POSITIONS AND AREAS OF SUN SPOTS—Continued

Date	Eastern standard time	Heliographic: Diff. in longitude	Heliographic: Longitude	Heliographic: Latitude	Area: Spot	Area: Group	Total area for each day	Observatory
1936	h. m.	°	°	°				
Aug. 24	11 34	−70.0	67.6	−23.0	15			U. S. Naval.
		−62.0	75.6	−22.0	62			
		−59.0	78.6	+30.0		62		
		−51.0	86.6	+27.0	46			
		−29.0	108.6	−10.0		62		
		+21.0	158.6	+29.0		46		
		+39.5	177.1	+30.5		77		
		+70.0	207.6	+20.0		31	401	
Aug. 25	11 27	−68.0	56.4	−27.0		216		Do.
		−49.0	75.4	−23.0	77			
		−39.0	85.4	+27.0	31			
		−11.0	113.4	−10.0	31			
		+34.0	158.4	+29.0		31		
		+50.5	174.9	+30.5	93			
		+78.0	202.4	+14.0		31	510	
Aug. 26	14 37	−53.0	56.5	−27.0		216		Do.
		−33.0	76.5	−23.0	93			
		−25.0	84.5	+27.0	31			
		−5.0	104.5	−17.0		123		
		+3.0	112.5	−9.0	31			
		+49.0	158.5	+29.5		46		
		+65.0	174.5	+30.0	62		602	
Aug. 27	11 10	−62.0	36.1	+17.0		7		Mount Wilson.
		−40.0	58.1	−28.0		438		
		−22.0	76.1	−21.0	134			
		−13.0	85.1	+28.0		48		
		+7.0	105.1	−17.0		213		
		+11.0	109.1	−11.0		2		
		+16.0	114.1	−8.0		77		
		+75.0	173.1	+32.0		87	1,006	
Aug. 28	12 35	−47.0	37.2	+15.0		8		Do.
		−25.0	59.2	−27.0		715		
		−7.0	77.2	−23.0	107			
		−2.0	82.2	+27.0		17		
		+6.0	90.2	−10.0		6		
		+23.0	107.2	−16.0		191		
		+27.0	111.2	−11.0		2		
		+30.0	114.2	−7.0	30		1,076	
Aug. 29	12 45	−37.0	33.9	+18.0		106		Do.
		−15.0	55.9	−27.0		1,036		
		+5.0	75.9	−22.0		88		
		+12.0	82.9	+28.0		18		
		+20.0	90.9	−11.0		10		
		+37.0	107.9	−17.0		144		
		+44.0	114.9	−8.0	28			
		+50.0	120.9	−22.0	10		1,440	
Aug. 30	12 7	−23.0	35.0	+18.0		31		U. S. Naval.
		−3.0	55.0	−27.0		679		
		+18.0	76.0	−22.0	15			
		+26.0	84.0	+27.0		46		
		+34.0	92.0	−10.5		93		
		+50.0	108.0	−17.0	31			
		+53.0	111.0	−10.0		31	926	
Aug. 31	11 26	−71.0	334.2	+14.0	15			Do.
		−9.0	36.2	+18.0		31		
		+10.0	55.2	−27.0		617		
		+30.5	75.7	−33.0	31			
		+47.0	92.2	−12.0		123		
		+61.0	106.2	−17.5	15			
		+66.0	111.2	−10.0		15	847	

Mean daily area for 31 days, 691.

PROVISIONAL SUN-SPOT RELATIVE NUMBERS, JULY 1936

[Data dependent alone on observations at Zurich and its station at Arosa]

[Furnished through the courtesy of Prof. W. Brunner, Eidgen. Sternwarte, Zurich, Switzerland]

July 1936	Relative numbers	July 1936	Relative numbers	July 1936	Relative numbers
1	*MEcc* 79	11	*Ec* 49	21	28
2	74	12	67	22	*a* 27
3	44	13	67	23	*Mc* 30
4	50	14	*b* 76	24	36
5	*Mac* 52	15	67	25	42
6	37	16	*d* 69	26	49
7	30	17	67	27	38
8	*d* 47	18	53	28	*d* --
9	43	19	49	29	*WEcc* 59
10	47	20	43	30	61
				31	*b* 93

Mean, 30 days=52.4.

a=Passage of an average-sized group through the central meridian.
b=Passage of a large group or spot through the central meridian.
c=New formation of a center of activity: E, on the eastern part of the sun's disk; W, on the western part; M, in the center circle zone.
d=Entrance of a large or average-sized center of activity on the east limb.

