−9.6						
	3,500	644.8	−11.8						
	4,000	604.2	−14.0						
7:19	4,082	597.6	−14.4	0.45					
	4,500	565.9	−17.5						
	5,000	529.2	−21.3						
7:25	5,134	519.3	−22.3	0.75					
	6,000	461.1	−29.2						
7:33	6,362	438.3	−32.0	0.79					
7:37	6,762	414.2	−36.6	1.15					Superadiabatic.
	7,000	400.2	−37.0						
7:42	7,546	369.8	−38.0	0.18					
	8,000	346.4	−41.0						
7:48	8,575	318.3	−44.8	0.66					
	9,000		−47.2						
	10,000		−52.9						
7:59	10,200		−54.0	0.57					Base of stratosphere.

DECEMBER 31, 1927

Time	Altitude, M. S. L.	Pressure	Temperature	$\frac{\Delta t}{100\,m.}$	Humidity: Relative	Humidity: Vapor pressure	Wind: Direction	Wind: Velocity	Remarks
A. m.									
6:40	227	994.9	−17.0		73	1.01	nw.	7.6	10 Nb., W.
	250	991.4	−17.3						
	500	958.3	−20.5						
6:44	723	930.4	−23.3	1.27					Superadiabatic.
	750	927.2	−22.6						
	1,000	897.0	−16.5						
	1,250	867.7	−10.3						
6:48	1,343	857.1	−8.0	−2.46					Inversion.
	1,500	839.8	−9.0						
	2,000	787.0	−12.1						
	2,500	737.0	−15.3						
6:54	2,516	735.5	−15.4	0.63					
	3,000	689.8	−18.8						
6:58	3,295	662.6	−20.8	0.69					
	3,500	644.7	−22.2						
	4,000	602.1	−25.5						
	4,500	562.0	−28.9						
	5,000	524.0	−32.2						
7:09	5,208	508.5	−33.6	0.67					
	6,000	453.9	−40.0						
7:23	6,548	419.1	−44.4	0.81					

DENVER, COLO.

[105th Mer.]

DECEMBER 30, 1927

Time	Altitude, M. S. L.	Pressure	Temperature	$\frac{\Delta t}{100\,m.}$	Humidity: Relative	Humidity: Vapor pressure	Wind: Direction	Wind: Velocity	Remarks
P. m.									
6:10	1,610	836.4	−14.0		89	1.63	nne.	3.6	10 Nb., N.
6:11	1,747	821.4	−16.4	1.75					Superadiabatic.
	2,000	794.0	−17.1						Light snow falling.
6:13	2,135	780.0	−17.5	0.28					
6:14	2,375	755.6	−13.5	−1.67					Inversion.
	2,500	743.1	−13.8						
6:15	2,610	732.6	−14.0	0.21					
	3,000	695.7	−16.7						
	3,500	650.5	−20.2						
6:21	3,601	641.7	−20.7	0.70					
	4,000	607.7	−24.0						
6:25	4,346	579.8	−26.7	0.78					
	4,500	567.7	−26.7						
6:29	4,991	530.2	−26.7	0.00					Isothermal.
	5,000	529.6	−26.8						
	6,000	461.8	−33.2						
	7,000	399.3	−39.8						
6:45	7,360	378.1	−42.1	0.65					
	8,000	343.6	−46.2						
6:58	8,548	316.5	−49.7	0.64					
	9,000	295.8	−49.3						
7:16	9,659	267.5	−48.8	−0.08					Inversion.

TABLE 2.—*Tabulated data*—Continued

DENVER, COLO.—Continued

[105th Mer.]

DECEMBER 31, 1927

Time	Altitude, M. S. L.	Pressure	Temperature	$\frac{\Delta t}{100\,m.}$	Humidity: Relative	Humidity: Vapor pressure	Wind: Direction	Wind: Velocity	Remarks
A. m.	M.	Mb.	°C.	°C.	P. ct.	Mb.		M. p. s.	
6:00	1,610	841.8	−21.6		71	0.63	ene.	2.2	3 St., W.
	2,000	798.3	−23.7		71	0.52			
6:03	2,357	760.0	−25.6	0.54	71	0.43			
	2,500	745.4	−23.6		71	0.53			
6:04	2,634	731.6	−21.8	−1.37	71	0.62			Inversion.
	3,000	696.0	−22.6		71	0.58			
	3,500	650.0	−23.7		71	0.52			
	4,000	607.2	−24.8		71	0.46			
6:09	4,075	600.9	−25.0	0.22	71	0.45			
	4,500	567.1	−26.1		71	0.40			
	5,000	529.4	−27.3		71	0.36			
6:14	5,733	477.7	−29.2	0.25	71	0.30			Relative humidity record probably inaccurate; pen seems to have stuck.
	6,000	459.7	−30.9		71	0.25			
6:15	6,054	456.5	−31.2	0.62	71	0.24			
	7,000	399.4	−33.2		71	0.19			
6:20	7,218	387.3	−33.7	0.21	71	0.18			
	8,000	345.8	−39.8		71	0.09			
	9,000	298.0	−47.6		71	0.04			
6:26	9,018	297.4	−47.7	0.78	71	0.04			
	10,000	256.1	−53.1		71	0.02			
6:31	10,082	253.0	−53.5	0.54	71	0.02			

MONTGOMERY, ALA.

[90th mer.]

DECEMBER 30, 1927

Time	Altitude, M. S. L.	Pressure	Temperature	$\frac{\Delta t}{100\,m.}$	Humidity: Relative	Humidity: Vapor pressure	Wind: Direction	Wind: Velocity	Remarks
P. m.									
7:01	68	1002.7	18.9		81	17.70	s.	5.8	10 St. Cu., S.
	250	981.5	17.8		86	17.54			
7:03	439	960.2	16.6	0.62	92	17.39			
	500	953.3	16.3		91	16.87			
7:04	735	927.5	15.2	0.47	85	14.69			
	750	925.8	15.2		86	14.86			
7:05	914	908.2	15.1	0.06	91	15.62			Isothermal.
	1,000	899.3	14.8		89	14.99			
	1,250	873.2	13.8		82	12.94			
7:06	1,276	870.2	13.7	0.39	81	12.70			
	1,500	847.7	12.4		84	12.10			
	2,000	798.3	9.5		90	10.68			
7:10	2,040	794.4	9.3	0.58	91	10.65			
	2,500	751.3	6.2		71	6.73			
7:12	2,701	733.1	4.8	0.68	62	5.21			
	3,000	707.3	3.2		63	4.84			
	3,500	664.6	0.4		64	4.03			
7:18	3,846	636.4	−1.5	0.55	65	3.51			
	4,000	624.3	−2.5		65	3.23			
	4,500	586.4	−5.7		67	2.55			
	5,000	550.3	−8.9		69	1.99			
7:25	5,414	521.5	−11.5	0.64	70	1.60			
	6,000	483.8	−14.9		71	1.20			
	7,000	423.2	−20.7		72	0.71			
7:32	7,257	408.7	−22.2	0.58	72	0.60			
	8,000	368.8	−27.6		72	0.35			
	9,000	321.3	−34.8		72	0.17			
7:39	9,061	318.5	−35.2	0.72	72	0.15			
	10,000	278.9	−42.6		71	0.07			
7:45	10,513	258.5	−46.7	0.79	70	0.04			
	11,000	240.5	−49.2		69	0.03			
	12,000	206.5	−54.3		67	0.02			
	13,000	177.3	−59.4		66	0.01			
7:57	13,382	167.3	−61.3	0.51	65	0.01			Base of stratosphere.
	14,000	152.1	−61.5		63	0.01			
	15,000	130.0	−61.8		60				
8:08	15,173	126.3	−61.8	0.03	60				

DECEMBER 31, 1927

Time	Altitude, M. S. L.	Pressure	Temperature	$\frac{\Delta t}{100\,m.}$	Humidity: Relative	Humidity: Vapor pressure	Wind: Direction	Wind: Velocity	Remarks
A. m.									
7:00	68	1,000.2	16.1		89	16.29	sw.	2.2	9 St., W.
	250	979.0	16.1		72	13.36	wnw.	7.6	
	500	950.6	16.1		50	9.15	nw.	16.7	
7:03	612	938.2	16.1	0.00	40	7.32	nw.	21.0	Isothermal
	750	922.7	15.0		45	7.68	nw.	21.2	
	1,000	895.6	12.9		53	7.89	wnw.	22.2	
	1,250	869.2	10.9		62	8.08	wnw.	21.5	
	1,500	843.6	8.9		70	7.98	wnw.	17.4	

TABLE 2.—*Tabulated data*—Continued

MONTGOMERY, ALA.—Continued

[90th mer.]

DECEMBER 31, 1927—Continued

Time	Altitude, M. S. L.	Pressure	Temperature	$\frac{\Delta}{100\,m.}$	Humidity: Relative	Humidity: Vapor pressure	Wind: Direction	Wind: Velocity	Remarks
P. m.	M.	Mb.	°C.	°C.	P. ct.	Mb.		M. p. s.	
7:09	1,926	801.8	5.4	0.81	86	7.62	w.	17.4	
	2,000	794.7	5.3		84	7.48			
	2,500	747.5	4.4		73	6.10			
7:11	2,601	738.4	4.2	0.18	75	6.19			
	3,000	703.0	1.6		80	5.49			
	3,500	660.7	−1.3		87	4.78			
7:16	3,718	643.1	−2.6	0.58	90	4.44			
	4,000	620.3	−3.3		70	3.26			
7:18	4,136	609.9	−3.7	0.26	60	2.70			
	4,500	582.6	−6.8		67	2.32			
	5,000	546.4	−11.1		76	1.81			
7:24	5,475	513.3	−15.1	0.85	85	1.40			
7:25	5,738	495.8	−14.9	−0.08	65	1.10			Inversion.
	6,000	478.9	−17.0		64	0.89			
	7,000	419.5	−24.8		61	0.40			
7:32	7,524	390.2	−28.9	0.78	60	0.26			
	8,000	365.2	−33.2		59	0.16			
	9,000	316.7	−42.2		56	0.05			
7:37	9,187	308.1	−43.9	0.90	55	0.04			Adiabatic.
	9,950	274.8	−55.1	1.47	50	0.01			Adiabatic.
	10,000	272.7	−55.3		53	0.01			
	11,000	233.9	−60.0		50				
7:50	11,250	224.8	−61.2	0.47	50				Base of stratosphere.
	12,000	198.5	−61.0		50				
	13,000	167.7	−60.8		50				
	14,000	142.0	−60.5		50				
	15,000	120.1	−60.3		50				
	16,000	102.9	−60.0		50				
	17,000	89.0	−59.8		50				
	18,000	77.6	−59.6		50				
8:14	18,255	75.2	−59.5	−0.02	50				

NASHVILLE, TENN.

[90th mer.]

DECEMBER 30, 1927

Time	Altitude, M. S. L.	Pressure	Temperature	$\frac{\Delta}{100\,m.}$	Humidity: Relative	Humidity: Vapor pressure	Wind: Direction	Wind: Velocity	Remarks
P. m.									
7:35	191	988.4	15.3		88	15.30	s.	8.9	10 St. Cu., S.
	250	981.8	14.8		89	14.99			
	500	952.7	12.7		94	13.81			
7:38	525	950.1	12.5	0.84	95	13.78			
7:39	579	943.9	13.2	−1.29	80	12.14			Inversion.
	750	924.6	12.2		76	10.80			
	1,000	897.4	10.9		69	9.00			
	1,250	871.3	9.5		63	7.48			
	1,500	845.2	8.1		56	6.05			
7:52	1,746	820.5	6.7	0.56	50	4.90			

DECEMBER 31, 1927

Time	Altitude, M. S. L.	Pressure	Temperature	$\frac{\Delta}{100\,m.}$	Humidity: Relative	Humidity: Vapor pressure	Wind: Direction	Wind: Velocity	Remarks
A. m.									
7:12	191	989.5	1.8		94	6.53	nw.	12.5	10 St. Cu., NW.
	250	982.3	1.5		94	6.40			
	500	951.9	0.0		96	5.87			
	750	923.0	−1.5		97	5.24			
	1,000	894.6	−3.0		99	4.72			
7:16	1,155	877.0	−3.9	0.59	100	4.42			
	1,250	866.6	−3.4		100	4.61			
	1,500	840.2	−2.0		100	5.18			
7:18	1,548	834.8	−1.7	−0.56	100	5.31			Inversion.
7:19	1,678	821.6	1.8	−2.69	90	6.26			Inversion.
	2,000	789.3	2.6		81	5.96			
7:20	2,044	785.0	2.7	−0.25	80	5.94			Inversion.
	2,500	741.8	−0.2		78	4.69			
	3,000	696.6	−3.3		75	3.49			
7:25	3,024	694.6	−3.5	0.63	75	3.44			
	3,500	653.7	−6.7		60	2.09			
7:29	3,835	626.3	−9.0	0.68	50	1.43			

NEW ORLEANS, LA.

