

## STORMS AND WEATHER WARNINGS

## WASHINGTON FORECAST DISTRICT

The first tropical disturbance of the season made its appearance on the morning of the 21st, about 300 miles northeast of St. Kitts. At that time it was of considerable intensity, as indicated by the heavy northeast swells reported by the S. S. *Inanda* in approximate latitude 19° N. and longitude 60° W. Undoubtedly this disturbance developed far to the eastward, very likely in the region of the Cape Verde Islands. A letter from Capt. F. C. Seibert of the S. S. *Seekonk* reports that at 5:40 p. m., in latitude 22° 46', longitude 63° 00', a barometric pressure of 28.38 inches and winds of hurricane force shifting from northeast to east-south-east. A delayed report from the S. S. *Maraval* at 1 a. m., August 22, in latitude 22° 48', longitude 65° 48', gives lowest barometer 28.06 inches and wind calm. It moved northwestward during the next two days, at a rate of about 600 miles per day (25 m. p. h.). On the morning of the 23d its center was at latitude 31½° N., longitude 73° W. During the preceding 12 hours it had begun to recurve to the northward. By the evening of the 23d it was central about 100 miles east of Cape Hatteras, being attended by winds of hurricane force near its center. It continued to move north-northeast, passing 100 miles or less to the east of Nantucket during the daylight hours of the 24th to the Straits of Belle Isle by the morning of the 25th, attended by gales over the Canadian Maritime Provinces approximating hurricane force near the center. It then moved rapidly northeast, being central over Iceland on the morning of the 27th with air pressure 28.44 inches and attended by gales. This hurricane moved at a rate considerably in excess of the normal and slowed up very little at the time of recurve, the trajectory being very smooth and not showing a sharp bend, as in the case of storms that are slow at the recurve.

Timely advices were issued twice daily or more to coast stations and to vessels by radio. The disturbance was of major intensity and hurricane winds were experienced near the center. Although advices were timely and accurate, considerable damage resulted to shipping off the New England coast and in the region of the Canadian Maritime Provinces.

On the morning of the 27th, storm warnings were ordered from Eastport to New York in connection with relatively low pressure south of Nantucket and high pressure over the Canadian Maritime Provinces, but winds did not reach dangerous proportions.

Small craft warnings were issued on the 9th, 15th, 18th, and 26th.

Frost warnings were not ordered or required.—R. H. Weightman.

## WEATHER OF THE ATLANTIC AND PACIFIC OCEANS

## NORTH ATLANTIC OCEAN

By F. A. YOUNG

With the exception of the rather unusual disturbance of a tropical origin in the last decade of the month which will be referred to later, the weather conditions over the ocean during the month of September presented few abnormal characteristics. East of the 45th meridian gales were not reported on more than two days in any 5-degree square, while between the 35th and 45th parallels and the 45th and 60th meridians they occurred on from one to four days.

The number of days with fog was apparently somewhat below the normal over the Grand Banks, about normal off the American and European coasts, and considerably above over the middle section of the steamer lanes.

TABLE 1.—Averages, departures, and extremes of atmospheric pressure at sea level, 8 a. m. (75th meridian), North Atlantic Ocean, September, 1927

Stations	Average pressure	Departure <sup>1</sup>	Highest	Date	Lowest	Date
	Inches	Inch	Inches		Inches	
Belle Isle, Newfoundland.....	29.75	-0.15	30.30	1st.....	29.18	17th.
Halifax.....	29.98	-0.03	30.42	28th.....	29.40	12th.
Nantucket.....	30.02	-0.02	30.40	28th.....	29.60	11th.
Hatteras.....	30.03	0.00	30.26	25th.....	29.72	11th.
Key West.....	29.93	-0.04	30.04	5th.....	29.86	11th.
New Orleans.....	29.99	0.00	30.16	23d.....	29.84	18th.
Cape Gracias-a-Dios, Honduras <sup>2</sup>	29.83	-0.05	29.88	5th <sup>3</sup> .....	29.78	29th. <sup>3</sup>
Turks Island.....	29.97	0.00	30.04	3d.....	29.88	29th.
Bermuda.....	30.02	-0.03	30.24	30th.....	29.76	12th.
Horta, Azores.....	30.22	+0.06	30.42	26th.....	29.70	21st.
Lerwick, Shetland Islands.....	29.63	-0.21	30.26	3d.....	28.92	24th.
Valencia, Ireland.....	29.84	-0.15	30.23	12th.....	29.30	24th.
London.....	29.92	-0.08	30.24	2d.....	29.15	24th.