PROVISIONAL SUN-SPOT RELATIVE NUMBERS, AUGUST 1936

[Data dependent alone on observations at Zurich and its station at Arosa]

[Furnished through the courtesy of Prof. W. Brunner, Eidgen. Sternwarte, Zurich, Switzerland]

August 1936	Relative numbers	August 1936	Relative numbers	August 1936	Relative numbers
1	64	11	*a* 83	21	*a* 71
2	*ab* 64	12	*a* 76	22	*Eac* 64
3	74	13	*Mc* 90	23	*ad* 64
4	*d* 65	14	103	24	*d* 63
5	*Mc* 87	15	*acd* 123	25	*Ec* 91
6	86	16	93	26	*a* 76
7	89	17	105	27	*a* 87
8	*Ec* 89	18	115	28	91
9	107	19	*a* 90	29	*Macd* 106
10	*Wac* 89	20	65	30	*b* 125
				31	120

Mean, 31 days=87.6.

a=Passage of an average-sized group through the central meridian.
b=Passage of a large group or spot through the central meridian.
c=New formation of a center of activity: E, on the eastern part of the sun's disk; W, on the western part; M, in the central circle zone.
d=Entrance of a large or average-sized center of activity on the east limb.

AEROLOGICAL OBSERVATIONS

[Aerological Division, D. M. LITTLE in charge]

By L. T. SAMUELS

Attention is invited to the note at the foot of table 1, regarding the data on which the normals are based.

The super-normal surface temperatures for August over the central portion of the country, shown on chart I of this REVIEW, extended to considerable heights (see table 1). The largest free-air temperature departures occurred over Omaha at the 1,500- and 2,000-meter levels. Above these levels the departures decreased generally with altitude, in some cases becoming negative at the more southern stations.

The free-air relative humidity departures were mostly of opposite sign to those of temperature, with the largest negative departures occurring over Omaha at the 2,000-meter level. At 5,000 meters, however, the region of maximum negative relative humidity departures was displaced to the southeastern portion of the country. From chart V (inset) in this REVIEW it is seen that the monthly precipitation was deficient over the same general region where the greatest negative free-air relative humidity departures occurred.

Although the period of record at El Paso is only 2 years, it is evident that the average relative humidity during the warm season increases appreciably with elevation and results in higher mean relative humidity at 4,000 meters than at any other station. The relation of this condition to the general circulation and upper air pressure distribution over the United States and adjacent regions presents an interesting problem for investigation.

The resultant free-air wind direction for August was in most cases close to normal, with resultant velocities generally above normal. Principal exceptions occurred over the southeastern region where a pronounced easterly component prevailed at 3,000 and 4,000 meters as compared to the normal westerly component at those levels, and over the more eastern stations above 1,000 meters where the resultant velocities were below normal.

TABLE 1.—*Mean free-air temperatures and relative humidities obtained by airplanes during August 1936*

TEMPERATURE (° C.)