[90th mer.]

DECEMBER 30, 1927

Time	Altitude, M. S. L.	Pressure	Temperature	$\frac{\Delta}{100\,m.}$	Humidity: Relative	Humidity: Vapor pressure	Wind: Direction	Wind: Velocity	Remarks
P. m.									
7:35	17	1,008.8	21.5		94	24.12	s.	2.2	10 St., SW.
7:36	234	983.8	20.4	0.51	96	23.02			
	250	981.8	20.3		96	22.88			
	500	953.7	18.8		92	19.97			
	750	926.3	17.2		88	17.27			
	1,000	899.8	15.7		85	15.16			

TABLE 2.—*Tabulated data*—Continued

NEW ORLEANS, LA.—Continued

[90th mer.]

DECEMBER 30, 1927—Continued

Time	Altitude, M. S. L.	Pressure	Temperature	$\frac{\Delta}{100\,m.}$	Humidity: Relative	Humidity: Vapor pressure	Wind: Direction	Wind: Velocity	Remarks
P. m.	M.	Mb.	°C.	°C.	P. ct.	Mb.		M. p. s.	
7:40	1,190	880.0	14.5	0.62	82	13.54			
	1,250	873.6	14.1		81	13.03			
	1,500	848.2	12.6		79	11.53			
	2,000	799.0	9.6		73	8.72			
7:45	2,297	771.1	7.8	0.61	70	7.41			
	2,500	752.6	7.5		59	6.12			
7:46	2,653	738.8	7.2	0.17	50	5.08			
	3,000	708.1	4.3		50	4.15			
7:50	3,484	667.0	0.3	0.83	50	3.12			
	3,500	665.5	0.2		49	3.04			
	4,000	625.6	−2.4		26	1.30			
7:52	4,014	624.5	−2.5	0.53	25	1.24			
7:53	4,312	601.4	−2.6	0.03	22	1.08			Isothermal.
	4,500	587.2	−4.6		21	0.88			
	5,000	551.0	−10.0		17	0.45			
7:57	5,013	550.1	−10.1	1.07	17	0.44			Superadiabatic.
7:58	5,425	522.0	−11.1	0.24	17	0.40			
	6,000	483.8	−15.7		16	0.25			
8:04	6,559	449.7	−20.1	0.79	15	0.15			
	7,000	424.0	−23.6		15	0.11			
8:08	7,581	391.9	−28.2	0.79	16	0.07			
	8,000	369.3	−33.2		15	0.04			
8:13	8,198	359.1	−35.5	1.18	14	0.03			Superadiabatic.
8:14	8,484	344.6	−35.4	−0.03	16	0.03			Inversion.
	9,000	320.4	−39.5		17	0.02			
	10,000	277.6	−47.4		18	0.01			
8:20	10,152	271.5	−48.6	0.79	18	0.01			
	11,000	239.5	−54.3		18				
8:26	11,028	238.1	−54.5	0.67	18				
	12,000	204.8	−60.5		18				
8:31	12,035	203.8	−60.7	0.62	18				
8:35	12,585	187.4	−65.1	0.80	18				Base of stratosphere.
8:36	12,830	180.0	−65.4	0.12	18				

DECEMBER 31, 1927

Time	Altitude, M. S. L.	Pressure	Temperature	$\frac{\Delta}{100\,m.}$	Humidity: Relative	Humidity: Vapor pressure	Wind: Direction	Wind: Velocity	Remarks
A. m.									
7:07	17	1,011.5	14.8		75	12.63	nw.	3.1	2 St. Cu., W.; 4 A. St., W.
	250	984.2	13.1		71	10.71	nnw.	9.4	
7:10	458	960.0	11.6	0.72	67	9.15	nnw.	12.3	
	500	955.2	11.9		65	9.05	nnw.	12.7	
	750	927.0	13.8		50	7.89	nw.	13.6	
7:12	837	917.6	14.4	−0.74	45	7.38	nw.	13.6	Inversion.
	1,000	899.6	13.3		45	6.88	nw.	13.8	
	1,250	873.4	11.6		45	6.15	wnw.	15.2	
	1,500	847.9	9.9		45	5.49	wnw.	18.6	
7:18	1,936	804.5	6.9	0.68	45	4.48	w.	22.4	
	2,000	798.2	6.6		45	4.38	w.	22.6	
	2,500	750.6	3.9		43	3.47	wsw.	22.3	
7:22	2,698	732.8	2.8	0.54	42	3.14	wsw.	24.0	
	3,000	705.8	2.5		38	2.78	wsw.	27.2	
7:25	3,179	690.4	2.4	0.08	35	2.54	wsw.	29.3	Isothermal.
	3,500	663.2	−0.1		32	1.94	wsw.	30.0	
	4,000	623.2	−4.1		27	1.17	wsw.	31.2	
7:30	4,216	606.4	−5.8	0.79	25	0.94	wsw.	28.2	
	4,500	585.0	−6.8		24	0.83	wsw.	32.0	
7:33	4,629	575.5	−7.2	0.34	24	0.80	wsw.	30.0	
	5,000	548.8	−9.8		23	0.61	wsw.	30.8	
	6,000	481.5	−17.0		20	0.28			
7:44	6,093	475.8	−17.6	0.71	20	0.26			
7:51	6,827	431.1	−24.8	0.98	19	0.12			Adiabatic.
	7,000	421.0	−25.1		19	0.12			
7:52	7,013	420.1	−25.1	0.16	19	0.12			
	8,000	367.3	−32.9		27	0.08			
8:10	8,434	345.0	−36.2	0.79	30	0.06			

OKLAHOMA CITY, OKLA.

[90th mer.]

DECEMBER 30, 1927

Time	Altitude, M. S. L.	Pressure	Temperature	$\frac{\Delta}{100\,m.}$	Humidity: Relative	Humidity: Vapor pressure	Wind: Direction	Wind: Velocity	Remarks
P. m.									
7:12	385	974.6	−10.0		87	2.28	n.	9.8	10 St., N.
	500	959.7	−11.2						
	750	928.7	−14.0						
7:14	985	900.9	−16.5	1.08					Superadiabatic.
	1,000	898.6	−16.5						
	1,250	869.4	−16.8						
7:15	1,326	860.9	−16.9	0.12					
	1,500	841.4	−12.5						
7:16	1,702	819.7	−7.4	−2.53					Inversion.
	2,000	789.0	−5.8						
7:18	2,380	751.9	−3.8	−0.53					Inversion.
	2,500	740.3	−4.5						
	3,000	695.0	−7.7						
	3,500	651.5	−10.8						

TABLE 2.—*Tabulated data*—Continued

OKLAHOMA CITY, OKLA.—Continued

[90th mer.]

DECEMBER 30, 1927—Continued

Time	Altitude, M. S. L.	Pressure	Temperature	$\frac{\Delta t}{100m.}$	Humidity: Relative	Humidity: Vapor pressure	Wind: Direction	Wind: Velocity	Remarks
P. m.	*M.*	*Mb.*	°*C.*	°*C.*	*P.ct.*	*Mb.*		*M.p.s.*	
7:23	3,568	645.8	−11.2	0.62					
	4,000	610.2	−14.9						
	4,500	570.7	−19.2						
7:26	4,651	559.2	−20.5	0.86					
	5,000	533.3	−24.3						
7:29	5,416	503.8	−28.9	1.10					Superadiabatic.
	6,000	464.6	−33.0						
7:35	6,702	420.0	−37.9	0.70					
	7,000	401.9	−39.3						
	8,000	346.9	−43.8						
7:41	8,375	328.3	−45.6	0.45					
	9,000	299.0	−48.5						
7:46	9,548	275.7	−51.1	0.46					
	10,000	257.6	−50.4						
7:49	10,144	252.1	−50.2	−0.15					Inversion.
	11,000	221.2	−51.3						
7:56	11,581	202.3	−52.0	0.13					
	12,000	189.8	−53.4						
	13,000	162.9	−56.7						
	14,000	138.9	−60.0						
8:17	14,917	120.0	−63.1	0.33					Base of stratosphere.
	15,000	118.5	−63.2						
	16,000	101.0	−64.0						
8:29	16,183	97.9	−64.2	0.09					

ROSWELL, N. MEX.

[105th mer.]

DECEMBER 30, 1927

Time	Altitude, M. S. L.	Pressure	Temperature	$\frac{\Delta t}{100m.}$	Humidity: Relative	Humidity: Vapor pressure	Wind: Direction	Wind: Velocity	Remarks
P. m.									
5:54	1,098	888.2	9.6		21	2.51	nw.	8.5	1 st. cu., NW.
	1,250	872.0	8.7						
	1,500	845.7	7.2						Strong NW. wind prevailed during entire time balloon was aloft.
5:59	1,763	819.3	5.7	0.59					
	2,000	795.6	3.6						
6:04	2,382	759.0	0.2	0.89					
	2,500	747.8	−1.0						
6:08	2,965	705.4	−5.7	1.01					Superadiabatic.
	3,000	702.2	−5.9						
	3,500	658.4	−9.0						
6:15	3,979	618.8	−11.9	0.61					
	4,000	617.1	−11.8						
6:19	4,225	599.6	−11.2	−0.29					Inversion.
	4,500	578.5	−14.4						
	5,000	541.8	−16.7						
6:32	5,086	535.4	−17.3	0.71					

DECEMBER 31, 1927

Time	Altitude, M. S. L.	Pressure	Temperature	$\frac{\Delta t}{100m.}$	Humidity: Relative	Humidity: Vapor pressure	Wind: Direction	Wind: Velocity	Remarks
A. m.									
5:52	1,098	900.0	−8.3		82	2.49	n.	1.8	2 ci. st., W.
	1,250	882.2	−9.3		83	2.31			
	1,500	854.2	−10.9		84	2.03			
5:54	1,572	846.4	−11.4	0.65	84	1.94			
5:55	1,756	826.5	−7.8	−1.96	84	2.66			Inversion.
	2,000	800.8	−8.4		80	2.41			
5:56	2,133	787.3	−8.8	0.27	78	2.27			
	2,500	750.4	−10.6		76	1.88			
5:58	2,575	743.4	−11.0	0.50	75	1.80			
	3,000	703.2	−11.0		71	1.70			
6:00	3,075	696.5	−11.0	0.00	70	1.68			Isothermal.
	3,500	659.0	−13.0		69	1.38			
	4,000	617.7	−15.3		67	1.09			
	4,500	578.8	−17.7		66	0.86			
	5,000	540.7	−20.0		64	0.67			
6:07	5,173	527.5	−20.8	0.47	64	0.62			
	6,000	471.0	−26.3		63	0.35			
6.12	6,503	439.6	−29.7	0.67	62	0.25			
	7,000	409.6	−33.8		62	0.16			
6:18	7,787	365.9	−40.2	0.82	62	0.07			
	8,000	354.7	−42.0		62	0.06			
	9,000	305.9	−50.4		62	0.02			
6:24	9,048	303.8	−50.8	0.84	62	0.02			
	10,000	262.1	−56.9		58	0.01			
6:28	10,087	258.6	−57.5	0.65	58	0.01			
6:31	10,712	234.7	−60.8	0.53	58	0.01			
	11,000	224.3	−61.4		58	0.01			
	12,000	191.1	−63.4		57				
6:40	12,495	176.7	−64.4	0.20	57				
	13,000	163.0	−66.7		57				
	14,000	139.0	−71.1		57				
6:53	14,888	120.2	−75.1	0.45	57				Base of stratosphere.
	15,000	118.0	−74.8		57				
7:06	15,952	100.3	−72.6	−0.23	59				

TABLE 2.—*Tabulated data*—Continued

SAN ANTONIO, TEX.

[90th mer.]

