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

Standard pressure surface (mb.)	Tampa, Fla. (1,016.8 mb.)				Tatoosh Island, Wash. (1,011.8 mb.)				Toledo, Ohio (996.5 mb.)				Washington, D. C. (1,018.8 mb.)			
	Number of observations	Height	Temperature	Relative humidity	Number of observations	Height	Temperature	Relative humidity	Number of observations	Height	Temperature	Relative humidity	Number of observations	Height	Temperature	Relative humidity
Surface	26	9	21.1	86	30	31	6.6	84	30	191	5.8	81	30	25	10.9	67
1,000	26	153	21.1	84	30	127	(*)	----	30	160	(*)	----	30	180	10.6	63
950	26	598	18.8	81	30	550	4.2	75	30	583	6.0	72	30	608	8.6	61
900	26	1,060	16.0	81	30	984	1.8	74	30	1,024	4.8	63	30	1,053	7.3	55
850	26	1,545	13.1	78	30	1,443	−.7	71	30	1,490	3.7	51	30	1,522	6.1	48
800	26	2,053	10.9	65	30	1,925	−3.1	69	30	1,981	1.9	50	30	2,018	4.9	41
750	26	2,591	8.3	56	30	2,442	−5.4	60	30	2,506	.0	52	30	2,548	2.9	40
700	26	3,156	5.8	46	30	2,973	−8.2	56	30	3,051	−1.9	53	30	3,099	.3	37
650	26	3,762	2.9	----	30	3,553	−11.2	52	29	3,640	−4.6	46	30	3,695	−2.6	36
600	26	4,404	−.6	----	30	4,156	−14.5	50	29	4,265	−8.0	44	30	4,321	−6.0	----
550	26	5,093	−4.6	----	30	4,813	−18.2	48	29	4,936	−12.2	----	30	4,999	−10.2	----
500	26	5,837	−9.5	----	30	5,516	−22.8	----	29	5,659	−16.8	----	30	5,726	−14.7	----
450	26	6,645	−15.0	----	30	6,286	−27.7	----	29	6,445	−22.1	----	30	6,521	−20.3	----
400	26	7,522	−21.1	----	30	7,119	−33.0	----	29	7,299	−28.8	----	30	7,379	−26.5	----
350	25	8,491	−28.3	----	26	8,070	−38.2	----	28	8,242	−34.8	----	30	8,329	−34.1	----
300	25	9,577	−36.7	----	26	9,116	−44.5	----	28	9,300	−42.7	----	30	9,389	−42.4	----
250	25	10,814	−46.1	----	22	10,317	−50.4	----	24	10,506	−51.3	----	28	10,605	−51.4	----
200	24	12,262	−56.8	----	7	11,754	−53.5	----	21	11,924	−59.3	----	23	12,041	−60.0	----
175	23	13,093	−62.1	----	----	----	----	----	18	12,771	−60.5	----	20	12,884	−62.8	----
150	19	14,043	−65.7	----	----	----	----	----	15	13,755	−61.4	----	17	13,847	−64.9	----
125	12	15,165	−70.3	----	----	----	----	----	8	14,870	−62.5	----	8	14,924	−65.2	----

[1] Data not yet received.

(*) Temperature and relative humidity data for this level are not available or are available only for certain days. See note entitled "Change in Summarization of Radiosonde Data," p. 6, in the January 1946 issue of the MONTHLY WEATHER REVIEW.

NOTE.—All observations scheduled between 0300 and 0500, G. C. T. except at Ciudad Victoria, Mazalan, and Merida, where they are taken near 0200, G. C. T.

"Number of observations" refers to those of dynamic height only. (In a few cases temperature or humidity data may be missing for one or more standard pressure surfaces of some observations.) Relative humidity data are not published for standard pressure surfaces having a corresponding mean temperature below −20° C.

All relative humidity observations are obtained by electric hygrometer and have been adjusted to compensate for the values occurring below the operating range of the humidity element. For explanation of the adjustment see article entitled "Curve Method for Obtaining Monthly Means of Relative Humidity," p. 241, MONTHLY WEATHER REVIEW, December 1944.

None of the means included in these tables are based on less than 15 observations at the surface or 5 observations at a standard pressure level.

