

TABLE 3.—Maximum free air wind velocities (m. p. s.), for different sections of the United States based on pilot balloon observations during January 1945

Section	Surface to 2,500 meters (m. s. l.)				Above 2,500 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	44.2	NW.	429	24	New York, N. Y.	57.6	WNW.	4,075	5	Buffalo, N. Y.	62.7	NW.	9,592	19	Portland, Maine.
East-Central ²	52.8	NW.	1,821	24	Lynchburg, Va.	50.1	WSW.	3,090	21	Knoxville, Tenn.	75.0	WNW.	7,405	21	Knoxville, Tenn.
Southeast ³	41.2	W.	818	23	Charleston, S. C.	45.0	WNW.	4,873	31	Birmingham, Ala.	85.0	WNW.	11,022	11	Charleston, S. C.
North-Central ⁴	39.4	NW.	1,608	23	Duluth, Minn.	54.0	NNW.	4,080	24	S. Ste. Marie, Mich.	64.8	NW.	5,710	23	St. Paul, Minn.
Central ⁵	40.8	N.	2,500	10	Wichita, Kans.	47.2	NW.	4,311	23	St. Louis, Mo.	64.0	WNW.	6,206	1	St. Louis, Mo.
South-Central ⁶	37.9	WNW.	2,280	19	Lake Charles, La.	48.0	NW.	4,763	1	Little Rock, Ark.	65.0	WSW.	13,315	26	San Antonio, Tex.
Northwest ⁷	37.9	WNW.	1,640	13	Glasgow, Mont.	56.0	W.	4,979	13	Great Falls, Mont.	78.8	NW.	9,655	8	Glasgow, Mont.
West-Central ⁸	33.3	NW.	2,489	8	Cheyenne, Wyo.	45.5	NW.	3,716	8	Pueblo, Colo.	60.0	NNW.	10,248	21	Oakland, Calif.
Southwest ⁹	26.4	WNW.	2,500	24	El Paso, Tex.	43.5	WNW.	4,915	21	Raton, N. Mex.	59.6	WNW.	9,113/9,393/9,638	19	Red Bluff, Calif.

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 C. R. JORDAN

PRECIPITATION was above normal during January in southern Texas, the central Great Plains, the Northeast, much of the Florida Peninsula, and a few scattered local areas. Rainfall was notably deficient over a large area from the Lake region southward over the Ohio Valley and in the area from Montana southwestward through California.

No severe or extensive flooding occurred during the month but light to moderate flooding was reported at widely scattered points throughout the country. Drought conditions continue in a large area from Arkansas to the Great Lakes with conditions particularly acute in Ohio and Indiana.

An above-normal snow cover has accumulated during the winter in Pennsylvania, New York, and New England and in some locations, the water on the ground in form of snow at the end of January was nearly as great and in some cases greater than the accumulation prior to the unprecedented floods of March 1936. Several periods of mild weather and moderate rainfall during February served to eliminate much of the snow cover in Pennsylvania and western and southern New York. Only minor flooding resulted in the upper Ohio River drainage and in portions of the Susquehanna Basin. The snow depths in northeastern New York and in central and northern New England decreased slightly in February but the density increased and in some instances there was an actual increase in water content.

The large accumulation of snow in the Northeast up to early in February resulted from a moderately above normal precipitation, but especially from persistent cold

Average snow depths and water equivalents over representative basins on January 31 or early February

Basin	Average snow depth	Average water content
	Inches	Inches
Penobscot (headwaters)	30	7.00
Androscoggin (headwaters)	35	8.60
Saco (headwaters)	40	8.85
Merrimack (above Concord, N. H.)	28	5.00
Connecticut:		
(In valley area)	24-36	4 to 5
(In mountain areas)	30-60	6 to 8
Sacandaga	30	5.90
Lehigh	19	3.40
Susquehanna:		
(Above Towanda, Pa.)	17	4.40
(Below Towanda, Pa.)	16	3.50
Allegheny:		
(Above Warren, Pa.)	30	6.50
(Below Warren, Pa.)	22	4.00
Monongahela:		
(Above Morgantown, W. Va.)	5	1.00
(Below Morgantown, W. Va.)	12	2.50

without thaw. The precipitation from November 1944 through January 1945, ranged from 102 percent in Pennsylvania to 114 percent of normal in New England. Temperatures on the other hand ranged from 2 to 4 degrees below normal. Reports indicate little or no frozen ground in the regions of heavy snow cover.