<sup>1</sup> From normals shown on H. O. Pilot Chart, based on observations at Greenwich mean noon, or 7 a. m., 75th meridian.

<sup>2</sup> Cape Gracias-a-Dios, on the extreme eastern coast of Honduras, was substituted for Swan Island, the latter station having been discontinued on Sept. 1, 1927.

<sup>3</sup> And on other dates.

During the first two days of the month moderate conditions prevailed generally, although on the 2d a depression was over the eastern section of the steamer lanes that afterwards developed into a fairly well defined disturbance which on the 3d was central near 55° N., 30° W., with moderate to whole gales in the southerly quadrants.

On the 5th Belle Isle was near the center of a low that afterwards developed into a severe disturbance, although of limited extent and short duration. On the 6th this depression had moved but little and deepened slightly, but on that day it was attended by moderate winds only.

On the 7th a comparatively well developed low was over the middle section of the steamer lanes, with moderate southwest gales between the 40th and 45th parallels and the 35th and 40th meridians.

A report was received from the British S. S. *Matador* indicating that on the evening of the 7th and the morning of the 8th a severe local disturbance of short duration occurred in southern waters. The *Matador* received a radiogram from the British S. S. *Socrates* stating that on the morning of the 8th, in 21° 40' N., 51° 00' W., the barometer read 29.73, falling, wind SE., force 10. Storm center moving toward NW.

On the 9th Belle Isle was again near the center of a disturbance that moved but little during the next 24 hours, decreasing in intensity.

On the 12th the Maritime Provinces were covered by a depression, while a secondary low was central a short distance east of the Bermudas, and vessels between the two centers encountered winds of from force 4 to 9.

From the 13th to 19th the weather over the ocean was, as a rule, favorable, although during this period reports were received from a few vessels that had encountered gales, and on the 15th northerly winds of force 7 were reported by land stations in southern England.

On the 20th and 21st a severe but limited disturbance was in the vicinity of the Azores, and on the latter date westerly winds of force 10 prevailed in the southerly quadrants.

On the 23d a "double low" was in European waters; the southern center was near Portland Bill and the northern near Lerwick, and winds of hurricane force were reported by vessels in the English Channel. By the 24th these two lows had evidently combined, the center now being over the North Sea, while northerly gales still prevailed off the coast of northern Europe and between the 45th and 55th parallels and the 20th and 30th meridians.

The existence of the tropical disturbance of this period, which has already been referred to, was first definitely established on the 24th. The center on that date was in approximately latitude 25° N., longitude 54° W., with a direction of movement almost due northwestward. This movement, had it been maintained, would have carried the center close to Bermuda. However, the storm began to recurve on the 25th and the westernmost point of its path was the 61st meridian, reached about midday of the 26th. Completing the recurve by the morning of the 27th, the storm moved in a northeasterly direction, and on the morning of the 30th the center appeared to be at latitude 45° N., longitude 49° W. Its subsequent history has not yet been determined.

The general period of these two disturbances, extending from the 24th to the 29th, is covered by Charts VIII to XIII, which give an idea of their extent and intensity from day to day.

NOTE.—American S. S. *Bogota*, Capt. H. U. Davis, from Kingston to New York:

On September 15, in 25° 25' N., 74° 34' W., observed two large and one small waterspouts within one-half to 3 miles of the ship, followed by thunder and heavy rain showers. No change in barometer. Wind veered from NE. all the way round the compass one-half hour from 4.30 to 5 p. m.