LATE REPORT FOR HAVANA, CUBA

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

STATION AND MEAN SURFACE PRESSURES

Standard pressure surface (mb.)	Havana, Cuba (1,007.2 mb.)			
	Number of observations	Height	Temperature	Relative humidity
Surface	28	50	23.9	88
1,000	28	116	24.3	85
950	28	567	21.6	83
900	28	1,032	18.9	77
850	28	1,521	16.0	76
800	28	2,035	13.2	71
750	28	2,582	11.6	47
700	28	3,151	8.7	46
650	28	3,764	5.3	43
600	28	4,411	1.5	39
550	28	5,108	−2.2	36

Standard pressure surface (mb.)	Havana, Cuba (1,007.2 mb.)			
	Number of observations	Height	Temperature	Relative humidity
500	28	5,859	−6.6	----
450	28	6,679	−12.0	----
400	28	7,567	−18.1	----
350	28	8,550	−25.6	----
300	27	9,646	−34.3	----
250	26	10,894	−44.6	----
200	23	12,354	−56.1	----
175	16	13,194	−62.7	----
150	12	14,116	−68.7	----
125	6	15,158	−72.6	----

TABLE 2.—*Free-air resultant winds based on pilot balloon observations made near 5 p. m., E. S. T. (2200 G. C. T.) during November 1946. Directions given in degrees from north (N=360°, E=90°, S=180°, W=270°). Velocities in meters per second*