DECEMBER 30, 1927

Time	Altitude, M. S. L.	Pressure	Temperature	$\frac{\Delta t}{100m.}$	Humidity: Relative	Humidity: Vapor pressure	Wind: Direction	Wind: Velocity	Remarks
P. m.	*M.*	*Mb.*	°*C.*	°*C.*	*P.ct.*	*Mb.*		*M.p.s.*	
7:18	230	984.9	20.4		36	8.63	nw.	2.2	Cloudless.
	250	982.4	20.5		35	8.44			
7:19	430	962.4	21.3	−0.45	30	7.60			Inversion.
	500	954.6	20.7		30	7.33			
	750	977.0	18.7		29	6.26			
	1,000	900.3	16.7		29	5.52			
7:26	1,215	877.9	14.9	0.81	28	4.75			
	1,250	874.0	14.5		29	4.79			
	1,500	848.3	12.0		33	4.63			
7:32	1,719	826.8	9.8	1.01	36	4.36			Superadiabatic.
	2,000	799.2	7.2		35	3.56			
7:40	2,100	789.6	6.3	0.92	35	3.34			Adiabatic.

VICKSBURG, MISS.

[90th mer.]

DECEMBER 31, 1927

Time	Altitude, M. S. L.	Pressure	Temperature	$\frac{\Delta t}{100m.}$	Humidity: Relative	Humidity: Vapor pressure	Wind: Direction	Wind: Velocity	Remarks
A. m.									
6:59	75	1,007.8	6.2		86	8.15	nw.	6.7	10 st., NW.
	250	985.9	4.9		88	7.62			
	500	956.0	3.2		90	6.91			
	750	927.2	1.4		93	6.29			
7:02	980	901.3	−0.3	0.72	95	5.66			
	1,000	899.1	−0.1		94	5.70			
	1,250	871.5	1.8		82	5.70			
	1,500	845.0	3.7		71	5.65			
7:04	1,512	843.9	3.8	−0.77	70	5.61			Inversion.
	2,000	794.3	3.5		70	5.50			
7:08	2,493	747.9	3.1	0.07	70	5.32			Isothermal.
	2,500	747.2	3.0		70	5.31			
	3,000	702.4	−2.0		72	3.73			
7:11	3,282	677.8	−4.8	1.00	73	2.99			Adiabatic.
	3,500	659.3	−4.4		68	2.88			
7:14	3,865	629.5	−3.6	−0.21	60	2.72			Inversion.
	4,000	618.9	−4.6		58	2.42			
	4,500	580.8	−8.4		53	1.60			
7:18	4,891	551.9	−11.4	0.76	48	1.11			
	5,000	544.2	−12.3		48	1.02			
7:22	5,880	484.6	−19.3	0.80	46	0.52			
	6,000	476.9	−18.9		46	0.53			
7:23	6,171	466.0	−18.3	−0.34	46	0.57			Inversion.
	7,000	416.7	−25.9		46	0.27			
7:29	7,601	383.3	−31.4	0.92	46	0.15			Adiabatic.
	8,000	363.1	−35.3		46	0.10			
	9,000	314.9	−44.9		46	0.03			
7:39	9,792	278.8	−52.6	0.97	46	0.01			Adiabatic.
	10,000		−53.9						
7:43	10,600		−57.7	0.63					Base of stratosphere.

COLUMBIA, MO.

[90th mer.]

FEBRUARY 15, 1928

Time	Altitude, M. S. L.	Pressure	Temperature	$\frac{\Delta t}{100m.}$	Humidity: Relative	Humidity: Vapor pressure	Wind: Direction	Wind: Velocity	Remarks
P. m.									
7:00	227	987.1	0.0		72	4.40	nw.	1.3	Cloudless.
	250	984.2	−0.2		72	4.33			
	500	953.1	−2.8		73	3.54			
	750	923.0	−5.3		74	2.91			
	1,000	894.1	−7.8		74	2.35			
7:03	1,246	867.0	−10.3	1.01	75	1.69			Superadiabatic.
	1,250	866.5	−10.3		75	1.69			
7:04	1,414	848.4	−9.7	−0.36	62	1.67			Inversion.
	1,500	839.0	−10.2		63	1.62			
	2,000	785.8	−13.4		66	1.27			
	2,500	735.8	−16.6		69	0.99			
7:07	2,516	734.3	−16.7	0.63	69	0.99			
7:09	2,933	694.9	−16.7	0.00	62	0.89			Isothermal.
	3,000	688.5	−17.2		62	0.84			
	3,500	643.8	−20.9		61	0.59			
	4,000	601.2	−24.5		61	0.41			
7:13	4,389	570.2	−27.4	0.74	60	0.30			
	4,500	561.6	−28.2		60	0.27			
	5,000	524.2	−32.0		62	0.19			
7:18	5,821	465.8	−38.2	0.75	65	0.10			
	6,000	454.3	−39.7		65	0.08			
	7,000	392.2	−48.1		65	0.03			
7:23	7,166	382.2	−49.5	0.84	65	0.03			
7:27	7,894	341.5	−56.7	0.99	60	0.01			Adiabatic.
	8,000	335.8	−57.4		61	0.01			
7:30	8,736	299.6	−62.1	0.64	65	0.01			Base of stratosphere.
	9,000	288.0	−61.8		63	0.01			
	10,000	246.5	−60.5		55	0.01			
7:40	10,702	219.2	−59.6	−0.13	50	0.01			
	11,000	209.2	−59.5		51	0.01			
	12,000	178.8	−59.3		53	0.01			
7:47	12,605	162.7	−59.2	−0.02	55	0.01			
	13,000	153.0	−59.6		55	0.01			
7:54	13,827	134.0	−60.3	0.09	55				

TABLE 2.—*Tabulated data*—Continued

COLUMBIA, MO.—Continued

[90th mer.]

FEBRUARY 16, 1928

Time	Altitude, M. S. L.	Pressure	Temperature	$\frac{\Delta t}{100\,m.}$	Humidity: Relative	Humidity: Vapor pressure	Wind: Direction	Wind: Velocity	Remarks
A. m.	*M.*	*Mb.*	°*C.*	°*C.*	*P. ct.*	*Mb.*		*M. p. s.*	
7:00	227	988.5	−3.0		92	4.39	nw.	2.7	3 Ci. St., SW.
	250	985.4	−3.0		91	4.34			
7:01	476	957.8	−3.0	0.00	83	3.96			Isothermal.
	500	955.0	−3.2		83	3.89			
	750	925.3	−4.7		85	3.52			
7:02	994	896.9	−6.3	0.64	86	3.10			
	1,000	896.2	−6.3		86	3.10			
	1,250	868.1	−6.4		71	2.54			
	1,500	840.7	−6.5		57	2.02			
7:05	1,784	810.9	−6.6	0.04	41	1.44			Isothermal.
	2,000	788.8	−7.6		45	1.45			
	2,500	739.6	−10.0		55	1.44			
	3,000	693.2	−12.3		64	1.36			
7:09	3,312	664.9	−13.8	0.47	70	1.30			
	3,500	648.7	−15.0		70	1.17			
	4,000	607.7	−18.1		72	0.90			
	4,500	568.1	−21.3		73	0.67			
7:15	4,895	538.3	−23.8	0.63	74	0.53			
	5,000	530.4	−24.7		74	0.49			
	6,000	461.2	−33.6		70	0.18			
7:20	6,191	449.1	−35.3	0.89	69	0.14			
	7,000	400.3	−42.6		70	0.06			
7:23	7,061	396.5	−43.2	0.91	70	0.06			Adiabatic.
7:26	7,936	347.6	−50.6	0.85	68	0.03			
	8,000	344.3	−50.7		67	0.02			
7:30	8,867	302.1	−51.4	0.09	60	0.02			Isothermal.
	9,000	296.5	−50.9		60	0.02			
7:32	9,606	270.3	−48.8	−0.35	58	0.02			Inversion.

DENVER, COLO.

[105th mer.]

FEBRUARY 16, 1928

A. m.									
6:00	1,610	837.4	−15.7		69	1.08	s.	4.0	Cloudless.
	2,000	795.1	−17.3		70	0.94			
6:01	2,027	792.3	−17.4	0.41	70	0.94			
6:03	2,488	744.6	−20.9	0.76	70	0.67			

FORT WORTH, TEX.

[90th mer.]

FEBRUARY 16, 1928

A. m.									
7:00	204	990.7	9.0		42	4.82	se.	2.7	10 St. Cu., SE.
	250	984.8	8.6						
	500	954.8	6.5						
	750	927.0	4.4						
7:02	899	910.2	3.2	0.83					
	1,000	898.9	3.9						
7:02	1,102	887.8	4.6	−0.69					Inversion.
	1,250	872.3	3.9						
	1,500	845.8	2.8						
7:06	1,842	810.2	1.2	0.46					
	2,000	794.3	1.7						
7:07	2,047	790.0	1.9	−0.34					Inversion.
	2,500	746.5	−0.5						
7:10	2,881	711.7	−2.6	0.54					
	3,000	701.0	−2.5						
7:11	3,040	697.6	−2.5	−0.06					Inversion.
	3,500	658.8	−5.4						
	4,000	618.2	−8.6						
7:17	4,102	609.5	−9.2	0.63					
	4,500	578.9	−14.7						
7:24	4,601	570.8	−16.1	1.38					Superadiabatic.
	5,000	541.7	−16.2						
7:32	5,247	524.1	−16.3	0.03					Isothermal.

LOS ANGELES, CALIF.

[120th mer.]

FEBRUARY 16, 1928

A. m.									
5:22	127	1,010.5	6.0		39	3.65	ne.	1.8	Cloudless.
	250	995.2	6.7		38	3.73			
5:23	444	972.1	7.9	−0.60	37	3.94			Inversion.
	500	965.3	7.7		36	3.78			
5:24	731	938.9	7.0	0.31	32	3.21			
	750	936.3	6.9		32	3.18			
	1,000	908.2	5.5		32	2.89			
	1,250	880.7	4.2		31	2.56			
	1,500	854.3	2.8		31	2.32			

TABLE 2.—*Tabulated data*—Continued

LOS ANGELES, CALIF.—Continued

[120th mer.]

FEBRUARY 16, 1928—Continued

Time	Altitude, M. S. L.	Pressure	Temperature	$\frac{\Delta t}{100\,m.}$	Humidity: Relative	Humidity: Vapor pressure	Wind: Direction	Wind: Velocity	Remarks
P. m.	*M.*	*Mb.*	°*C.*	°*C.*	*P. ct.*	*Mb.*		*M. p. s.*	
5:27	1,756	827.8	1.4	0.55	31	2.10			
	2,000	803.6	0.0		31	1.89			
	2,500	754.2	−3.0		31	1.48			
5:29	2,572	747.5	−3.4	0.59	31	1.43			
	3,000	708.2	−4.7		31	1.28			
	3,500	664.2	−6.1		30	1.10			
5:34	3,592	656.6	−6.4	0.29	30	1.07			
	4,000	622.9	−9.4		30	0.83			
	4,500	583.9	−13.0		30	0.60			
5:39	4,875	555.9	−15.8	0.73	30	0.46			
	5,000	547.0	−16.9		30	0.42			
5:43	5,885	485.6	−24.6	0.87	30	0.20			
	6,000	478.0	−25.6						
	7,000	415.1	−35.6						
5:50	7,103	409.4	−35.5	0.90					Adiabatic.
5:52	7,392	393.2	−34.8	−0.24					Inversion.
	8,000	360.2	−39.9						
5:59	8,367	341.7	−43.0	0.84					
	9,000	311.1	−48.7						
6:09	9,475	289.6	−53.0	0.90					Adiabatic.
	10,000	267.1	−55.6						
6:19	10,069	264.5	−55.9	0.49					

FEBRUARY 16, 1928

P. m.									
4:47	127	1,010.7	17.5		33	6.60	sse.	1.3	Few Ci. St., NW.
	250	996.3	16.5		33	6.20	se.	1.0	
	500	967.4	14.5		33	5.45	se.	0.4	
	750	939.4	12.6		33	4.81	w.	1.0	
4:49	857	927.1	11.7	0.79	33	4.54	wnw.	1.4	
	1,000	911.3	10.4		32	4.04	wnw.	2.1	
	1,250	884.0	8.3		30	3.29	wnw.	3.0	
	1,500	857.4	6.1		29	2.73	wnw.	3.4	
4:52	1,725	834.3	4.1	0.88	27	2.21	w.	3.7	
	2,000	806.5	2.3		28	2.02	wsw.	2.4	
	2,500	757.9	−1.0		30	1.69	ne.	7.1	
	3,000	711.9	−4.3		32	1.37	ne.	16.0	
4:58	3,299	685.4	−6.3	0.66	33	1.19	ne.	19.7	
	3,500	668.4	−5.8		31	1.17	ne.	21.6	
5:00	3,667	654.4	−5.3	−0.27	30	1.18	ne.	23.7	Inversion.
	4,000	627.5	−7.1		30	1.01	ne.	22.8	
	4,500	588.3	−9.8		30	0.80	nne.	22.7	
5:06	4,672	574.9	−10.7	0.54	30	0.74	nne.	21.6	
	5,000	550.8	−13.6		29	0.55	nne.	23.8	
5:12	5,558	511.6	−18.5	0.88	27	0.32	nne.	26.0	
	6,000	482.1	−22.1		26	0.22	nne.	26.6	
5:19	6,566	446.5	−26.7	0.81	24	0.13	nne.	23.6	
	7,000	420.9	−31.5		23	0.08	nne.	24.0	
5:25	7,259	405.5	−34.3	1.10	22	0.05	nne.	24.0	Superadiabatic.
	8,000	365.5	−40.3		21	0.03			
5:36	8,188	355.0	−41.8	0.81	21	0.02			

MONTGOMERY, ALA.