Atlantic Slope Drainage.—There was some light overflow of the Pemigewasset River at Plymouth, N. H., on January 2 that resulted for the most part from backwater from an ice gorge below the gage. The Schuylkill River at Philadelphia, Pa.; the James River at Columbia, Va.; and the Roanoke River at Weldon and Williamston, N. C., exceeded flood stages slightly during the early part of the month. Overflow was very local and no damage was reported.

East Gulf of Mexico Drainage.—Moderate to heavy general rain over the upper Tombigbee watershed during the last week of December 1944 produced a steady rise in the Tombigbee River. Flood stage was slightly exceeded at Lock No. 3 on the 4th and 5th after which the stream receded slowly until heavy rains on January 6-7 started a second rise in both the Warrior and Tombigbee Rivers. The Tombigbee River at Lock No. 3 exceeded flood stage by several feet. The only damage reported occurred north of Aberdeen, Ala., where it is estimated that damage to roads and bridges amounted to \$1,000.

The rainfall of January 6-7 also caused the Pearl River to rise slightly above flood stage at Pearl River, La., but no damage was reported.

MISSISSIPPI SYSTEM

Ohio Basin.—A few days of warm weather at the end of December followed by moderately heavy rain over the Ohio Valley on December 31-January 1 produced sharp rises in the main stream and tributaries with light to moderate flooding at a number of points throughout the basin as shown by the table at the end of this report. Overflow was not serious. High stages in the Green and Barren Rivers were aggravated and prolonged by additional rain on January 7-8. Some loss, consisting chiefly of matured crops of corn, were reported in the upper Green and Barren Rivers. There were also some losses of crops and livestock and damage to highways, bridges, etc., in the Cumberland River Basin. Losses were estimated at \$14,500 in the Green and Barren basins and \$40,950 in the Cumberland Basin.

Red Basin.—The Ouachita River at Camden, Ark., was above flood stage from December 29 to January 10, as a result of heavy rains in the area during the last week of December.

Light overflow of the Sulphur River at Hagansport and Naples, Tex., and the Cypress River at Jefferson, Tex., occurred at the same time.

Lower Mississippi Basin.—Moderate to heavy rains in western Tennessee from December 27 through 31, amounting to about 9 inches, caused the Wolf River to rise steadily to a crest of 11 feet on January 2 at Rossville, Tenn. Loss resulting from the overflow amounted to \$1,800.

During the same period, rainfall over the upper Yazoo Basin averaged about 8 inches with a few stations reporting totals of more than 10 inches. Flood stages were passed on the Coldwater River at Sarah, Miss., and the Tallahatchie River at Swan Lake, Miss. Damage resulting from this overflow was estimated at \$10,000 and was confined mostly to highways and bridges with some loss due to suspension of business.

West Gulf of Mexico Drainage.—Heavy rains on December 30-31 and again on January 17-18 caused sharp rises in streams already high for the season in eastern Texas and western Louisiana and flood stages were exceeded at scattered stations along the Calcasieu, Sabine, Trinity, and Guadalupe Rivers. Overflow was not serious and little damage was reported. Losses to livestock and other movable property in the vicinity of Liberty, Tex., were estimated at \$5,000.

Pacific Slope Drainage.—Moderate rain augmented by water from melting snow produced above average stream flow in Oregon during January. The Santiam River just reached flood stage at Jefferson, Oreg., on the night of January 7-8. Otherwise, no flooding occurred.