Altitude (meters) m. s. l.	Abilene, Tex. (534 m.)			Albuquerque, N. Mex. (1,630 m.)			Atlanta, Ga. (299 m.)			Billings, Mont. (1,095 m.)			Bismarck, N. Dak. (512 m.)			Boise, Idaho (868 m)			Brownsville, Tex. (7 m.)			Buffalo, N. Y. (220 m.)			Burlington, Vt. (100 m.)			Charleston, S. C. (16 m.)			Cincinnati, Ohio (150 m.)			Denver, Colo. (1,627 m.)			El Paso, Tex. (1,198 m.)		
	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity
Surface	26	190	2.0	29	236	0.7	26	38	1.8	28	300	2.1	28	289	3.2	27	317	0.8	28	73	0.9	27	240	4.0	26	242	1.5	29	49	1.6	28	218	1.6	26	149	1.2	30	232	1.3
500	---	---	---	---	---	---	26	49	1.6	---	---	---	---	---	---	---	---	---	28	86	.6	27	237	6.5	26	230	5.2	28	85	2.3	28	211	3.4	---	---	---	---	---	---
1,000	26	208	3.1	---	---	---	26	89	2.0	---	---	---	27	298	4.6	27	321	.7	23	263	.4	26	247	10.2	25	252	7.6	23	123	1.6	26	225	5.8	---	---	---	---	---	---
1,500	26	232	4.1	---	---	---	23	198	2.3	28	263	5.0	24	288	5.7	27	256	1.4	15	185	3.0	19	258	11.8	19	273	10.0	21	276	1.6	24	253	6.8	---	---	---	30	243	1.8
2,000	26	244	5.9	29	221	1.6	21	267	1.9	28	263	7.2	22	284	8.3	26	260	3.1	13	190	3.8	17	267	13.4	18	285	12.3	21	270	3.5	22	257	8.6	26	167	1.8	29	244	2.6
2,500	25	251	7.8	28	242	3.4	19	295	3.2	26	268	9.7	20	286	9.0	24	251	4.3	10	246	1.3	15	269	14.7	13	289	18.5	21	262	5.0	19	266	9.0	26	215	1.4	28	241	5.0
3,000	23	254	9.6	28	256	5.7	17	295	4.9	26	289	10.6	20	289	9.5	23	260	3.9	---	---	---	11	265	15.0	---	---	---	20	260	5.5	18	276	10.6	23	258	4.6	27	250	8.5
4,000	23	256	11.9	22	267	9.6	15	284	8.1	19	282	10.9	20	284	12.5	15	313	2.4	---	---	---	---	---	---	---	---	---	19	264	7.7	10	282	9.6	23	273	9.0	27	254	11.7
5,000	23	251	13.3	21	262	11.6	15	270	9.1	17	287	9.8	19	284	14.6	11	19	4.4	---	---	---	---	---	---	---	---	---	19	267	9.3	---	---	---	21	271	15.7	26	251	15.2
6,000	22	253	15.5	20	261	14.9	14	273	11.5	15	321	8.5	17	278	16.0	---	---	---	---	---	---	---	---	---	---	---	---	16	270	9.4	---	---	---	21	266	17.4	24	255	14.2
8,000	13	254	13.0	17	274	12.8	---	---	---	10	354	6.3	12	284	10.8	---	---	---	---	---	---	---	---	---	---	---	---	15	277	14.6	---	---	---	13	271	13.8	22	255	21.2
10,000	---	---	---	14	265	20.9	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	13	265	23.8
12,000	---	---	---	11	268	30.2	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Altitude (meters) m. s. l.	Ely, Nev. (1,910 m.)			Grand Junction, Colo. (1,475 m.)			Greensboro, N. C. (271 m.)			Havre, Mont. (767 m.)			Jacksonville, Fla. (16 m.)			Joliet, Ill. (178 m.)			Las Vegas, Nev. (575 m.)			Little Rock, Ark. (88 m.)			Medford, Oreg. (416 m.)			Miami, Fla. (12 m.)			Mobile, Ala. (66 m.)			Nashville, Tenn. (194 m.)			New York, N. Y. (15 m.)		
	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity
Surface	30	360	0.5	30	309	1.8	27	326	0.7	29	262	2.6	28	52	3.2	27	229	3.5	30	60	2.1	26	149	0.7	28	288	0.7	30	87	3.0	25	61	1.5	27	180	1.0	29	286	3.0
500	---	---	---	---	---	---	27	269	.7	---	---	---	28	71	4.2	27	226	5.0	---	---	---	26	180	1.1	28	272	.5	30	80	5.9	25	96	1.9	27	186	2.3	29	276	4.3
1,000	---	---	---	---	---	---	27	231	1.8	29	267	4.4	22	87	1.6	24	240	7.8	30	57	2.1	23	178	2.8	28	192	1.1	30	78	5.2	15	86	1.9	25	204	2.1	27	275	7.1
1,500	---	---	---	30	305	1.8	23	277	3.1	29	269	7.3	17	187	.7	21	263	8.6	30	14	.1	23	215	4.0	27	192	2.1	30	73	3.7	14	75	1.4	23	255	3.9	25	286	9.8
2,000	30	261	.1	30	247	1.3	23	281	4.9	26	283	8.4	14	267	2.2	18	281	11.0	28	223	2.1	20	236	4.2	24	213	3.7	28	66	2.2	13	335	1.6	23	268	5.1	22	291	11.4
2,500	30	225	1.1	29	221	2.2	21	282	7.2	18	283	10.0	11	248	3.5	16	283	13.6	26	258	3.1	19	254	5.1	19	243	1.9	25	80	1.6	11	347	2.9	23	271	6.2	17	278	12.0
3,000	26	258	3.2	27	220	4.0	21	288	8.6	17	286	11.1	11	258	3.0	16	287	14.8	25	273	3.8	16	278	6.6	15	9	1.7	23	67	1.4	10	310	3.1	20	264	7.0	13	283	11.8
4,000	18	297	6.3	23	249	8.8	20	283	12.3	14	287	9.4	10	256	4.9	14	288	18.3	22	285	5.7	16	281	9.5	13	14	4.4	19	347	.7	---	---	---	19	258	10.8	---	---	---
5,000	18	286	7.6	17	269	10.7	18	275	13.4	---	---	---	10	256	6.7	---	---	---	22	296	8.1	13	278	10.8	---	---	---	17	334	1.8	---	---	---	17	264	12.5	---	---	---
6,000	15	287	9.6	15	268	11.9	16	274	13.2	---	---	---	---	---	---	---	---	---	22	313	8.8	---	---	---	---	---	---	15	310	4.8	---	---	---	15	269	14.0	---	---	---
8,000	13	302	13.0	---	---	---	13	279	14.9	---	---	---	---	---	---	---	---	---	17	310	11.0	---	---	---	---	---	---	10	287	1.7	---	---	---	---	---	---	---	---	---
10,000	---	---	---	---	---	---	10	281	19.4	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Altitude (meters) m. s. l.	Oakland, Calif. (8 m.)			Oklahoma City, Okla. (396 m.)			Omaha, Nebr. (306 m.)			Phoenix, Ariz. (338 m.)			Rapid City, S. Dak. (982 m.)			St. Louis, Mo. (181 m.)			St. Paul, Minn. (225 m.)			San Antonio, Tex. (240 m.)			San Diego, Calif. (13 m.)			Sault Ste. Marie, Mich. (225 m.)			Seattle, Wash. (116 m.)			Spokane, Wash. (603 m.)			Washington, D. C. (24 m.)		
	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	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	260	1.7	26	182	2.4	28	318	1.0	30	158	0.4	28	335	1.6	24	242	1.2	28	266	1.4	30	39	1.6	26	257	3.1	20	259	1.4	29	272	0.2	27	189	1.4	29	268	1.7
500	29	309	.9	26	184	3.0	28	298	1.5	30	136	.2	---	---	---	24	235	3.4	28	264	1.7	30	36	1.6	26	261	2.6	20	243	3.0	28	188	2.0	---	---	---	29	260	3.9
1,000	26	7	1.5	25	210	4.4	28	273	3.6	30	125	.6	28	335	1.7	23	235	5.8	27	260	4.2	27	62	.9	24	233	.4	16	259	6.5	22	194	4.4	27	199	2.0	28	262	6.3
1,500	25	342	1.3	24	240	6.8	22	254	7.3	30	164	2.2	28	298	4.3	20	257	7.3	22	262	7.6	23	283	.5	24	260	.1	11	263	10.7	19	201	4.4	18	204	2.0	27	267	8.8
2,000	24	312	3.5	24	253	8.6	22	260	9.7	29	179	2.7	25	288	6.2	18	275	9.2	19	265	11.0	21	268	1.9	23	17	.7	10	279	10.2	16	216	5.3	16	263	3.0	26	273	9.8
2,500	23	299	3.7	23	258	10.0	22	266	10.6	29	214	2.2	23	287	7.7	18	275	9.5	19	276	11.5	20	258	4.6	21	317	1.2	---	---	---	14	220	5.5	13	264	4.3	25	279	11.1
3,000	22	301	3.5	23	260	11.9	22	270	11.5	26	245	2.5	22	287	9.0	17	278	12.0	17	280	11.6	18	249	4.9	19	320	3.8	---	---	---	13	240	4.5	12	262	5.1	24	281	12.7
4,000	19	299	6.6	23	254	13.4	20	271	16.5	23	286	5.4	21	282	10.0	14	279	12.0	14	285	18.8	17	243	6.5	16	315	6.6	---	---	---	11	269	3.2	12	291	5.9	23	279	17.0
5,000	16	308	9.0	22	262	13.2	19	265	19.9	22	278	9.3	18	284	10.6	13	280	14.9	11	282	18.8	12	252	13.4	15	300	7.4	---	---	---	---	---	---	---	---	---	22	279	19.0
6,000	14	296	10.4	16	272	12.0	17	263	22.6	19	282	13.5	17	282	12.8	---	---	---	---	---	---	12	249	14.6	15	284	9.2	---	---	---	---	---	---	---	---	---	19	284	20.2
8,000	---	---	---	10	274	15.7	---	---	---	15	270	15.0	11	264	14.6	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	10	291	18.4
10,000	---	---	---	---	---	---	---	---	---	12	264	18.2	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