(90th mer.]

FEBRUARY 16, 1928

A. m.									
7:08	68	1,007.7	5.3		92	8.20	nw.	1.8	2 Ci. St., W.; 2 St. N.
	250	985.2	3.8		93	7.46			
	500	955.3	1.6		94	6.45			
	750	926.5	−0.5		96	5.63			
	1,000	898.0	−2.6		97	4.78			
7:13	1,215	973.7	−4.4	0.85	98	4.15			
	1,250	869.7	−4.0		96	4.21			
	1,500	842.7	−1.5		79	4.27			
7:14	1,590	833.4	−0.6	−1.01	73	4.24			Inversion.
	2,000	792.6	−3.0		68	3.24			
7:17	2,267	765.4	−4.6	0.59	65	2.71			
	2,500	743.3	−4.7		60	2.48			
7:19	2,838	711.7	−4.9	0.05	52	2.12			Isothermal.
	3,000	697.2	−6.0		51	1.89			
	3,500	654.2	−9.5		48	1.32			
	4,000	613.0	−13.0		46	0.92			
7:23	4,127	603.0	−13.9	0.70	45	0.83			
	4,500	573.3	−15.4		40	0.64			
7:24	4,521	571.9	−15.5	0.41	40	0.64			
	5,000	536.2	−19.0		39	0.45			
7:29	5,838	479.9	−25.1	0.73	38	0.24			
	6,000	469.4	−25.2		39	0.25			
	7,000	408.9	−25.5		44	0.27			
7:33	7,127	402.0	−25.5	0.03	45	0.27			
	8,000	355.9	−33.5		45	0.12			

TABLE 2.—*Tabulated data*—Continued

MONTGOMERY, ALA.—Continued

[90th mer.]

FEBRUARY 16, 1928—Continued

Time	Altitude, M. S. L.	Pressure	Temperature	$\frac{\Delta t}{100\,m.}$	Humidity: Relative	Humidity: Vapor pressure	Wind: Direction	Wind: Velocity	Remarks
P. m.	*M.*	*Mb.*	°*C.*	°*C.*	*P. ct.*	*Mb.*		*M. p. s.*	
7:40	8,824	316.5	−41.1	0.92	45	0.05			Adiabatic.
	9,000	308.6	−42.4		45	0.04			
	10,000	265.8	−49.8		45	0.02			
7:45	10,181	258.5	−51.1	0.74	45	0.01			
	11,000	228.2	−57.3		46	0.01			
7:50	11,275	218.9	−58.5	0.68	46	0.01			
	12,000	195.2	−61.4		44				
	13,000	166.3	−65.4		42				
7:58	13,155	162.4	−66.0	0.40	42				Base of stratosphere.
	14,000	142.3	−65.6		43				
	15,000	122.2	−65.0		43				
	16,000	104.5	−64.5		44				
	17,000	89.3	−64.0		45				
	18,000	74.9	−63.5		46				
8:29	18,129	73.1	−63.4	−0.05	46	0.01			

FEBRUARY 16, 1928

P. m.									
7:00	68	1,006.0	12.0		53	7.44	se.	1.3	10 A. St., W.
	250	984.0	10.7		53	6.82			
	500	955.0	9.0		53	6.03			
	750	926.5	7.3		53	5.42			
7:03	1,003	898.6	5.5	0.70	53	4.79			
	1,250	872.3	6.8		48	4.74			
	1,500	846.8	8.2		44	4.78			
7:06	1,800	815.9	9.8	−0.54	38	4.61			Inversion.
	2,000	796.0	8.6		37	4.13			
	2,500	747.5	5.7		34	3.11			
	3,000	703.0	2.7		31	2.30			
7:11	3,447	666.7	0.1	0.59	28	1.72			
	3,500	662.5	−0.3		28	1.67			
	4,000	622.9	−4.1		33	1.44			
	4,500	584.9	−7.9		37	1.17			
	5,000	547.2	−11.7		41	0.92			
7:17	5,121	538.7	−12.6	0.76	42	0.87			
7:18	5,489	513.7	−11.8	−0.22	30	0.67			Inversion.
	6,000	480.5	−15.7		30	0.47			
7:22	6,373	457.5	−18.6	0.77	30	0.36			
7:24	6,665	440.0	−19.9	0.45	32	0.34			
	7,000	421.0	−21.9		31	0.27			
7:29	7,920	371.1	−27.2	0.58	30	0.15			
	8,000	367.0	−27.9		30	0.14			
	9,000	319.1	−36.2		30	0.06			
7:34	9,139	313.0	−37.4	0.84	30	0.05			
	10,000	277.3	−44.2		30	0.02			
7:39	10,424	259.1	−47.6	0.79	30	0.02			

NASHVILLE, TENN.

[90th mer.]

FEBRUARY 15, 1928

P. m.									
7:09	191	995.4	7.0		64	6.41	w.	1.3	10 St., Cu., SW.
	250	988.1	6.3						
	500	957.8	3.5						
	750	928.7	0.6						
	1,000	900.2	−2.3						
7:12	1,062	893.6	−3.0	1.15					Superadiabatic.
7:13	1,241	873.6	−4.0	0.56					
	1,250	872.5	−4.1						
	1,500	845.5	−5.9						
	2,000	793.3	−9.3						
7:16	2,453	747.5	−13.1	0.75					
	2,500	742.8	−13.0						
7:17	2,642	729.4	−12.7	−0.21					Inversion.
7:18	2,851	709.6	−14.2	0.72					
	3,000	695.9	−14.3						
7:19	3,491	652.4	−14.5	0.05					Isothermal.
	3,500	651.6	−14.6						
	4,000	610.4	−18.6						
	4,500	570.3	−22.6						
7:23	4,756	550.3	−24.7	0.81					
	5,000	532.0	−26.6						
7:26	5,803	476.0	−32.8	0.77					

FEBRUARY 16, 1928

A. m.									
6:55	191	995.4	4.0		78	6.34	nw.	3.6	10 St. Cu., NW.
	250	988.3	3.5						
	500	957.7	1.2						
6:56	715	932.7	−0.7	0.99					Adiabatic.
	750	928.3	−1.0						
	1,000	899.8	−3.3						
	1,250	871.8	−5.5						

TABLE 2.—*Tabulated data*—Continued

NASHVILLE, TENN.—Continued

[90th mer.]

FEBRUARY 16, 1928—Continued

Time	Altitude, M. S. L.	Pressure	Temperature	$\frac{\Delta t}{100\,m.}$	Humidity: Relative	Humidity: Vapor pressure	Wind: Direction	Wind: Velocity	Remarks
A. m.	*M.*	*Mb.*	°*C.*	°*C.*	*P. ct.*	*Mb.*		*M. p. s.*	
6:58	1,379	857.4	−6.7	0.90					Adiabatic.
	1,500	844.7	−5.2						
6:59	1,662	827.2	−3.1	−1.27					Inversion.
	2,000	793.3	−4.0						
	2,500	744.8	−5.3						
	3,000	698.4	−6.7						
7:03	3,085	690.5	−6.9	0.27					
	3,500	654.0	−10.3						
7:05	3,880	622.8	−13.5	0.83					
	4,000	613.0	−14.1						
7:06	4,359	584.8	−15.8	0.48					
	4,500	574.2	−16.8						
	5,000	537.0	−20.3						
7:08	5,327	513.9	−22.6	0.70					
	6,000	469.1	−29.1						
7:10	6,250	452.2	−31.5	0.96					Adiabatic.

FEBRUARY 16, 1928

P. m.									
7:19	191	995.1	7.6		58	6.06	ne.	2.2	2 Ci. St., W.
	250	988.0	6.9		58	5.77			
	500	958.3	3.7		59	4.70			
7:21	732	931.1	0.8	1.25	60	3.88			Superadiabatic.
	750	929.1	0.6		60	3.83			
	1,000	900.6	−1.8		61	3.21			
	1,250	872.5	−4.2		63	2.72			
7:24	1,473	847.9	−6.3	0.96	64	2.31			Adiabatic.

NEW ORLEANS, LA.

[90th mer.]

FEBRUARY 15, 1928

P. m.									
7:03	17	1,010.5	7.8		88	9.31	ne.	3.6	10 St., NE.
	250	982.1	5.4		93	8.34			
7:05	353	969.9	4.3	1.04	95	7.88			Light rain falling.
	500	952.9	6.3		90	8.59			
	750	924.3	9.8		80	9.70			
7:06	756	923.7	9.9	−1.39	80	9.76			Inversion.
	1,000	896.9	8.8		84	9.51			
	1,250	870.4	7.7		89	9.35			
7:08	1,328	862.0	7.3	0.45	90	9.20			
	1,500	844.5	8.0		90	9.66			
7:10	1,633	830.9	8.5	−0.39	90	9.99			Inversion.
	2,000	794.3	7.2		78	7.92			
	2,500	747.9	5.5		61	5.51			
7:15	2,845	716.9	4.3	0.35	50	4.15			
	3,000	703.7	3.7		66	5.25			
7:17	3,036	700.4	3.6	0.37	70	5.53			
7:18	3,189	687.3	4.3	−0.46	48	3.98			Inversion.
	3,500	660.8	2.1		59	4.19			
	4,000	621.1	−1.5		76	4.10			
7:23	4,247	602.7	−3.3	0.72	85	3.95			
	4,500	583.6	−4.6		72	3.00			
	5,000	548.5	−7.3		47	1.56			
7:38	5,586	508.6	−10.4	0.53	17	0.43			

FEBRUARY 16, 1928

A. m.									
6.43	17	1,012.9	7.2		89	9.04	ne.	3.6	10 St., NE.
	250	984.5	5.5		94	8.49			
6.45	447	961.2	4.1	0.72	98	8.03			
	500	954.8	4.8		96	8.26			
	750	926.0	7.9		89	9.48			
6.46	832	917.2	8.9	−1.25	87	9.92			
	1,000	898.9	8.8		82	9.28			
	1,250	873.0	8.6		75	8.38			
	1,500	847.5	8.4		68	7.49			
	2,000	798.0	8.0		53	5.69			
6.52	2,479	751.6	7.7	0.07	39	4.10			Isothermal.
	2,500	749.7	7.5		39	4.04			
	3,000	704.9	3.5		34	2.67			
	3,500	662.9	−0.5		28	1.64			
6.57	3,619	653.1	−1.4	0.80	27	1.47			
	4,000	671.9	−4.1		28	1.22			
	4,500	584.0	−7.8		30	0.95			
7.00	4,603	576.4	−8.5	0.72	30	0.90			
	5,000	547.8	−9.3		38	1.06			
7.02	5,050	544.4	−9.4	0.20	39	1.08			
7.05	5.911	486.6	−16.5	0.82	58	0.84			
	6,000	481.1	−16.4		56	0.82			
7.09	6,594	444.5	−15.8	−0.10	45	0.70			Inversion.
	7,000	421.2	−18.5		42	0.50			
7.12	7,039	419.3	−18.8	0.67	42	0.49			

TABLE 2.—*Tabulated data*—Continued

OKLAHOMA CITY, OKLA.

[90th mer.]