Stations	Altitude (meters) m. s. l.																		Number of observations
	Surface		500		1,000		1,500		2,000		2,500		3,000		4,000		5,000		
	Mean	Departure from normal	Mean	Departure from normal	Mean	Departure from normal	Mean	Departure from normal	Mean	Departure from normal	Mean	Departure from normal	Mean	Departure from normal	Mean	Departure from normal	Mean	Departure from normal	
Barksdale Field (Shreveport), La.[1] (52 m)	24.5	------	26.7	------	23.8	------	20.0	------	16.7	------	13.7	------	11.0	------	5.1	------	−1.5	------	31
Billings, Mont.[2] (1088 m)	17.8	+0.8	------	------	------	------	20.3	+0.8	18.3	+1.2	15.1	+1.4	11.5	+1.5	4.2	+1.9	−3.2	+2.2	31
Boston, Mass.[1] (5 m)	18.4	------	18.9	------	16.5	------	13.7	------	11.0	------	8.9	------	6.5	------	1.2	------	−4.1	------	26
Cheyenne, Wyo.[2] (1873 m)	14.8	+0.1	------	------	------	------	------	------	16.5	+0.3	17.7	+0.7	14.6	+0.3	6.7	+0.1	−0.9	+0.5	31
El Paso, Tex.[2] (1194 m)	22.6	------	------	------	------	------	23.9	------	21.6	------	18.0	------	14.1	------	6.4	------	−0.9	------	31
Fargo, N. Dak.[2] (274 m)	17.4	+1.7	20.4	+1.9	19.2	+1.5	16.5	+1.1	13.9	+1.3	11.3	+1.4	7.8	+1.1	1.4	+0.9	−5.5	+0.6	31
Kelly Field (San Antonio), Tex.[1] (206 m)	22.6	−0.8	24.1	+0.1	22.7	+0.2	19.9	−0.3	16.7	−0.5	14.1	−0.3	11.3	−0.3	5.1	−0.4	−1.8	−1.0	31
Lakehurst, N. J.[3] (39 m)	18.7	------	20.2	------	18.1	------	15.7	------	13.1	------	10.9	------	8.5	------	3.3	------	−1.7	------	23
Maxwell Field (Montgomery), Ala. [1] (52 m)	24.5	+0.2	25.2	+0.3	22.4	−0.1	19.0	−0.4	15.9	−0.6	13.2	−0.5	10.7	−0.2	4.8	−0.4	−0.9	−0.4	30
Miami, Fla.[2] (4 m)	25.1	------	24.4	------	21.3	------	18.3	------	15.8	------	13.3	------	10.5	------	5.0	------	−0.5	------	30
Mitchel Field (Hempstead, L. I.), N. Y.[1] (29 m)	19.5	+1.0	20.2	+0.6	18.7	+1.3	15.8	+1.3	12.9	+1.1	10.0	+0.9	7.5	+0.8	2.5	+1.3	------	------	26
Murfreesboro, Tenn.[2] (174 m)	22.6	+0.3	24.4	+0.7	22.5	+0.6	19.2	+0.5	15.5	−0.1	12.3	−0.1	9.7	+0.1	3.9	+0.4	−1.8	+0.7	31
Norfolk, Va.[3] (10 m)	23.2	−0.7	23.3	+0.3	20.5	−0.2	17.7	0.0	14.9	+0.2	11.7	−0.3	8.5	−0.9	2.4	−1.8	−2.8	−1.7	18
Oklahoma City, Okla.[2] (391 m)	25.5	+0.6	27.7	+1.3	27.4	+1.3	23.6	+0.8	19.8	+0.5	16.2	+0.2	12.6	0.0	5.4	−0.4	−1.7	−1.0	31
Omaha, Nebr.[2] (300 m)	22.3	+2.5	24.8	+3.3	25.7	+3.4	23.8	+3.7	20.9	+3.7	17.3	+3.2	13.8	+3.0	6.6	+2.6	−1.3	+1.4	31
Pearl Harbor, Territory of Hawaii[3] (6 m)	24.0	−1.8	21.6	−0.5	17.8	−0.4	15.0	−0.4	13.0	−0.3	11.8	+0.5	9.4	+0.4	3.3	−0.7	------	------	31
Pensacola, Fla.[3] (13 m)	23.6	−1.4	23.7	+0.1	20.6	−0.2	17.6	−0.1	14.8	+0.1	12.1	+0.2	9.4	+0.4	3.9	+0.7	−1.5	+0.6	31
Salt Lake City, Utah[2] (1288 m)	19.1	------	------	------	------	------	22.4	------	21.0	------	17.2	------	12.9	------	3.9	------	−4.4	------	31
San Diego, Calif.[3] (10 m)	20.7	−0.1	18.1	−0.9	23.7	+0.7	23.5	+1.2	20.3	+0.1	16.8	0.0	13.1	−0.3	5.8	−0.7	−0.8	−0.8	31
Sault Ste. Marie, Mich.[2] (217 m)	13.7	------	14.9	------	13.1	------	10.7	------	8.7	------	6.4	------	3.7	------	−2.3	------	−8.3	------	30
Scott Field (Belleville), Ill.[1] (135 m)	22.5	+1.6	26.0	+1.5	24.1	+1.2	20.7	+0.7	17.4	+0.4	14.3	+0.5	11.3	+0.6	5.0	+0.9	−1.7	+0.5	29
Seattle, Wash.[2] (10 m)	13.4	−4.2	15.8	+0.1	14.7	+0.1	11.6	−0.8	8.9	−1.2	5.5	−2.3	3.4	−2.1	−2.6	−2.6	−9.2	−3.1	7
Selfridge Field (Mount Clemens), Mich.[1] (177 m)	17.7	+0.2	20.2	+0.5	19.0	+1.2	16.5	+1.3	13.5	+1.1	10.1	+0.5	7.0	+0.2	0.3	−0.7	−6.6	−1.3	31
Spokane, Wash.[2] (596 m)	14.8	+0.2	------	------	20.3	+0.5	19.5	+1.4	15.5	+1.4	11.3	+1.3	7.7	+1.3	0.9	+0.8	−6.4	+0.4	31
Washington, D. C.[3] (13 m)	21.6	−0.7	21.7	+0.3	20.0	+0.6	17.2	+0.6	13.9	+0.2	11.1	+0.2	8.0	−0.1	2.8	−0.1	−2.8	−0.1	30
Wright Field (Dayton), Ohio[1] (244 m)	20.9	+1.5	22.6	+1.3	22.6	+2.1	19.5	+1.9	16.3	+1.4	13.1	+1.1	10.4	+1.0	4.9	+1.2	−1.0	+1.1	31

