TABLE 3.—*Free-air resultant winds based on rawin observations made near 0300 G. C. T., during September 1949. Directions given in degrees from north (N=360°, E=90°, S=180°, W=270°). Speeds in meters per second*—Continued

Altitude (meters) m. s. l.	Miami, Fla. (12 m.)			Nantucket, Mass. (14 m.)			Nashville, Tenn. (180 m.)			New Orleans, La. (6 m.)			Oakland, Calif. (8 m.)			Oklahoma City, Okla. (392 m.)			Rapid City, S. Dak. (980 m.)			San Antonio, Tex. (242 m.)			San Juan, P. R. (28 m.)			St. Cloud, Minn. (318 m.)			Santa Maria, Calif. (72 m.)			Sault Ste. Marie, Mich. (221 m.)			Spokane, Wash. (726 m.)		
Surface	30	100	1.7	30	250	0.9	30	248	0.4	30	124	2.5	30	280	3.6	30	113	2.7	30	350	0.9	30	103	3.1	29	112	2.1	30	273	0.6	30	271	2.0	30	267	0.6	30	195	0.9
500	30	116	4.7	30	242	3.4	30	102	.5	29	93	3.6	29	278	3.7	28	118	3.1	---	---	---	30	113	5.3	29	100	5.9	30	254	2.3	30	328	3.0	30	246	4.0	---	---	---
1,000	30	120	4.6	30	247	4.7	30	202	1.6	29	84	3.8	29	280	3.3	28	154	4.7	30	350	.9	30	109	4.9	29	98	6.2	30	271	5.9	30	340	2.6	30	258	7.3	30	205	.6
1,500	30	122	3.6	30	239	5.8	30	246	2.4	29	69	3.4	29	278	2.1	28	161	3.2	30	313	1.7	30	96	3.5	29	98	6.0	29	283	8.2	30	16	1.2	28	265	8.3	30	260	1.4
2,000	30	126	3.2	30	245	7.5	30	271	3.9	29	66	1.9	29	251	1.5	30	229	3.6	30	293	3.5	30	99	2.1	29	95	5.6	29	292	8.4	30	41	.3	28	272	9.3	30	265	1.7
2,500	30	133	3.4	30	248	7.9	30	279	4.9	29	50	.9	29	250	2.2	30	250	3.3	30	286	5.9	30	87	1.4	29	93	5.6	29	288	8.7	30	254	1.6	28	273	10.2	29	278	2.1
3,000	30	129	3.6	30	248	8.9	30	274	6.1	29	32	.9	29	249	2.5	30	272	3.2	30	284	8.0	30	27	.6	29	93	5.6	29	291	9.8	30	246	3.3	28	274	11.1	29	276	3.2
4,000	30	128	3.0	29	243	10.5	30	285	8.3	28	273	2.0	29	262	2.4	29	310	4.5	30	288	12.0	30	60	1.3	29	89	4.9	28	292	11.9	28	246	5.9	28	277	13.2	29	267	5.4
5,000	29	124	2.3	28	243	12.1	30	285	10.7	27	307	4.5	28	260	3.8	29	309	5.6	29	293	12.7	29	277	.3	28	89	3.4	27	291	13.8	28	249	7.6	28	276	14.3	28	277	5.9
6,000	29	89	1.6	27	243	13.2	29	280	11.8	26	301	4.0	26	253	6.5	29	303	8.0	28	295	16.3	28	233	1.9	27	103	3.4	26	289	15.4	28	247	9.1	26	277	15.3	28	285	6.6
8,000	28	34	1.7	21	246	19.2	29	278	16.0	24	278	6.4	24	265	10.7	27	298	12.0	24	281	16.6	27	270	4.8	27	125	2.2	22	290	17.1	27	257	14.2	25	280	19.5	24	310	4.9
10,000	28	11	3.0	---	---	---	29	277	21.9	23	242	11.6	22	263	12.4	26	260	16.5	18	278	17.0	26	288	7.5	27	135	.2	20	283	18.0	23	255	18.8	18	285	20.2	21	307	2.8
12,000	28	329	5.3	---	---	---	26	276	25.5	22	261	12.5	18	265	16.5	24	248	19.2	15	273	19.0	24	264	11.8	26	332	1.9	16	284	18.7	16	258	18.9	14	289	19.2	17	293	7.3
14,000	24	336	6.6	---	---	---	13	281	28.9	16	285	13.3	---	---	---	17	253	16.0	11	272	15.3	17	296	15.3	22	332	1.2	12	300	17.3	14	263	16.8	---	---	---	13	295	7.5
16,000	13	14	2.9	---	---	---	---	---	---	11	272	8.5	---	---	---	---	---	---	---	---	---	10	266	10.7	18	66	3.8	---	---	---	---	---	---	---	---	---	---	---	---