FEBRUARY 15, 1928

Time	Altitude, M. S. L.	Pressure	Temperature	$\frac{\Delta t}{100\,m.}$	Humidity: Relative	Humidity: Vapor pressure	Wind: Direction	Wind: Velocity	Remarks
P. m.	*M.*	*Mb.*	°*C.*	°*C.*	*P.ct.*	*Mb.*		*M.p.s.*	
7.45	385	970.0	5.6		97	8.82	se.	2.7	10 St., SE.
	500	956.4	4.8		97	8.34			
	750	927.2	3.0		98	7.43			Light rain falling.
	1,000	899.0	1.2		99	6.59			
	1,250	871.5	−0.6		100	5.81			
7.49	1,379	855.8	−1.6	0.71	100	5.36			
	1,500	844.9	−2.2		100	5.10			
	2,000	793.0	−4.9		100	4.07			
	2,500	744.5	−7.7		100	3.20			
7:53	2,659	729.1	−8.6	0.55	100	2.96			
	3,000	696.8	−10.7		100	2.46			
	3,500	651.9	−13.7		100	1.88			
	4,000	611.0	−16.8		100	1.41			
7:59	4,133	601.1	−17.6	0.61	100	1.31			
	4,500	572.7	−20.6		98	0.97			
	5,000	535.0	−24.8		96	0.62			
8.03	5,279	514.9	−27.1	0.83	95	0.49			
	6,000	465.8	−32.6		89	0.26			
8:08	6,540	431.6	−36.7	0.76	85	0.15			
	7,000	404.3	−41.7		81	0.08			
8:14	7,756	361.3	−49.8	1.08	75	0.03			Superadiabatic.
	8,000	348.2	−50.3		73	0.03			
8:18	8,548	320.4	−51.5	0.21	70	0.02			
	9,000	300.0	−50.6		69	0.02			
8:24	9,507	277.1	−49.5	−0.21	68	0.03			Inversion.

FEBRUARY 16, 1928

Time	Altitude, M. S. L.	Pressure	Temperature	$\frac{\Delta t}{100\,m.}$	Humidity: Relative	Humidity: Vapor pressure	Wind: Direction	Wind: Velocity	Remarks
A. m.									
8:07	[1] 13,745	145.9	−52.3	−0.03					10 St., NE.
	13,000	164.0	−52.5						
	12,000	191.1	−52.8						
8:11	11,452	207.5	−52.9	0.10					
	11,000	222.2	−52.5						
	10,000	258.7	−51.5						
8:14	9,496	279.3	−51.0	0.03					
	9,000	302.5	−50.9						
	8,000	350.8	−50.6						
8:18	7,951	353.4	−50.6	0.55					Base of stratosphere.
8:19	7,458	379.9	−47.9	1.76					Superadiabatic.
8:21	7,014	405.7	−40.1	0.98					Adiabatic.
	7,000	406.5	−40.0						
8:23	6,286	450.0	−33.0	0.85					
	6,000	468.0	−30.6						
	5,000	537.4	−22.2						
8:27	4,639	564.7	−19.1	0.76					
	4,500	574.8	−18.1						
	4,000	614.5	−14.3						
	3,500	655.3	−10.5						
8:30	3,277	675.0	−8.8	−0.20					Inversion.
8:31	3,030	697.1	−9.3	0.67					
	3,000	700.1	−9.1						
	2,500	746.3	−5.8						
8:32	2,400	755.6	−5.1	−0.51					Inversion.
8:33	2,205	774.6	−6.1	0.42					
	2,000	795.3	−5.2						
8:35	1,516	845.4	−3.2	−0.59					Inversion.
	1,500	847.0	−3.3						
	1,250	874.5	−4.8						
8:36	1,230	876.5	−4.9	0.65					
	1,000	902.2	−3.4						
	750	930.7	−1.8						
	500	960.9	−0.1						
8:38	385	974.9	0.6		85	5.42	ne.	5.4	

FEBRUARY 16, 1928

Time	Altitude, M. S. L.	Pressure	Temperature	$\frac{\Delta t}{100\,m.}$	Humidity: Relative	Humidity: Vapor pressure	Wind: Direction	Wind: Velocity	Remarks
P. m.									
7:30	385	974.4	−1.6		95	5.09	n.	2.7	10 St., N. Snowing.
	500	960.5	−2.9						
7:32	659	941.2	−4.6	1.10					Superadiabatic.
	750	930.3	−5.2						
	1,000	901.2	−6.9						
7:35	1,033	897.4	−7.1	0.67					
	1,250	873.0	−6.9						
	1,500	845.2	−6.6						
7:37	1,603	834.3	−6.5	−0.11					Inversion.
	2,000	792.0	−8.4						
	2,500	724.7	−10.7						
7:43	2,839	711.3	−12.3	0.47					
	3,000	697.3	−13.1						
	3,500	654.0	−15.5						
7:49	3,896	618.6	−17.4	0.48					
	4,000	610.0	−18.0						
	4,500	570.9	−20.9						

[1] Descent used instead of ascent.

TABLE 2.—*Tabulated data*—Continued

OKLAHOMA CITY, OKLA.—Continued

[90th mer.]

FEBRUARY 16, 1928—Continued

Time	Altitude, M. S. L.	Pressure	Temperature	$\frac{\Delta t}{100\,m.}$	Humidity: Relative	Humidity: Vapor pressure	Wind: Direction	Wind: Velocity	Remarks
P. m.	*M.*	*Mb.*	°*C.*	°*C.*	*P.ct.*	*Mb.*		*M.p.s.*	
7:54	4,834	545.2	−22.8	0.58					
	5,000	533.2	−24.2						
	6,000	464.5	−32.4						
8:00	6,264	447.0	−34.6	0.83					
	7,000		−39.9						
8:05	7,454		−43.2	0.72					
8:07	7,930		−44.5	0.27					
	8,000		−44.4						
8:09	8,406		−43.6	−0.19					Inversion.

SAN ANTONIO, TEX.

[90th mer.]

FEBRUARY 15, 1928

Time	Altitude, M. S. L.	Pressure	Temperature	$\frac{\Delta t}{100\,m.}$	Humidity: Relative	Humidity: Vapor pressure	Wind: Direction	Wind: Velocity	Remarks
P. m.									
7:07	230	985.5	15.4		63	11.02	se.	2.2	2 Ci. St. SW.
	250	983.5	15.3		63	10.96			
	500	955.0	13.5		65	10.06			
	750	927.0	11.7		66	9.08			
	1,000	899.5	9.9		67	8.17			
	1,250	872.2	8.1		69	7.45			
7:10	1,273	870.0	7.9	0.72	69	7.35			
	1,500	846.6	9.5		63	7.48			
7:11	1,509	845.7	9.6	−0.72	63	7.53			Inversion.
	2,000	796.1	7.0		58	5.81			
	2,500	749.3	4.4		52	4.35			
	3,000	705.5	1.8		47	3.27			
7:17	3,347	675.4	0.0	0.52	43	2.63			
	3,500	662.8	−1.1		42	2.34			
	4,000	622.6	−4.6		41	1.71			
	4,500	584.2	−8.2		39	1.20			
	5,000	547.6	−11.7		37	0.83			
7:24	5,609	505.5	−16.1	0.71	35	0.53			
	6,000	480.3	−15.2		35	0.57			
7:27	6,485	450.6	−14.1	0.23	35	0.63			
	7,000	421.0	−17.5		35	0.46			
	8,000	367.7	−24.0		36	0.26			
7:33	8,198	357.8	−25.3	0.65	36	0.22			
	9,000	320.1	−33.2		35	0.09			
7:40	9,597	294.8	−39.0	0.98	35	0.05			Adiabatic.
	10,000	278.1	−43.8		35	0.03			
7:44	10,398	262.3	−48.5	1.18	35	0.02			Superadiabatic.
	11,000	239.6	−54.5		33	0.01			
7:48	11,248	230.3	−57.0	1.00	32	0.01			Adiabatic.
	12,000		−60.2		33				
	13,000		−64.4		34				
	14,000		−68.6		35				
8:04	14,544		−70.9	0.42	36				Base of stratosphere.

FEBRUARY 16, 1928

Time	Altitude, M. S. L.	Pressure	Temperature	$\frac{\Delta t}{100\,m.}$	Humidity: Relative	Humidity: Vapor pressure	Wind: Direction	Wind: Velocity	Remarks
A. m.									
7:09	230	986.9	9.9		86	10.49	ne.	3.6	10 St. NE.
	250	984.4	9.7		87	10.47			
	500	955.1	7.6		94	9.81			
7:10	546	950.0	7.2	0.86	95	9.65			
7:11	741	927.9	8.6	−0.72	90	10.05			Inversion.
	750	976.8	8.5		90	9.99			
	1,000	899.7	6.9		95	9.45			
	1,250	872.9	5.3		99	8.82			
7:13	1,281	868.9	5.1	0.65	100	8.78			
	1,500	846.2	7.4		77	7.93			
7:14	1,666	829.1	9.1	−1.04	60	6.94			Inversion.
	2,000	795.6	7.3		61	6.23			
	2,500	749.1	4.7		62	5.29			
7:16	2,516	747.7	4.6	0.53	62	5.26			
7:17	2,669	734.0	5.0	−0.26	65	5.67			Inversion.
	3,000	705.0	2.6		62	4.56			
	3,500	663.0	−1.0		57	3.21			
	4,000	622.3	−4.6		52.	2.17			
7:24	4,449	587.3	−7.8	0.72	48	1.52			
	4,500	583.4	−8.2		48	1.47			
	5,000	547.8	−12.0		47	1.03			
7:29	5,990	480.4	−19.5	0.76	44	0.48			
	6,000	479.7	−19.5		44	0.48			
7:30	6,169	468.7	−19.2	−0.17	44	0.50			Inversion.
7:33	6,703	436.3	−23.3	0.77	44.	0.33			
	7,000	419.6	−22.9		44	0.35			
7:36	7,424	395.4	−22.4	−0.12	44	0.37			Inversion.
	8,000	365.6	−27.8		44	0.21			
7:45	8,945	320.3	−36.7	0.94	44	0.08			Adiabatic.

TABLE 2.—*Tabulated data*—Continued

VICKSBURG, MISS.

[90th mer.]

FEBRUARY 15, 1928

Time	Altitude, M. S. L.	Pressure	Temperature	$\frac{\Delta t}{100\,m.}$	Humidity: Relative	Humidity: Vapor pressure	Wind: Direction	Wind: Velocity	Remarks
P. m.	M.	Mb.	°C.	°C.	P. ct.	Mb.		M. p. s	
7:05	75	1,006.0	5.1		81	7.11	ne.	1.8	Few St., NE.
	250	984.9	3.8						
	500	955.2	2.1						
	750	926.0	−0.3						
7:08	910	907.2	−0.9	0.72					
	1,000	897.2	0.0						
7:09	1,239	870.8	2.4	−1.00					Inversion.
	1,250	869.7	2.4						
7:10	1,410	852.6	1.8	0.35					
	1,500	843.1	2.3						
7:11	1,752	817.5	3.8	−0.58					Inversion.
	2,000	793.0	2.5						
	2,500	745.0	−0.2						
	3,000	699.8	−2.9						
7:16	3,127	688.8	−3.6	0.54					
7:17	3,369	668.0	−2.9	−0.29					Inversion.
	3,500	657.2	−3.9						
	4,000	616.8	−7.7						
7:20	4,410	584.8	−10.8	0.76					
	4,500	577.9	−11.4						
	5,000	540.8	−14.8						
7:25	5,795	487.2	−20.3	0.69					
	6,000	473.9	−20.3						
7:27	6,186	462.1	−20.3	0.00					Isothermal.
7:28	6,419	447.9	−21.9	0.69					
	7,000	414.3	−23.3						
7:31	7,446	389.9	−24.3	0.23					
	8,000	361.0	−28.7						
7:38	8,543	334.8	−33.1	0.80					
	9,000	336.6	−36.6						
7:39	9,055	311.0	−37.0	0.76					
7:47	9,954	273.1	−44.3	0.81					
	10,000	271.1	−44.6						
7:49	10,165	264.9	−45.8	0.71					