RELATIVE HUMIDITY (PERCENT)

Stations	Surface Mean	Departure	500 Mean	Departure	1,000 Mean	Departure	1,500 Mean	Departure	2,000 Mean	Departure	2,500 Mean	Departure	3,000 Mean	Departure	4,000 Mean	Departure	5,000 Mean	Departure	Number of observations
Barksdale Field (Shreveport), La.	80	------	62	------	62	------	66	------	70	------	63	------	58	------	51	------	58	------	------
Billings, Mont.	55	+4	------	------	------	------	45	+4	44	+4	47	+5	52	+6	58	+7	59	+5	------
Boston, Mass.	81	------	61	------	60	------	65	------	61	------	51	------	55	------	54	------	46	------	------
Cheyenne, Wyo.	66	+1	------	------	------	------	------	------	58	−2	45	−4	44	−3	50	0	56	−1	------
El Paso, Tex.	57	------	------	------	------	------	53	------	54	------	58	------	64	------	72	------	69	------	------
Fargo, N. Dak.	69	−8	56	−5	52	−3	52	−2	52	−1	48	−2	51	+1	48	+1	46	+2	------
Kelly Field (San Antonio), Tex.	90	0	87	0	73	+2	69	+6	68	+5	61	+3	56	+2	53	+2	54	+3	------
Lakehurst, N. J.	90	------	63	------	58	------	55	------	57	------	54	------	53	------	56	------	54	------	------
Maxwell Field (Montgomery), Ala.	88	−1	67	−5	69	−2	70	−1	65	−3	59	−6	53	−10	51	−7	41	−9	------
Miami, Fla.	89	------	83	------	79	------	76	------	66	------	56	------	55	------	51	------	42	------	------
Mitchel Field (Hempstead, L. I.), N. Y.	91	0	80	+7	70	+1	71	+1	70	+3	67	+6	60	+5	59	+8	------	------	------
Murfreesboro, Tenn.	87	−1	66	−5	64	−5	66	−6	68	−1	60	−6	55	−6	53	−5	48	−2	------
Norfolk, Va.	88	+7	69	−2	67	0	65	−1	61	−5	61	−3	61	+1	52	+3	47	+5	------
Oklahoma City, Okla.	53	−10	49	−10	43	−10	44	−10	46	−7	46	−7	46	−7	47	−5	45	−6	------
Omaha, Nebr.	70	−9	58	−10	47	−7	43	−9	41	−11	42	−9	42	−9	44	−6	52	+2	------
Pearl Harbor, Territory of Hawaii.	79	+8	80	+3	84	0	80	+1	65	−2	44	−9	36	−8	23	−9	30	+1	------
Pensacola, Fla.	92	+6	81	+2	79	+2	76	+2	71	0	67	−1	63	−2	56	−6	45	−9	------
Salt Lake City, Utah	57	------	------	------	------	------	44	------	40	------	40	------	43	------	52	------	57	------	------
San Diego, Calif.	87	+6	91	+11	51	+3	38	0	39	+3	42	+4	47	+6	55	+10	51	+9	------
Sault Ste. Marie, Mich.	89	------	72	------	71	------	72	------	65	------	59	------	56	------	61	------	59	------	------
Scott Field (Belleville), Ill.	74	−10	55	−5	54	−5	56	−1	56	0	56	+2	50	+1	46	0	43	+1	------
Seattle, Wash.	87	+13	73	0	62	−4	67	+4	64	+4	62	+9	58	+11	49	+12	46	+13	------
Selfridge Field (Mount Clemens), Mich.	81	−2	63	−2	57	−4	52	−5	50	−3	50	−1	49	+1	47	+1	41	0	------
Spokane, Wash.	58	0	------	------	45	+2	41	+1	43	+1	46	+1	48	+2	46	+3	45	+4	------
Washington, D. C.	86	+8	62	−6	53	−11	56	−9	63	−3	56	−6	58	−1	48	−4	41	−7	------
Wright Field (Dayton), Ohio	81	−4	74	+1	70	+2	73	+3	74	+9	74	+11	66	+8	60	+6	58	+9	------