ADDITIONAL NOTE ON AUGUST HURRICANE

The British S. S. *Highland Prince*, Capt. John Davis, Observer Samuel A. Wheaton, from New York to Rio de Janeiro, rendered a report that was received too late to include in the article for the August REVIEW. At Greenwich mean noon on August 20 the vessel was in 21° 55' N., 53° 05' W., and reported wind NE., 7, barometer 30.03 inches. The storm report states that the gale

began on the 20th, wind NE., lowest barometer 29.93 inches, wind ENE., 9, at 4 p. m. on the 20th, in 21° 15' N., 52° 30' W. End of gale on the 21st, wind E. Highest force of wind E., 12. Shifts, NE.-E.-ENE.-E. On the 20th the *Highland Prince* was evidently some distance north of the center of the disturbance. Unfortunately, it is impossible to plot the position of the center due to lack of observations, as this was the only report received from that region.

OCEAN GALES AND STORMS, SEPTEMBER, 1927

Vessel	Voyage		Position at time of lowest barometer		Gale began	Time of lowest barometer	Gale ended	Lowest barometer	Direction of wind when gale began	Direction and force of wind at time of lowest barometer	Direction of wind when gale ended	Highest force of wind and direction	Shifts of wind near time of lowest barometer
	From—	To—	Latitude	Longitude									
<b>NORTH ATLANTIC OCEAN</b>													
Bolivier, Belg. S. S.	Antwerp	New York	50 37 N.	27 44 W.	Sept. 1	11 p., 1	Sept. 3	29.62	SW	WSW, 8	NW	W, 9	W.-NW.
Minnesota, Br. S. S.	New York	Boulogne	41 11 N.	54 12 W.	5	1 p., 5	5	29.47	SW	SW, 11	NW	W, 12	SW-W-NW.
Elzasier, Belg. S. S.	do	Antwerp	46 35 N.	35 45 W.	7	2 p., 7	7	29.47	NE	NE, 8	NNW	NE, 9	NE.-N.
Mercier, Belg. S. S.	Antwerp	New York	50 29 N.	26 07 W.	7	Mtd., 7	8	29.51	SW	SW, 8	NW	NW, 10	NW, 10
Rochambeau, Fr. S. S.	Havre	do	42 45 N.	50 39 W.	9	7 a., 9	10	29.57	W	W	NW	W, 8	W, 8
Illingworth, Br. S. S.	River Tyne	Galveston	31 20 N.	51 10 W.	10	8 p., 10	10	29.82	S	S, 7	SW	S, 8	S.-SW.
Tynefield, Br. M. S.	London	do	33 05 N.	59 56 W.	11	1 a., 12	12	29.70	Var	S, 7	W	Var, 8	S.-SW.-W.
Providence, Fr. S. S.	Boston	Lisbon	40 45 N.	53 30 W.	11	8 p., 12	13	29.49	S	SSE, 7	WSW	SSE, 9	SSE.-S.-WSW.
Arkansas, Dan. S. S.	Baltimore	Rotterdam	49 15 N.	9 44 W.	14	4 p., 14	15	29.50	WSW	NNW, 9	N	NNW, 9	W.-NW.-N.-NNE.
Dresden, Ger. S. S.	Bremerhaven	New York	43 23 N.	46 44 W.	16	9 p., 16	17	29.33	SW	SW, 8	NW	SW, 9	SW.-W.
Marino O, Ital. S. S.	Naples	Beaumont	36 00 N.	28 40 W.	20	10 p., 20	21	28.95	SW	NW, 10	NW	—, 10	—, 10
Tulsa, Am. S. S.	Rotterdam	Savannah	52 10 N.	3 50 E.	22	1 p., 22	25	28.82	S	—	NW	SW, 12	SW, 12
New York City, Br. S. S.	Cardiff	Philadelphia	50 30 N.	21 27 W.	23	Mtd., 23	24	29.28	NW	NW, 9	NNW	N, 9	NW.-N.
St. Anthony, Am. S. S.	Santos	Boston	27 32 N.	55 49 W.	23	—, 24	27	29.46	NE	ESE, 10	N	NE, 11	NE.-ESE.