FEBRUARY 16, 1928

Time	Altitude, M. S. L.	Pressure	Temperature	$\frac{\Delta t}{100\,m.}$	Humidity: Relative	Humidity: Vapor pressure	Wind: Direction	Wind: Velocity	Remarks
P. m.									
6:59	75	1,005.7	10.2		60	7.46	ne.	2.2	4 Ci. St. SW.
	250	984.7	9.0		60	6.89			
	500	955.4	7.3		61	6.23			
	750	926.9	5.6		61	5.54			
	1,000	898.6	3.9		62	5.00			
7:03	1,137	883.8	3.0	0.68	62	4.70			
	1,250	871.8	3.6		64	5.06			
	1,500	845.3	5.1		67	5.88			
7:04	1,503	845.0	5.1	−0.57	67	5.88			Inversion.
	2,000	795.2	2.6		62	4.56			
	2,500	747.0	0.0		56	3.42			
7:08	2,590	738.6	−0.4	0.51	55	3.25			
7:09	2,940	707.1	−0.2	−0.06	45	2.70			Inversion.
	3,000	702.1	−0.6		46	2.67			
	3,500	658.9	−4.1		59	2.57			
7:12	3,807	634.0	−6.2	0.69	66	2.40			
	4,000	618.4	−6.4		60	2.15			
7:14	4,447	584.5	−6.9	0.11	45	1.54			
	4,500	580.4	−7.3		45	1.49			
	5,000	544.3	−10.6		41	1.02			
	6,000	477.3	−17.2		35	4.76			
7:21	6,257	461.2	−18.9	0.66	33	0.38			
7:23	6,809	428.7	−19.9	0.18	35	0.37			
	7,000	417.3	−21.5		34	0.31			
	8,000	364.2	−29.7		31	0.12			
7:29	8,206	353.9	−31.4	0.82	30	0.10			
7:35	8,933	318.9	−43.4	1.66	30	0.02			Superadiabatic.
	9,000	316.0	−43.9		30	0.02			
	10,000	273.9	−49.5		30	0.01			
7:41	10,634	247.8	−53.1	0.56	30	0.01			
	11,000	234.2	−55.9		30	0.01			
	12,000	200.4	−63.6		30				
7:48	12,208	193.9	−65.2	0.77	30				Base of stratosphere.
	13,000	170.2	−64.9		30				
	14,000	144.3	−64.6		30				
	15,000	123.6	−64.3		30				
8:03	15,350	117.5	−64.2	−0.03	30				
	16,000	106.8	−63.9		32				
	17,000	90.5	−63.3		35				
8:26	17,055	89.5	−63.3	−0.05	35				

COLUMBIA, MO.

[90th mer.]

MARCH 14, 1928

Time	Altitude, M. S. L.	Pressure	Temperature	$\frac{\Delta t}{100\,m.}$	Humidity: Relative	Humidity: Vapor pressure	Wind: Direction	Wind: Velocity	Remarks
P. m.									
6.58	227	993.2	10.0		62	7.62	ne.	2.7	10 A. St., W.
	250	990.5	9.8		62	7.51			
	500	961.4	8.1		64	6.91			
7.00	751	932.2	6.3	0.71	65	6.20			
	1,000	904.5	4.0		67	5.45			
	1,250	877.1	1.6		68	4.66			

TABLE 2.—*Tabulated data*—Continued

COLUMBIA, MO.—Continued

[90th mer.]

MARCH 14, 1928—Continued

Time	Altitude, M. S. L.	Pressure	Temperature	$\frac{\Delta t}{100\,m.}$	Humidity: Relative	Humidity: Vapor pressure	Wind: Direction	Wind: Velocity	Remarks
P. m.	M.	Mb.	°C.	°C.	P. ct.	Mb.		M. p. s.	
7.04	1,476	852.3	−0.5	0.94	70	4.10			Adiabatic.
	1,500	850.0	−0.4		70	4.14			
	1,658	833.4	0.0	−0.27	70	4.28			Inversion.
	2,000	798.7	−2.8		72	3.49			
	2,500	749.5	−7.0		74	2.52			
7.11	2,608	739.0	−7.9	0.83	75	2.36			
7.12	2,793	721.7	−6.6	0.70	75	2.64			Inversion.
	3,000	703.0	−7.4		76	2.50			
7.15	3,105	693.3	−7.8	0.38	77	2.44			
	3,500	659.2	−10.7		78	1.92			
7.18	3,751	637.9	−12.6	0.74	79	1.64			
	4,000	617.6	−12.9		80	1.62			
	4,500	578.6	−14.8		81	1.38			
7.24	4,873	550.5	−15.9	0.29	82	1.26			
	5,000	541.1	−16.7		82	1.17			
7.30	5,979	474.8	−23.1	0.65	85	0.65			
	6,000	473.4	−23.2		83	0.64			
7.37	6,949	415.4	−29.4	0.65	75	0.31			
	7,000	412.3	−34.7		75	0.17			
7.52	7,781	369.6	−38.1	1.04	82	0.13			Superadiabatic.

MARCH 15, 1928

Time	Altitude, M. S. L.	Pressure	Temperature	$\frac{\Delta t}{100\,m.}$	Humidity: Relative	Humidity: Vapor pressure	Wind: Direction	Wind: Velocity	Remarks
A. m.									
6.58	227	993.6	3.0		70	5.31	ne.	5.4	10 St., NE.
	250	990.7	2.9		70	5.26			
	500	960.6	1.3		72	4.83			
	750	930.8	−0.3		74	4.41			
7.00	887	915.2	−1.2	0.64	75	4.15			
	1,000	902.3	−0.8		74	4.23			
	1,250	875.0	0.2		71	4.40			
7.02	1,399	858.7	0.8	−0.39	70	4.53			Inversion.
	1,500	847.9	0.4		69	4.34			
	2,000	796.7	−1.3		62	3.40			
7.04	2,031	793.6	−1.4	0.35	62	3.37			
	2,500	748.2	−4.7		64	2.69			
7.07	2,868	713.7	−7.3	0.66	65	2.15			
	3,000	701.8	−7.3		66	2.18			
	3,500	658.5	−7.4		71	2.34			
7.11	3,733	638.9	−7.5	0.02	73	2.38			Isothermal.
	4,000	617.2	−8.7		74	2.17			
	4,500	578.8	−10.8		77	1.88			
	5,000	542.1	−13.0		79	1.58			
7.15	5,018	540.9	−13.1	0.44	79	1.57			
	6,000	475.2	−18.2		82	1.02			
7.19	6,133	466.7	−18.9	0.52	82	0.95			
	7,000	415.6	−25.9		84	0.49			
7.22	7,216	403.0	−27.6	0.80	85	0.42			
	8,000	361.3	−32.4		87	0.26			
7.26	8,436	339.7	−35.0	0.61	88	0.19			
	9,000	314.0	−39.4		81	0.11			
7.30	9,806	279.1	−45.8	0.79	72	0.05			
	10,000	271.3	−47.2		72	0.04			
	11,000	232.4	−54.3		74	0.02			
7.35	11,425	217.8	−57.3	0.71	75	0.01			Base of stratosphere.
	12,000	199.7	−57.3		75	0.01			
7.38	12,020	199.2	−57.3	0.00	75	0.01			
	13,000	172.2	−56.4						
	14,000	148.6	−55.4						
	15,000	127.5	−54.4						
8.00	15,981	108.0	−53.5	−0.10					

DENVER, COLO.

[105th mer.]

MARCH 14, 1928

Time	Altitude, M. S. L.	Pressure	Temperature	$\frac{\Delta t}{100\,m.}$	Humidity: Relative	Humidity: Vapor pressure	Wind: Direction	Wind: Velocity	Remarks
P. m.									
5.49	1,610	828.8	3.7		83	6.61	nw.	2.7	10 St., NW.
5.50	1,985	791.1	0.0	0.99					Adiabatic. Raining.
	2,000	789.6	−0.1						
	2,500	742.2	−3.5						
5.53	2,610	731.5	−4.2	0.67					
	3,000	695.3	−7.2						
	3,500	650.6	−11.0						
	4,000	609.1	−14.7						
	4,500	570.4	−18.5						
	5,000	534.8	−22.3						
	6,000	466.6	−29.9						
	7,000	404.6	−37.4						
	8,000	349.7	−45.0						
	9,000	301.3	−52.6						
6.18	9,710	270.9	−58.1	0.76					Base of stratosphere.
	10,000	259.2	−57.6						
	11,000	226.3	−55.8						
6.24	11,401	214.3	−55.1	−0.18					
	12,000	197.4	−55.7						
	13,000	170.8	−56.6						
	14,000	146.2	−57.5						
	15,000	123.8	−58.4						
6.41	15,380	115.5	−58.8	0.09					

TABLE 2.—*Tabulated data*—Continued

DENVER, COLO.—Continued

[105th mer.]

MARCH 15, 1928

Time	Altitude, M. S. L.	Pressure	Temperature	$\frac{\Delta t}{100\,m.}$	Humidity: Relative	Humidity: Vapor pressure	Wind: Direction	Wind: Velocity	Remarks
A. m.	*M.*	*Mb.*	°*C.*	°*C.*	*P. ct.*	*Mb.*		*M. p. s.*	
5.49	1,610	836.2	−0.5		86	5.04	ne.	3.1	10 St., NE.
	2,000	796.4	−2.3		88	4.45			
	2,500	747.4	−4.7		90	3.73			Snowing.
	3,000	701.6	−7.0		92	3.13			
	3,500	658.2	−9.4		94	2.59			
	4,000	616.4	−11.7		96	2.16			
5.53	4,054	612.0	−12.0	0.47	96	2.10			
	4,500	577.3	−14.9		97	1.64			
	5,000	540.6	−18.1		98	1.22			
5.57	5,321	517.4	−20.2	0.65	99	1.01			
	6,000	472.7	−24.8		100	0.65			
5.59	6,233	458.0	−26.4	0.68	100	0.56			
6.02	6,926	414.9	−30.4	0.58	100	0.37			
	7,000	410.5	−30.4		100	0.37			
6.03	7,275	395.0	−30.4	0.00	98	0.36			Isothermal.
	8,000	356.6	−37.0		97	0.17			
6.06	8,370	338.5	−40.4	0.91	97	0.12			Adiabatic.
	9,000	309.0	−43.5		97	0.08			
	10,000	266.3	−48.5		97	0.05			
6.12	10,156	259.7	−49.3	0.50	97	0.04			
	11,000	228.0	−55.4		96	0.02			
6.16	11,372	215.5	−58.1	0.72	96	0.01			Base of stratosphere.
	12,000	196.1	−56.7		96	0.02			
	13,000	168.4	−54.4		95	0.02			
	14,000	144.0	−52.0		95	0.03			
6.24	14,329	136.5	−51.3	−0.23	95	0.03			
	15,000	122.6	−51.2		94	0.03			
	16,000	105.2	−50.9		91	0.03			
	17,000	90.8	−50.7		89	0.03			
6.34	17,563	83.3	−50.6	−0.02	88	0.04			

MARCH 15, 1928

Time	Altitude, M. S. L.	Pressure	Temperature	$\frac{\Delta t}{100\,m.}$	Humidity: Relative	Humidity: Vapor pressure	Wind: Direction	Wind: Velocity	Remarks
P. m.									
5:59	1,610	843.7	−5.0		94	3.79	n.	4.0	10 Nb., N.
	2,000	802.5	−7.9						
6:02	2,406	761.6	−11.0	0.75					Snowing.
	2,500	752.3	−11.5						
	3,000	705.2	−14.3						
	3,500	659.9	−17.0						
6:07	3,878	626.8	−19.1	0.55					
	4,000	616.4	−19.7						
	4,500	576.1	−22.4						
6:10	4,774	555.5	−23.8	0.52					
	5,000	539.0	−24.6						
6:14	5,597	496.0	−26.8	0.36					
	6,000	468.9	−31.0						
6:18	6,470	438.4	−35.8	1.03					Superadiabatic.
	7,000	406.3	−37.5						
6:20	7,075	401.9	−37.7	0.31					
	8,000	352.0	−45.4						
6:26	8,377	332.5	−48.6	0.84					
	9,000	302.4	−52.5						
6:30	9,383	285.1	−54.8	0.62					Base of stratosphere.
	10,000	260.1	−52.4						
6:36	10,782	229.9	−49.4	−0.39					
	11,000	222.4	−49.5						Inversion.
	12,000	191.1	−49.8						
6:44	12,485	177.8	−49.9	0.03					
	13,000	164.5	−51.7						Isothermal.
6:52	13,680	148.1	−54.1	0.35					
	14,000	140.7	−54.5						
	15,000	120.1	−55.8						
	16,000	102.4	−57.0						
	17,000	87.5	−58.3						
7:16	17,615	79.9	−59.1	0.13					

FORT WORTH, TEX.