[1] Army. [2] Weather Bureau. [3] Navy.

Observations taken about 4:00 a. m., 75th meridian time, except along the Pacific coast and Hawaii where they are taken at dawn.

NOTE.—The departures are based on normals covering the following total number of observations made during the same month in previous years, including the current month. The figures in parenthesis indicate the number of years of record: Billings, 92 (3); Cheyenne, 93 (3); Fargo, 93 (3); Kelly Field, 93 (3); Maxwell Field, 90 (3); Mitchell Field, 87 (3); Murfreesboro, 93 (3); Norfolk, 158 (8); Oklahoma City, 92 (3); Omaha, 177 (6); Pearl Harbor, temp. 162 (8), hum. 132 (7); Pensacola, 217 (9); San Diego, 203 (8); Scott Field, 88 (3); Seattle, 69 (7); Selfridge Field, 91 (3); Spokane, 93 (3); Washington, 242 (12); Wright Field, 93 (3).

LATE REPORT FOR JULY 1936

TEMPERATURE (° C)

	Surface Mean	Departure	500 Mean	Departure	1,000 Mean	Departure	1,500 Mean	Departure	2,000 Mean	Departure	2,500 Mean	Departure	3,000 Mean	Departure	4,000 Mean	Departure	5,000 Mean	Departure	Number of observations
Pearl Harbor, Territory of Hawaii[3] (6 m.)	23.8	−1.6	21.4	−1.0	17.7	−1.0	14.5	−1.5	12.2	−1.3	10.1	−1.7	8.2	−2.0	3.3	−2.2	------	------	31

RELATIVE HUMIDITY (PERCENT)

	Surface Mean	Departure	500 Mean	Departure	1,000 Mean	Departure	1,500 Mean	Departure	2,000 Mean	Departure	2,500 Mean	Departure	3,000 Mean	Departure	4,000 Mean	Departure	5,000 Mean	Departure	Number of observations
Pearl Harbor, Territory of Hawaii.	79	+8	80	+4	84	+2	82	+5	73	+2	57	+1	42	+1	24	−1	------	------	------

NOTE.—The departures are based on normals covering the following total number of observations made during the same month in previous years, including the current month. Pearl Harbor, 111 (6).

TABLE 2.—*Free-air resultant winds (meters per second) based on pilot-balloon observations made near 5 a. m. (E. S. T.) during August 1936*

[Wind from N=360°, E=90°, etc.]