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

Section	Surface to 2,500 meters (m. s. l.)					2,501 to 5,000 meters (m. s. l.)					Above 5,000 meters (m. s. l.)				
	Maximum velocity	Direction	Altitude (m.) m. s. l.	Date	Station	Maximum velocity	Direction	Altitude (m.) m. s. l.	Date	Station	Maximum velocity	Direction	Altitude (m.) m. s. l.	Date	Station
Northeast [1]	56.9	nw.	2,085	5	Boston, Mass	61.4	wnw.	5,000	27	Columbus, Ohio	84.7	nw.	10,172	10	Caribou, Maine.
East-Central [2]	42.7	sw.	1,904	26	Washington, D. C	54.4	w.	4,112	22	Elkins, W. Va	78.0	w.	11,571	28	Greensboro, N. C.
Southeast [3]	26.0	wnw.	2,500	8	Spartanburg, S. C	29.7	w.	4,107	8	Spartanburg, S. C	63.0	s.	21,921	1	Charleston, S. C.
North-Central [4]	47.5	s.	1,023	18	Marquette, Mich	49.2	wnw.	4,900	28	St. Paul, Minn.	73.6	wnw.	9,502	27	Milwaukee, Wis.
Central [5]	52.6	sw.	1,836	21	Omaha, Nebr	58.2	nw.	2,823	10	Goodland, Kans	74.0	wsw.	12,871	20	Springfield, Mo.
South-Central [6]	38.5	wsw.	1,714	24	Amarillo, Tex	43.5	wsw.	5,000	6	Abilene, Tex	104.0	wnw.	14,063	12	Little Rock, Ark.
Northwest [7]	36.5	sse.	1,671	23	Boise, Idaho	51.2	nnw.	5,000	1	Tatoosh Is., Wash	72.0	nnw.	6,556	1	Ellensburg, Wash.
West-Central [8]	40.4	s.	2,467	20	Salt Lake City, Utah	56.4	wnw.	4,127	21	Cheyenne, Wyo	63.5	sw.	10,294	8	Grand Junction, Colo.
Southwest [9]	28.7	nw.	2,105	2	Las Vegas, Nev	48.3	sw.	5,000	8	El Paso, Tex	82.5	sw.	7,789	8	Winslow, Ariz.

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