[90th mer.]

MARCH 14, 1928

Time	Altitude, M. S. L.	Pressure	Temperature	$\frac{\Delta t}{100\,m.}$	Humidity: Relative	Humidity: Vapor pressure	Wind: Direction	Wind: Velocity	Remarks
P. m.									
7:15	204	983.4	20.0		83	19.42	ne.	5.4	10 St. Cu., SE.
	250	978.3	19.6		82	18.71			
	500	950.0	17.4		75	14.91			
7:17	679	930.6	15.8	0.88	70	12.57			
	750	922.9	15.8		73	13.11			
	1,000	896.6	15.8		86	15.45			
7:19	1,151	880.5	15.8	0.00	93	16.70			Isothermal.
	1,250	870.2	15.2		93	16.07			
	1,500	845.0	13.8		94	14.83			
	2,000	796.2	11.0		96	12.60			
7:22	2,004	795.8	11.0	0.56	96	12.60			
	2,500	750.2	7.6		98	10.23			
7:25	2,987	706.7	4.2	0.69	100	8.25			
	3,000	705.8	4.2		99	8.17			
	3,500	663.7	4.5		46	3.87			

TABLE 2.—*Tabulated data*—Continued

FORT WORTH, TEX.—Continued

[90th mer.]

MARCH 14, 1928—Continued

Time	Altitude, M. S. L.	Pressure	Temperature	$\frac{\Delta t}{100\,m.}$	Humidity: Relative	Humidity: Vapor pressure	Wind: Direction	Wind: Velocity	Remarks
P. m.	*M.*	*Mb.*	°*C.*	°*C.*	*P. ct.*	*Mb.*		*M. p. s.*	
7:27	3,581	656.8	4.5	−0.05	38	3.20			Inversion.
	4,000	623.4	1.0		39	2.56			
	4,500	585.8	−3.1		40	1.89			
7:33	4,765	566.9	−5.3	0.83	40	1.57			
	5,000	550.1	−7.3		41	1.36			
7:36	5,315	528.6	−10.1	0.87	43	1.12			
	6,000	484.2	−14.9		34	0.57			
7:45	6,693	441.3	−19.7	0.70	25	0.28			
	7,000	423.8	−22.1		24	0.20			
7:54	7,862	376.9	−29.0	0.80	23	0.10			
	8,000	370.0	−30.1		24	0.09			
8:00	8,758	332.6	−36.3	0.81	28	0.05			

LOS ANGELES, CALIF.

[120th mer.]

MARCH 14, 1928

Time	Altitude, M. S. L.	Pressure	Temperature	$\frac{\Delta t}{100\,m.}$	Humidity: Relative	Humidity: Vapor pressure	Wind: Direction	Wind: Velocity	Remarks
P. m.									
4:53	127	1,002.0	17.3		70	13.83	sw.	3.6	Few Cu., NW
	250	987.5	16.9				wsw.	3.4	
	500	959.0	16.0				w.	2.9	
	750	931.2	15.1				wnw.	3.6	
4:56	893	915.5	14.6	0.35			wnw.	5.0	
	1,000	904.3	14.0				wnw.	6.4	
	1,250	877.6	12.7				nw.	10.3	
	1,500	851.8	11.4				nw.	14.8	
4:58	1,689	832.7	10.3	0.53			nnw.	16.3	
4:59	1,859	816.1	10.8	−0.29			nnw.	17.6	Inversion.
	2,000	802.4	10.1				nnw.	17.5	
	2,500	755.5	7.5				nnw.	20.6	
	3,000	710.6	5.0				nnw.	16.6	
5:05	3,057	705.6	4.7	0.51			nnw.	16.2	
	3,500	668.3	1.5				nnw.	19.0	
	4,000	628.3	−2.0				nnw.	21.0	
5:13	4,365	600.0	−4.6	0.71			nw.	22.5	
	4,500	589.7	−5.6				nw.	25.0	
	5,000	552.9	−9.3				nw.	28.1	
5:20	5,780	499.8	−15.0	0.73			nw.	34.4	
	6,000	485.4	−16.7				nw.	31.2	
	7,000	424.6	−24.7				nw.	33.8	
5:30	7,092	419.2	−25.4	0.79			nw.	33.6	
	8,000	370.1	−32.3						
5:42	8,346	352.4	−34.9	0.76					
5:48	8,596	340.6	−38.6	1.48					Superadiabatic.

MONTGOMERY, ALA.

[90th mer.]

MARCH 14, 1928

Time	Altitude, M. S. L.	Pressure	Temperature	$\frac{\Delta t}{100\,m.}$	Humidity: Relative	Humidity: Vapor pressure	Wind: Direction	Wind: Velocity	Remarks
P. m.									
7:00	68	1,007.2	19.0		65	14.29	n.	4.9	4 Ci., W.; 2 A. St., W.
	250	986.1	18.3						
	500	957.6	15.2						
7:02	535	953.6	14.9	0.88					
	750	929.8	14.2						
	1,000	902.7	13.5						
	1,250	876.2	12.7						
7:05	1,409	859.9	12.2	0.31					
	1,500	850.8	11.5						
	2,000	801.4	7.9						
7:10	2,312	771.1	5.6	0.73					
7:11	2,455	757.6	6.8	−0.84					Inversion.
	2,500	753.7	6.5						
	3,000	709.3	3.1						
7:18	3,495	666.8	−0.2	0.67					
	3,500	666.4	−0.2						
	4,000	625.9	−4.4						
	4,500	587.2	−8.6						
7:26	4,683	573.1	−10.1	0.83					
	5,000	551.5	−13.1						
7:34	5,665	504.2	−19.4	0.95					Adiabatic.
7:35	5,760	498.0	−18.4	−1.05					Inversion.
	6,000	482.2	20.1						
7:42	6,738	436.5	−25.2	0.70					
	7,000	421.2	−27.7						
7:47	7,432	396.4	−31.8	0.95					Adiabatic.
	8,000	365.9	−37.6						
8:03	8,935	319.8	−47.2	1.02					Superadiabatic.
	9,000	316.6	−47.7						
	10,000	273.2	−55.3						
8:17	10,403	256.4	−58.6	0.78					Base of stratosphere.
	11,000	233.8	−60.0						
8:40	11,070	231.0	−60.2	0.24					

TABLE 2.—*Tabulated data*—Continued

MONTGOMERY, ALA.—Continued

[90th mer.]

MARCH 15, 1928

Time	Altitude, M. S. L.	Pressure	Temperature	$\frac{\Delta t}{100\,m.}$	Humidity: Relative	Humidity: Vapor pressure	Wind: Direction	Wind: Velocity	Remarks
P. m.	*M.*	*Mb.*	°*C.*	°*C.*	*P. ct.*	*Mb.*		*M. p. s.*	
7:00	68	1,000.6	23.7		64	18.77	sse.	3.1	8 Ci. St., W.; 2 A. St., W.
	250	980.2	22.9						
	500	953.2	21.8						
7:03	726	927.8	20.8	0.44					
	750	925.9	20.6						
	1,000	899.1	18.8						
7:04	1,118	886.4	17.9	0.74					
	1,250	872.8	17.7						
	1,500	847.3	17.3						
7:06	1,530	844.8	17.2	0.17					
	2,000	799.2	13.5						
	2,500	753.3	9.6						
7:10	2,641	740.5	8.5	0.78					
	3,000	709.2	6.3						
	3,500	667.1	3.1						
7:14	3,747	647.0	1.6	0.62					
	4,000	627.3	1.5						
7:16	4,228	609.8	1.4	0.04					
	4,500	590.0	0.3						
	5,000	555.1	−1.8						
7:22	5,588	514.7	−4.2	0.41					
	6,000	488.3	−6.9						
7:24	6,306	469.7	−8.9	0.65					
7:28	6,893	435.4	−11.6	0.46					
	7,000	429.3	−12.3						
	8,000	376.8	−18.8						
7:36	8,845	335.9	−24.3	0.65					
	9,000	329.0	−25.8						
	10,000	286.9	−35.7						
7:44	10,025	285.8	−36.0	0.99					Adiabatic.
	11,000	249.9	−42.6						
	12,000	215.0	−49.3						
7:52	12,285	205.7	−51.2	0.67					
	13,000	184.7	−51.7						
	13,789	164.0	−52.3	0.07					
	14,000	158.8	−53.0						
	15,000	136.3	−56.4						
	16,000	117.1	−59.8						
8:11	16,141	114.4	−60.3	0.34					Base of stratosphere.
	17,000	99.6	−60.5						
	18,000	85.0	−60.7						
	19,000	73.3	−60.9						
8:30	19,546	67.2	−61.0	0.02					

OKLAHOMA CITY, OKLA.

[90th mer.]

MARCH 15, 1928

Time	Altitude, M. S. L.	Pressure	Temperature	$\frac{\Delta t}{100\,m.}$	Humidity: Relative	Humidity: Vapor pressure	Wind: Direction	Wind: Velocity	Remarks
A. m.									
7:08	385	962.6	4.8		89	7.65	e.	10.0	10 St., E.
	500	949.2	4.1		90	7.37			
	750	920.3	2.7		91	6.75			
7:09	1,000	892.3	1.2	0.59	93	6.19			
	1,250	865.4	4.2		82	6.76			
	1,500	839.3	7.3		71	7.26			
7:11	1,511	838.2	7.4	−1.21	70	7.21			Inversion.
	2,000	786.7	5.7		82	7.51			
7:13	2,016	788.2	5.6	0.36	82	7.45			
7:14	2,503	742.5	5.4	0.04	70	6.28			
	3,000	698.5	1.4		68	4.60			
	3,500	656.2	−2.6		65	3.20			
7:18	3,569	650.6	−3.1	0.80	65	3.07			
	4,000	615.5	−6.4		66	2.36			
7:20	4,489	578.6	−10.1	0.76	68	1.77			
	4,500	577.7	−10.1		68	1.77			
7:21	4,909	548.1	−11.0	0.21	62	1.49			
	5,000	541.6	−11.8		61	1.36			
7:24	5,717	492.7	−17.9	0.85	50	0.64			
	6,000	474.5	−17.9		47	0.60			
7:25	6,069	470.0	−17.9	0.00	46	0.58			Isothermal.
	7,000	415.2	−25.0		40	0.26			
7:30	7,233	402.0	−26.8	0.76	38	0.20			
	8,000	352.0	−31.7		39	0.12			
7:35	8,729	325.9	−36.4	0.64	39	0.07			
	9,000	313.4	−38.7		39	0.06			
	10,000	270.6	−47.0		39	0.02			
7:39	10,018	270.0	−47.1	0.83	39	0.02			
7:43	10,905	236.3	−56.7	1.08	41	0.01			
	11,000	232.8	−56.7		41	0.01			
	12,000	200.1	−56.8		39	0.01			
	13,000	172.0	−56.9		38	0.01			
	14,000	147.6	−57.0		36	0.01			
7:54	14,663	132.3	−57.1	0.01	35	0.01			

TABLE 2.—*Tabulated data*—Continued

OKLAHOMA CITY, OKLA.—Continued

[90th mer.]

MARCH 15, 1928

Time	Altitude, M. S. L.	Pressure	Temperature	$\frac{\Delta t}{100\,m.}$	Humidity: Relative	Humidity: Vapor pressure	Wind: Direction	Wind: Velocity	Remarks
P. m.	*M.*	*Mb.*	°*C.*	°*C.*	*P. ct.*	*Mb.*		*M. p. s.*	
7:05	385	967.5	1.7		95	6.56	n.	5.4	10 St., N.
	500	953.8	1.0						
	750	924.3	−0.4						Light rain falling.
7:06	857	912.3	−1.0	0.57					
	1,000	895.8	−1.4						
	1,250	868.3	−2.0						
7:08	1,280	865.0	−2.1	0.26					
	1,500	841.2	−2.4						
7:10	1,928	797.3	−3.0	0.14					
	2,000	790.2	−3.0						
	2,500	741.7	−3.4						
7:12	2,541	737.9	−3.4	0.07					
	3,000	695.9	−5.6						
7:16	3,455	656.7	−7.7	0.47					
	3,500	653.2	−8.0						
	4,000	612.7	−11.5						
7:19	4,281	590.3	−13.5	0.70					
	4,500	573.6	−16.6						
7:22	4,994	537.0	−18.2	0.66					
	5,000	536.5	−18.2						
	6,000	469.0	−26.4						
7:27	6,031	467.0	−26.7	0.85					
	7,000	407.6	−35.6						
7:33	7,122	400.6	−36.7	0.91					Adiabatic.
7:34	7,365	386.6	−37.0	0.12					
	8,000	353.0	−40.6						
7:42	8,692	319.1	−44.6	0.57					
	9,000	304.9	−43.8						
7:49	9,779	271.9	−41.7	−0.27					Inversion.
	10,000	263.4	−42.2						
7:55	10,986	227.8	−44.6	0.24					
	11,000	227.4	−44.7						
	12,000	195.8	−49.1						
8:03	12,383	184.9	−50.8	−0.44					
	13,000	168.4	−54.5						
8:12	13,349	159.6	−56.6	0.60					Base of stratosphere.
	14,000	144.0	−58.1						
8:17	14,316	137.1	−58.8	0.23					
	15,000	122.4	−59.2						
8:26	15,643	111.4	−59.5	0.05					

ROSWELL, N. MEX.