Altitude (m) m. s. l.	Albuquerque, N. Mex. (1,554 m)		Atlanta, Ga. (309 m)		Billings, Mont. (1,088 m)		Boston, Mass. (15 m)		Cheyenne, Wyo. (1,873 m)		Chicago, Ill. (192 m)		Cincinnati, Ohio (153 m)		Detroit, Mich. (204 m)		Fargo, N. Dak. (274 m)		Houston, Tex. (21 m)		Key West, Fla. (11 m)		Medford, Oreg. (410 m)		Murfreesboro, Tenn. (180 m)	
	Direction	Velocity	Direction	Velocity	Direction	Velocity	Direction	Velocity	Direction	Velocity	Direction	Velocity	Direction	Velocity	Direction	Velocity	Direction	Velocity	Direction	Velocity	Direction	Velocity	Direction	Velocity	Direction	Velocity
	°		°		°		°		°		°		°		°		°		°		°		°		°	
Surface	5	1.3	17	0.7	320	2.2	287	5.8	279	2.5	206	0.7	109	0.4	330	0.7	108	1.5	35	0.3	94	2.7	268	0.9	172	1.0
500	----	----	355	1.3	----	----	308	2.8	----	----	241	3.0	243	3.4	297	0.5	120	3.1	178	4.2	104	5.7	281	1.6	216	5.0
1,000	----	----	246	1.2	----	----	301	3.5	----	----	260	3.9	264	6.3	272	3.1	183	1.2	156	3.4	109	5.2	303	1.8	238	4.8
1,500	----	----	252	0.8	241	0.6	283	5.0	----	----	266	6.0	272	6.4	273	5.0	301	2.8	138	3.4	110	4.4	203	0.2	241	2.5
2,000	140	1.9	164	0.2	236	1.8	281	5.5	275	4.5	273	7.9	277	5.2	279	5.5	291	5.6	122	3.6	111	3.6	228	1.1	245	1.6
2,500	186	2.8	354	0.6	233	3.1	287	6.9	269	4.0	281	7.2	271	5.0	276	5.9	293	9.0	108	3.7	108	3.3	216	4.9	256	1.4
3,000	209	2.1	60	0.9	250	4.6	276	8.5	268	3.4	313	3.4	273	4.6	279	6.1	296	10.0	95	4.0	112	2.4	212	6.7	188	2.0
4,000	204	1.8	75	3.7	259	7.8	289	7.9	258	4.5	314	3.1	----	----	273	5.6	----	----	81	3.6	350	1.7	218	7.5	----	----
5,000	134	2.2	52	3.2	264	10.1	----	----	256	6.1	----	----	----	----	283	6.4	----	----	107	3.9	----	----	226	9.5	----	----