Sagaporaek, Am. S. S.	New York	Copenhagen	59 21 N.	7 55 W.	24	4 p., 24	26	29.22	NNE	NNE, 9	NNE	NNE, 9	Steady.
Connex Peak, Am. S. S.	Rotterdam	Galveston	31 33 N.	60 16 W.	26	4 a., 26	26	28.67	SE	SE, 8	NW	E, 12	E, 12
Mijdrecht, Du. S. S.	Seville	New Orleans	31 08 N.	61 00 W.	26	7 a., 26	26	29.06	NE	N, 12	NW	N, 12	NE.-N.-NW.
Antinous, Am. S. S.	Mobile	London	39 43 N.	59 47 W.	27	Noon, 27	29	29.40	ENE	ENE, 11	NNW	ENE, 11	ENE.-N.-NNW.
Spaarndam, Du. S. S.	Antwerp	Habana	37 37 N.	60 43 W.	27	10 a., 27	27	29.35	ENE	N, 10	NNW	N, 10	ENE.-N.-NNW.
Giuseppe Verdi, Ital. S. S.	Lisbon	New York	37 50 N.	59 03 W.	27	11 p., 27	28	29.02	S	WNW, 12	NW	NW, 12	S.-SW.-W.
Asuncion de Larrinaga, Br. S. S.	Manchester	Galveston	55 00 N.	18 30 W.	27	10 p., 27	27	29.33	SW	WSW, 8	WSW	WSW, 9	WSW.-W.-WNW.
Bolivian, Br. S. S.	London	New York	42 44 N.	52 40 W.	28	6 p., 28	30	28.98	NE	NE, 7	NNW	NNW, 12	SSE.-NE.-NNW.
Narragansett, Br. M. S.	Hull	Baton Rouge	34 56 N.	46 00 W.	29	7 a., 29	29	29.53	SSE	S, 11	SW	S, 11	—, 11
Pres. Harding, Am. S. S.	Cherbourg	New York	43 05 N.	52 15 W.	27	4 p., 29	29	29.18	SE	NE	N	—, 10	SE.-E.-N.
Dresden, Ger. S. S.	New York	Bremerhaven	41 31 N.	54 46 W.	28	4 p., 29	Oct. 1	29.73	NNE	NNW, 11	NW	NNW, 11	NE.-NNW.
Gov. John Lind, Am. S. S.	San Juan	Baltimore	25 39 N.	69 48 W.	30	2 p., 30	1	29.78	E	ENE, 8	E	E, 8	—, 8
De Grasse, Fr. S. S.	Havre	New York	47 45 N.	34 35 W.	30	11 a., 30	Sept. 30	29.09	SSE	WSW, 11	NW	SSE, 12	WSW.-NW.
United States, Dan. S. S.	New York	Christiansand	58 34 N.	8 33 W.	26	1 p., 30	30	29.39	SW	WSW, 7	SW	WNW, 10	WNW, 10
<b>NORTH PACIFIC OCEAN</b>													
West Sequana, Am. S. S.	San Francisco	Shanghai	34 44 N.	173 10 E.	3	10 a., 3	4	29.61	SE	SSE, 5	W	SE, 8	—, 8
Antietam, Am. S. S.	San Pedro	Tsuzhizaki, Japan	44 50 N.	140 15 W.	3	8 p., 3	5	29.80	W	W, 7	NW	WNW, 9	W.-NW.
Pres. Cleveland Am. S. S.	Seattle	Yokohama	51 00 N.	177 30 W.	3	1 a., 6	6	29.05	WNW	W, 8	NNW	—, 10	SE.-SW.
Steel Voyager, Am. S. S.	Puget Sound	Panama	35 06 N.	121 03 W.	6	Mtd., 6	6	29.77	NNW	NNW, 6	NNW	NNW, 9	Steady.
Pawlet, Am. S. S.	Hakodate	San Francisco	49 38 N.	159 40 W.	4	—, 5	8	29.68	S	S, 8	S	S, 8	Do.
Antietam, Am. S. S.	San Pedro	Tsuzhizaki	48 23 N.	153 00 W.	6	1 p., 7	7	29.57	SSW	SSW, 9	SSW	SSW, 9	Do.
Do.	do	do	50 20 N.	171 40 W.	10	8 p., 10	10	29.18	SSE	E, 9	E	E, 9	Do.
Akagisan Maru, Jap. S. S.	Longview, Wash.	Yokohama	54 25 N.	169 40 W.	6	—, 11	11	29.43	WSW	ENE, 7	E	S, 9	Variable.
Tahchee, Br. S. S.	Shanghai	San Pedro	49 00 N.	173 00 W.	10	—, 10	10	—	ENE	ENE, 8	S	ENE, 8	ENE.-E.-S.
Tamaha, Br. S. S.	San Pedro	Hong Kong	25 00 N.	130 00 E.	11	2 a., 11	12	29.73	S	SW, 8	SW	SW, 8	S.-SW.
Yoneyama Maru, Jap. S. S.	Miike	Coos Bay	34 06 N.	134 35 E.	12	6 a., 14	14	29.30	SE	SW, 11	WSW	SW, 11	S.-SW.