Altitude (meters) m. s. l.	Tatoosh Island, Wash. (33 m.)		
	Observations	Direction	Speed
Surface	30	186	2.0
500	30	266	1.4
1,000	30	261	1.5
1,500	30	247	1.5
2,000	30	265	2.0
2,500	29	274	2.5
3,000	28	286	3.0

Altitude (meters) m. s. l.	Tatoosh Island, Wash. (33 m.)		
	Observations	Direction	Speed
4,000	28	283	4.1
5,000	28	284	4.4
6,000	26	288	4.5
8,000	25	300	4.1
10,000	21	288	5.5
12,000	16	273	4.4

NOTE.—Resultants prepared from rawins at high altitudes are biased toward lower wind speeds. Values appearing in this table should therefore be used with caution when the number of observations missing is greater than three. See note following Table 3 in the June 1948 issue of the MONTHLY WEATHER REVIEW.

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TABLE 1

Standard pressure surface (mb.)	Swan Island, W. I. (1,013.0 mb.)			
	Number of observations	Dynamic height	Temperature	Relative humidity
Surface	31	10	27.4	81
1,000	31	124	26.6	82
950	31	580	23.6	82
900	31	1,049	20.8	80
850	31	1,542	18.0	73
800	31	2,060	15.2	65
750	31	2,609	12.3	55
700	31	3,181	9.3	54
650	31	3,796	5.8	52
600	31	4,443	2.1	49
550	31	5,141	−1.8	45
500	31	5,893	−6.2	42

Standard pressure surface (mb.)	Swan Island, W. I. (1,013.0 mb.)			
	Number of observations	Dynamic height	Temperature	Relative humidity
450	31	6,719	−11.4	37
400	31	7,603	−17.7	39
350	31	8,588	−24.6	----
300	31	9,691	−32.7	----
250	31	10,949	−42.4	----
200	31	12,419	−54.2	----
175	29	13,261	−60.5	----
150	24	14,201	−66.5	----
125	19	15,298	−71.5	----
100	16	16,611	−73.0	----
80	6	17,931	−70.6	----

RIVER STAGES AND FLOODS FOR SEPTEMBER 1949

No major floods occurred during September. Most of the flooding was due to flash rises in several areas resulting from heavy showers. The most destructive of these occurred in Bernalillo, N. Mex., during the early morning hours of the 30th. These floods were not as destructive as those which occurred during June but were more destructive and numerous than one year ago.

Atlantic slope drainage.—Heavy rains (2 to 3 inches) during the latter part of the first week in the headwaters caused light flooding on the Saluda at Pelzer and Chappells, S. C., and on the Broad River at Blairs, S. C. No damages resulted.

East Gulf of Mexico drainage.—Very heavy rains (up to 5 inches or more) in the headwater streams of the Chattahoochee River, caused widespread flooding from Norcross, Ga., northeastward on the 5th and 6th. Most of the tributaries and the main channel of the Chattahoochee above Norcross reached flash flood proportions shortly after the rains. No important high water occurred below Norcross on the Chattahoochee or at other points on major streams. Considerable damage resulted from these flash floods.

Heavy rains over the headwater areas during the 24-hour period ending at 7 a. m. on the 6th caused moderate to sharp rises over the Etowah, Oostanaula and upper Coosa Rivers, with light flooding on the Etowah River at Canton, Ga. No damages resulted from the high water.