FLOOD STAGE REPORT FOR JANUARY 1945

(All dates in January unless otherwise specified)

River and station	Flood stage	Above flood stages— dates		Crest ¹	
		From—	To—	Stage	Date
ATLANTIC SLOPE DRAINAGE					
	<i>Feet</i>			<i>Feet</i>	
Pemigewasset: Plymouth, N. H.	11	2	3	* 13.2	2
Schuylkill: Philadelphia, Pa.	11	1	1	11.1	1
James: Columbia, Va.	10	2	4	12.8	3
Roanoke:					
Weldon, N. C.	31	3	4	32.0	3
Williamston, N. C.	10	7	20	10.8	12-14
EAST GULF OF MEXICO DRAINAGE					
Tombigbee: Lock No. 3, Ala.	33	4 7	5 15	33.3 40.6	4 11
Pearl: Pearl River, La.	12	16 11	16 15	33.0 12.9	16 13
MISSISSIPPI SYSTEM					
<i>Ohio Basin</i>					
West Fork:					
Weston, W. Va.	15	1	2	17.0	2
Clarksburg, W. Va.	5	1	1	6.2	1
Monongahela:					
Lock No. 7, Greensboro, Pa.	30	1	1	30.2	1
Lock No. 6.	19.5	2	2	20.5	2
Lock No. 2.	20.5	1	3	25.4	2
Little Kanawha:					
Glenville, W. Va.	23	1	2	25.7	1
Creston, W. Va.	20	1	2	22.4	1
Elk: Clay, W. Va.	18			18.6	1
Barren: Bowling Green, Ky.	28	1	5	39.5	3
Green:					
Munfordsville, Ky.	28	1	5	39.5	3
Lock No. 6, Brownsville, Ky.	28	1	6	35.2	4
Lock No. 4, Woodbury, Ky.	33	Dec. 31	11	44.9	5
Lock No. 2, Rumsey, Ky.	34	16	16	33.0	11
Cumberland:		4	21	39.2	16-12
Celina, Tenn.	28	Dec. 31	6	38.8	4
Nashville, Tenn.	40	1	7	43.1	2
Clarksville, Tenn.	46	1	10	50.0	3
Lock F, Eddyville, Ky.	50	3	13	56.5	10
Duck: Columbia, Tenn.	32	1	2	33.2	1
Ohio:					
Dam No. 47, Newburgh, Ind.	38	4	9	40.1	7
Evansville, Ind.	37	7	8	37.5	7
Shawneetown, Ill.	33	7	10	33.9	9
Dam No. 60, Fords Ferry, Ky.	34	6	12	36.1	9
Dam No. 52, Brookport, Ill.	37	6	5	37.1	5
Red Basin					
Ouachita: Camden, Ark.	26	Dec. 29	10	34.4	3
Sulphur:					
Hagansport, Tex.	38	Dec. 27	1	39.7	Dec. 28
Naples, Tex.	22	19	19	38.4	19
Cypress: Jefferson, Tex.	18	Dec. 30	8	26.8	2
		24	28	23.0	27
		Dec. 31	7	21.0	3
Lower Mississippi Basin					
Wolf: Rossville, Tenn.	10	Dec. 31	3	11.05	2
Coldwater: Sarah, Miss.	18	1	1	18.8	1
Tallahatchie: Swan Lake, Miss.	26	1	30	30.8	6
WEST GULF OF MEXICO DRAINAGE					
Calcasieu: Kinder, La.	16	Dec. 29	5	16.4 16.3	Dec. 29 3
Sabine:					
Gladewater, Tex.	26	1	12	31.4	7
Logansport, La.	25	1	14	29.3	7
		18	29	30.3	23
Bon Wier, Tex.	17	1	(³)	20.5	10-11
				20.0	20
East Fork: Rockwall (nr.), Tex.	10	Dec. 28	1	12.7	Dec. 31
		20	23	11.8	21
Trinity:					
Liberty, Tex.	24	Dec. 31	14	26.7	4-5
Trinidad, Tex.	28	20	28	26.6	23
Guadalupe:		Dec. 30	2	30.1	2
Gonzales, Tex.	20	19	20	26.3	20
Victoria, Tex.	21	21	23	23.7	23
PACIFIC SLOPE DRAINAGE					
<i>Columbia Basin</i>					
Santiam: Jefferson, Oreg.	13	7	8	13.1	7-8

¹ Provisional.
² Ice gorge below gage.
³ Continued into February.