Stanley Dollar, Am. S. S.	Shanghai	San Francisco	47 00 N.	163 09 W.	15	4 p., 16	17	28.94	NNE	ENE, 5	SSE	NNE, 9	6 pts. to SE.
Nagato Maru, Jap. S. S.	Kamchatka	do	49 00 N.	164 13 W.	15	Noon, 16	17	29.37	NE	N, 9	S	NNE, 9	—, 9
Antietam, Am. S. S.	San Pedro	Tsuzhizaki	46 26 N.	163 23 E.	15	6 a., 16	16	29.71	SE	SE, 8	S	ESE, 9	—, 9
Atlantic Maru, Jap. S. S.	Yokohama	San Francisco	47 20 N.	169 16 W.	16	4 a., 17	17	29.38	SE	NNW, 8	S	NNW, 8	N.-NNW.
Tatsuno Maru, Jap. S. S.	do	do	43 00 N.	153 20 W.	17	8 a., 17	18	29.84	SE	SSE, 3	NE	SSE, 8	S.-SE.
Tamaha, Br. S. S.	Hong Kong	San Pedro	22 30 N.	115 15 E.	19	10 p., 19	20	29.98	NNE	NE, 7	NE	NE, 8	Steady.
West Cadron, Am. S. S.	Yokohama	Portland	37 50 N.	145 37 E.	23	2 p., 23	24	29.62	ENE	NNE, 8	N	N, 9	NE.-N.
Tamaha, Br. S. S.	Hong Kong	San Pedro	30 06 N.	131 52 E.	25	9 a., 25	29	29.62	ESE	NE, 7	NE	NE, 12	NE.-E.
Tahiti, Br. S. S.	Sydney	San Francisco	37 16 N.	123 00 W.	29	4 a., 30	30	29.88	NNW	NNW, 6	NNW	NNW, 8	Steady.
Manukai, Am. S. S.	Maui	do	36 08 N.	126 38 W.	30	11 a., 30	Oct. 1	30.21	N	N, 7	NNW	NNW, 9	N.-NNW.
<b>STORM REPORTS FROM WEST COAST OF MEXICO</b>													
General Smuts, Br. S. S.	San Pedro	Callao	16 58 N.	106 45 W.	7	1 a., 8	Sept. 8	29.76	SW	WSW, 10	WSW	WSW, 10	SW.-WSW.
Dinteldijk, Du. S. S.	Los Angeles	Balboa	19 13 N.	105 32 W.	8	3 p., 8	8	29.50	ESE	ESE, 8	SSW	ESE, 8	ESE.-SW.
D. G. Scofield, Am. S. S.	San Pedro	Baltimore	21 22 N.	108 27 W.	8	—, 8	10	29.15	NW	SSE, —	SW	S, 12	E.-S.
La Placencia, Am. S. S.	Balboa	San Pedro	*21 00 N.	108 00 W.	8	4 a., 8	10	29.36	E	ESE, 8	S	ESE, 8	—, 8
W. S. Miller, Am. S. S.	San Francisco	Balboa	*21 00 N.	108 00 W.	8	10 a., 9	10	29.40	E	E, 11	SSW	E, 11	E.-S.
Axel Johnson, Swed. M. S.	San Pedro	do	21 06 N.	108 20 W.	9	8 p., 9	10	29.05	ENE	S, 12	SW	S, 12	—, 12
Inverarder, Br. S. S.	Buenos Aires	San Pedro	14 50 N.	108 00 W.	7	2 p., 8	10	29.29	SW	SW, 9	SW	SW, 9	Steady.
Steel Voyager, Am. S. S.	Puget Sound	Panama Canal	24 25 N.	112 35 W.	10	4 a., 11	11	29.43	N	NE, —	WSW	N, 9	N.-NW.
Minnesotan, Am. S. S.	Panama Canal	Los Angeles	17 00 N.	101 23 W.	10	2 a., 12	12	29.76	W	W, 10	W	W, 10	W.-NW.
Salina, Am. S. S.	San Pedro	Panama Canal	22 53 N.	111 03 W.	10	5 a., 10	12	29.31	NNE	NW, 10	S	NW, 10	—, 10
Point Lobos, Am. S. S.	Balboa	San Diego	18 17 N.	103 32 W.	11	—, 11	12	—	SW	SW, 10	WNW	WNW, 8	W.-NW.
W. S. Rheem, Am. S. S.	do	San Pedro	16 01 N.	99 24 W.	12	4 p., 12	12	29.48	SW	SW, 10	NW	W, 11	SW.-NW.
Meton, Am. S. S.	San Pedro	Norfolk	15 53 N.	99 37 W.	26	6 p., 26	26	29.70	E	E, 7	SSE	E, 8	E.-ESE.
Dean Emery, Am. S. S.	do	Balboa	17 08 N.	102 53 W.	27	6 a., 27	27	29.71	E	E, 10	ESE	E, 10	E.-ESE.
Pennsylvanian, Am. S. S.	New York	Los Angeles	22 35 N.	109 33 W.	28	4 p., 29	29	29.58	E	E, 9	E	E, 9	Steady.
Pres. Hayes, Am. S. S.	do	San Francisco	22 05 N.	108 45 W.	30	7 1/2 a., 30	30	27.96	SSE	Calm	NW	NW, 12	E.-C.-N.