Altitude (m) m. s. l.	Newark, N. J. (14 m)		Oakland, Calif. (8 m)		Oklahoma City, Okla. (402 m)		Omaha, Nebr. (306 m)		Pearl Harbor, Territory of Hawaii[1] (68 m)		Pensacola, Fla.[1] (24 m)		St. Louis, Mo. (170 m)		Salt Lake City, Utah (1,294 m)		San Diego, Calif. (15 m)		Sault Ste. Marie, Mich. (198 m)		Seattle, Wash. (14 m)		Spokane, Wash. (603 m)		Washington, D. C. (10 m)	
	Direction	Velocity	Direction	Velocity	Direction	Velocity	Direction	Velocity	Direction	Velocity	Direction	Velocity	Direction	Velocity	Direction	Velocity	Direction	Velocity	Direction	Velocity	Direction	Velocity	Direction	Velocity	Direction	Velocity
	°		°		°		°		°		°		°		°		°		°		°		°		°	
Surface	283	0.8	318	1.1	182	3.9	135	1.1	58	4.5	59	1.3	204	1.7	149	3.7	12	1.1	57	0.3	125	1.0	97	1.6	255	0.5
500	298	4.6	234	2.4	196	8.4	162	4.2	72	7.9	108	1.5	214	6.2	----	----	343	0.6	200	0.7	45	1.7	----	----	272	3.9
1,000	296	4.7	302	3.4	210	12.9	199	7.5	76	8.1	146	2.1	241	6.2	----	----	94	1.0	258	3.7	352	1.5	217	2.5	288	4.3
1,500	283	4.5	280	2.7	208	7.2	227	7.8	85	6.7	122	2.5	251	5.5	153	5.9	157	2.5	267	5.4	328	2.0	225	3.0	288	5.0
2,000	274	4.7	236	3.1	201	3.4	247	7.5	106	3.8	94	2.5	264	4.7	172	5.5	148	3.5	278	6.9	287	1.6	222	3.8	288	5.6
2,500	271	6.0	217	3.3	203	1.4	262	6.7	111	2.7	87	2.5	269	4.6	197	4.6	140	5.5	288	8.3	245	2.5	228	4.6	285	6.0
3,000	271	8.2	221	4.4	155	1.4	279	6.7	127	1.8	89	3.9	284	5.0	221	4.4	140	5.9	286	8.0	239	3.0	238	6.3	285	4.7
4,000	----	----	----	----	138	2.7	298	6.9	----	----	81	4.7	289	2.7	232	5.5	159	6.3	286	8.3	259	3.5	231	6.4	296	5.1
5,000	----	----	----	----	174	2.7	302	7.4	----	----	----	----	----	----	232	5.8	----	----	288	10.9	256	4.9	----	----	----	----

[1] Navy stations.

RIVERS AND FLOODS

[River and Flood Division, MONTROSE W. HAYES in charge]

By W. J. MOXOM

Small, unimportant floods occurred during August in the Little, Neuse, and Cape Fear Rivers in North Carolina; in the Santee and Savannah Rivers in South Carolina; and in the lower Apalachicola and Choctawhatchee Rivers in western Florida. Losses in the Neuse River district amounted to approximately $5,000; elsewhere they were negligible.

On August 3 an excessive downpour in the mountains above Walsenburg, Colo., caused a rapid rise in the Cucharas River, which damaged property in Walsenburg to the extent of approximately $185,000. On August 6 heavy rains in the Fountain River drainage area immediately north of Pueblo, Colo., caused a sharp rise in that stream. Although flood stage was not reported, the losses due to the rapidly rising river amounted to approximately $41,000.

Unusually low stages prevailed in the Mississippi River and tributaries, and all-time records of low stages were broken at a number of stations. At St. Louis, Mo., the river reached −4.1 feet on the 28th which is the lowest free water stage ever recorded, and 1.1 feet lower than the previous record in 1934. The lowest ice-jam stage was −4.6 on December 29–30, 1933. At Arkansas City, Ark., a stage of −5.0 feet was reached on the 30th, or 1.4 feet lower than the low stage of November 1895.

Table of flood stages during August 1936

[All dates in August, unless otherwise specified]

River and station	Flood stage	Above flood stages—dates		Crest	
		From—	To—	Stage	Date
ATLANTIC SLOPE DRAINAGE	*Feet*			*Feet*	
Little: Kenly, N. C	8	July 31	3	10.3	3
Neuse:					
Neuse, N. C	14	----	----	13.8	1
Smithfield, N. C	13	July 31	3	17.0	1
Goldsboro, N. C	14	3	8	17.2	6
Kinston, N. C	14	6	10	15.3	9
Cape Fear: Lock no. 2, Elizabethtown, N. C	20	1	3	22.3	2
Santee:					
Rimini, S. C	12	13	17	13.0	16
Ferguson, S. C	12	15	18	12.3	17
Savannah: Ellenton, S. C	14	3	5	15.5	4
EAST GULF OF MEXICO DRAINAGE					
Apalachicola: Blountstown, Fla	15	3	5	15.5	4
		13	17	16.8	14, 15
Choctawhatchee: Caryville, Fla	12	4	7	12.6	5
MISSISSIPPI SYSTEM					
Arkansas Basin					
Purgatoire: Higbee, Colo	2	7	7	4.5	7
Arkansas:					
Fort Lyon, Colo	6	7	7	6.7	7
Great Bend, Kans	5	12	12	5.4	12