[105th mer.]

MARCH 14, 1928

Time	Altitude, M. S. L.	Pressure	Temperature	$\frac{\Delta t}{100\,m.}$	Humidity: Relative	Humidity: Vapor pressure	Wind: Direction	Wind: Velocity	Remarks
P. m.									
5:52	1,098	879.8	16.4		53	9.89	nw.	8.0	1 A St., W.; 8 St. Cu., SW.
	1,250	864.3	14.9		53	8.98			
	1,500	839.1	13.4		53	8.15			
5:54	1,641	825.2	13.2	0.59	53	8.05			
5:56	1,936	796.6	10.5	0.92	53	6.73			Adiabatic.
	2,000	790.7	9.9		53	6.47			
	2,500	744.3	5.2		57	5.04			
5:59	2,835	714.0	2.0	0.95	60	4.23			Adiabatic.
	3,000	699.8	0.9		61	3.98			
	3,500	657.2	−2.6		63	3.11			
6:01	3,558	652.4	−3.0	0.69	63	3.01			
	4,000	616.9	−7.1		64	2.16			
6:04	4,477	579.8	−11.5	0.93	65	1.49			Adiabatic.
	4,500	577.8	−11.7		65	1.46			
	5,000	540.2	−16.3		66	0.98			
6:07	5,575	501.0	−21.6	0.92	67	0.60			Adiabatic.
	6,000	470.4	−25.4		66	0.41			
	7,000	406.5	−34.5		65	0.16			
6:12	7,093	401.1	−35.3	0.90	65	0.14			Adiabatic.
6:15	7,719	357.2	−35.3	0.00	63	0.13			Isothermal.
	8,000	352.7	−37.5		61	0.10			
	9,000	305.0	−45.6		54	0.04			
6:20	9,095	300.7	−46.3	0.80	53	0.03			
	10,000	262.8	−49.4		55	0.02			
6:23	10,514	243.2	−51.2	0.35	56	0.02			
	11,000	225.9	−51.1		56	0.02			
6:26	11,280	216.3	−51.0	−0.03	56	0.02			Inversion.
	12,000	193.5	−52.8		54	0.02			
6:31	12,688	174.4	−54.6	0.26	53	0.01			
	13,000	166.4	−55.6		53	0.01			
	14,000	143.0	−58.7		53	0.01			
	15,000	122.1	−61.8		53	0.01			
6:40	15,062	120.3	−62.0	0.31	53	0.01			Base of stratosphere.
	16,000	103.8	−62.0		53	0.01			
6:42	16,161	101.1	−62.0	0.00	53	0.01			
	17,000	88.3	−64.2		53				
6:46	17,272	84.6	−64.9	0.26	53				
	18,000	75.7	−65.1		55				
	19,000	65.0	−65.4		57				
	20,000	54.8	−65.6		59				
7:10	20,256	52.3	−65.7	0.03	60				

TABLE 2.—*Tabulated data*—Continued

ROSWELL, N. MEX.—Continued

[105th mer.]

MARCH 15, 1928

Time	Altitude, M. S. L.	Pressure	Temperature	$\frac{\Delta t}{100 m.}$	Humidity: Relative	Humidity: Vapor pressure	Wind: Direction	Wind: Velocity	Remarks
A. m.	*M.*	*Mb.*	°*C.*	°*C.*	*P.ct.*	*Mb.*		*M.p.s.*	
5:54	1,098	882.6	7.6	-------	68	7.93	nw.	4.9	6 St. Cu., W.
	1,250	866.3	7.2	-------	68	6.91	-------	-------	
5:55	1,462	844.3	6.6	0.27	68	6.62	-------	-------	
	1,500	840.5	6.2	-------	68	6.45	-------	-------	
	2,000	790.7	1.3	-------	70	4.70	-------	-------	
5:58	2,360	755.8	−2.3	0.99	72	3.64	-------	-------	Adiabatic.
	2,500	742.5	−3.3	-------	73	3.39	-------	-------	
	3,000	697.0	−6.7	-------	76	2.65	-------	-------	
6:01	3,368	664.8	−9.3	0.70	79	2.20	-------	-------	
	3,500	653.8	−9.3	-------	79	2.20	-------	-------	
6:02	3,566	648.0	−9.3	0.00	79	2.20	-------	-------	Isothermal.
	4,000	612.2	−12.7	-------	78	1.61	-------	-------	
	4,500	573.7	−16.7	-------	76	1.09	-------	-------	
6:06	4,949	540.5	−20.3	0.79	75	0.76	-------	-------	
	5,000	536.6	−20.7	-------	75	0.74	-------	-------	
	6,000	468.3	−28.3	-------	74	0.34	-------	-------	
6:10	6,220	454.3	−30.0	0.76	74	0.28	-------	-------	
	7,000	406.6	−38.4	-------	70	0.10	-------	-------	
6:13	7,088	401.3	−39.3	1.07	70	0.10	-------	-------	Superadiabatic.
6:14	7,552	375.2	−39.8	0.11	70	0.09	-------	-------	
	8,000	351.9	−44.6	-------	67	0.05	-------	-------	
6:19	8,134	344.9	−46.1	1.08	66	0.04	-------	-------	Superadiabatic.
	9,000	303.2	−42.9	-------	64	0.06	-------	-------	
6:22	9,515	281.6	−41.0	−0.37	63	0.07	-------	-------	Inversion.
	10,000	262.5	−41.7	-------	63	0.06	-------	-------	
	11,000	226.9	−43.2	-------	64	0.06	-------	-------	
	12,000	195.8	−44.8	-------	65	0.05	-------	-------	
	13,000	168.5	−46.3	-------	66	0.04	-------	-------	
6:32	13,019	168.0	−46.3	0.15	66	0.04	-------	-------	
6:34	13,956	145.7	−52.4	0.65	66	0.02	-------	-------	

SAN ANTONIO, TEX.

[90th mer.]

MARCH 14, 1928

P. m.									
7:35	230	980.5	24.0	-------	64	19.11	se.	5.8	10 St., NW.
	250	978.2	23.9	-------	64	19.00	-------	-------	
	500	950.5	22.1	-------	68	18.10	-------	-------	
	750	923.6	20.3	-------	72	17.16	-------	-------	

TABLE 2.—*Tabulated data*—Continued

SAN ANTONIO TEX.—Continued

[90th mer.]

MARCH 14, 1928—Continued

Time	Altitude, M. S. L.	Pressure	Temperature	$\frac{\Delta t}{100 m.}$	Humidity: Relative	Humidity: Vapor pressure	Wind: Direction	Wind: Velocity	Remarks
P. m.	*M.*	*Mb.*	°*C.*	°*C.*	*P.ct.*	*Mb.*		*M.p.s.*	
7:37	869	911.0	19.4	0.72	74	16.68	-------	-------	
	1,000	897.2	19.1	-------	68	15.04	-------	-------	
7:38	1,135	883.2	18.8	0.23	62	13.46	-------	-------	
	1,250	871.2	18.0	-------	62	12.80	-------	-------	
	1,500	846.0	16.3	-------	61	11.31	-------	-------	
7:41	1,880	809.3	13.6	0.70	60	9.35	-------	-------	
	2,000	797.8	13.6	-------	54	8.41	-------	-------	
7:45	2,352	765.3	13.6	0.00	37	5.76	-------	-------	Isothermal.
	2,500	752.4	12.7	-------	36	5.29	-------	-------	
	3,000	709.2	9.6	-------	30	3.58	-------	-------	
	3,500	667.0	6.5	-------	25	2.42	-------	-------	
7:52	3,546	663.1	6.2	0.62	25	2.37	-------	-------	
	4,000	626.8	1.5	-------	28	1.91	-------	-------	
7:58	4,447	593.2	−3.2	1.04	30	1.41	-------	-------	Superadiabatic.
	4,500	589.4	−3.7	-------	30	1.35	-------	-------	
	5,000	553.4	−8.7	-------	30	0.88	-------	-------	
8:06	5,254	535.1	−11.3	1.00	30	0.70	-------	-------	Adiabatic.
	6,000	485.7	−18.2	-------	28	0.35	-------	-------	
8:14	6,188	473.8	−19.9	0.92	27	0.28	-------	-------	Adiabatic.

MARCH 15, 1928

A. m.									
6:55	230	981.4	20.9	-------	90	22.26	se.	4.5	10 St., SE.
	250	979.0	20.7	-------	90	21.99	-------	-------	
6:56	478	953.6	18.8	0.85	95	20.62	-------	-------	
	500	951.0	18.9	-------	95	20.76	-------	-------	
	750	924.2	19.5	-------	93	21.09	-------	-------	
	1,000	897.6	20.1	-------	91	21.42	-------	-------	
6:59	1,150	882.3	20.5	−0.25	90	21.72	-------	-------	Inversion.
	1,250	872.2	20.0	-------	90	21.06	-------	-------	
	1,500	847.5	18.7	-------	90	19.42	-------	-------	
	2,000	799.3	16.1	-------	90	16.47	-------	-------	
	2,500	753.4	13.5	-------	90	13.93	-------	-------	
7:03	2,620	742.9	12.9	0.52	90	13.39	-------	-------	
	3,000	710.4	9.2	-------	90	10.48	-------	-------	
	3,500	668.5	4.4	-------	89	7.44	-------	-------	
7:07	3,666	654.8	2.8	0.96	89	6.65	-------	-------	Adiabatic.
	4,000	628.0	0.0	-------	89	5.44	-------	-------	
7:13	4,039	625.1	−0.3	0.83	89	5.30	-------	-------	

SUPERSATURATION AND ICING OF AIRPLANES

By W. J. HUMPHREYS

[Weather Bureau, Washington, June, 1930]

Aviators have reported occasional instances of very rapid icing of their planes while in flight. Even the term "explosive rapidity" has been used to indicate the apparent suddenness of this phenomenon. It also has been asserted that such exceptionally rapid accumulation is owing to supersaturation in an undercooled cloud with respect to any film of ice that may be on the wings and other portions of the "ship." This sounds learned and also fits the observations perfectly. But before accepting this enticing explanation as necessary and sufficient to account for the alleged facts let us first try on it the touchstone of figures.

Suppose, to be liberal, that the temperature is −10° C., the cloud particles still liquid droplets, and that the plane flying through this cloud has on it a film of ice. What will be the rate of ice accumulation on the front edge of the wings by condensation?

From the Smithsonian Physical Tables, and elsewhere, it appears that at −10° C. the vapor pressure over water is, in terms of the height of a balancing column of mercury, 2.144 millimeters, and over ice 1.964 millimeters, that is, less by 0.180 millimeters. Furthermore, from the same source we find that at −10° C. and in the presence of ice, the weight of vapor necessary to saturate a cubic meter is 2.158 grams. Hence the number of grams of water vapor necessary to add to a cubic meter saturated at −10° C. in the presence of ice, to render it saturated at the same temperature in the presence of only undercooled water is given by the equation

$$\frac{180}{1964}=\frac{x}{2.158}$$

from which x, the amount in question, is .198 grams, nearly. It may be argued that as this applies to water having a flat surface, the standard for saturation determinations, the difference in the presence of droplets only, as in a cloud, would be greater. This is true, but for droplets of this size the difference is negligibly small.

If, then, a plane caught up all the excess, or supersaturation, vapor "encountered" in passing through a cloud undercooled to −10° C. the load would be .198 grams per square centimeter vertical cross section, per