\*Approximate position.

## SEVERE LOCAL STORMS, OCTOBER, 1927

## STORMS AND WEATHER WARNINGS

## WASHINGTON FORECAST DISTRICT

On the 2d storm warnings were ordered between Daytona, Fla., and Savannah, Ga., in connection with a disturbance that apparently developed off the northeast Florida coast and moved north-northwest, crossing the coast line between Savannah and Charleston. The only strong winds were reported near Charleston. The disturbance was of very small extent and short duration, but was seemingly quite severe at the time it crossed the coast line. This disturbance redeveloped being central over Virginia on the evening of the 3d when storm warnings were ordered from Delaware Breakwater to Eastport. Winds of gale force occurred over the region of display.

In connection with a disturbance of marked intensity central over eastern Lake Superior on the evening of the 12th, storm warnings were ordered from Hatteras to Eastport.

The first indication of a tropical disturbance during the month appeared over the northwestern Caribbean on the evening of the 16th and advices were issued generally to shipping and storm warnings were ordered from Punta Gorda to Miami, Fla. As the disturbance moved east by north, to the south of Cuba storm warnings were ordered down. The disturbance was of small extent but of moderate intensity causing some destruction to crops as it passed northeast over extreme eastern Cuba during the night of the 18th.

During this time another disturbance developed in about latitude  $30^{\circ}$ , longitude  $75^{\circ}$ , and moved northward. On the afternoon of the 17th storm warnings were ordered from Delaware Breakwater to Eastport, and on the evening of that date extended southward to Wilmington, N. C., and on the morning of the 18th extended northward to Eastport. Warnings were continued on the 19th from Hatteras to Eastport. Strong winds and gales were general.

A tropical disturbance of very slight character passed over St. Lucia, Windward Islands, during the night of the 28th. It thence moved northwestward passing through the Mona Passage and trace of it was lost northeast of the

Bahamas. So far as reports received up to this time indicate it was not of any appreciable energy.

Small-craft warnings were issued on the 9th between Atlantic City and Boston.

Frost warnings were ordered on the 8th, 10th, 12th, 13th, 14th, 16th, 17th, 18th and 19th.—*R. H. Weightman.*