

OCEAN GALES AND STORMS, APRIL 1934

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	Direction and highest force of wind	Shifts of wind near time of lowest barometer
	From—	To—	Latitude	Longitude									
NORTH ATLANTIC OCEAN													
Black Tern, Am.S.S.	Antwerp	New York	49 08 N.	27 34 W.	Apr. 2	2p, Apr. 1	Apr. 2	29.69	N	N, 6	NNW	N, 9	SE-SW-N.
West Quechee, Am.S.S.	New Orleans	Havre	48 21 N.	26 59 W.	Apr. 1	6a, 2	Apr. 4	29.65	N	ESE, 6	E	NNW, 10	NNW-ESE-E
Benekom, Du.S.S.	Curacao	Liverpool	43 03 N.	27 29 W.	do.	8a, 2	Apr. 2	29.29	NNW	NNW, 9	N	NNW, 10	None.
City of Joliet, Am.S.S.	Rotterdam	Tampa	30 18 N.	36 40 W.	Apr. 2	8a, 3	Apr. 3	30.02	NW	NNW, 6	NW	NW, 8	Do.
Winnipeg, Fr. S.S.	Havre	Cristobal	39 27 N.	25 32 W.	Apr. 3	4p, 3	Apr. 4	28.84	SW	SSW, 6	WNW	WSW, 8	S-SW
Padnasu, Am.S.S.	New York	Teneriffe	37 23 N.	48 38 W.	Apr. 6	6a, 6	Apr. 7	28.75	SE	SSW, 9	WSW	WSW, 10	SE-WSW.
Emanuel Nobel, Belg. S.S.	do.	Liverpool	57 46 N.	18 12 W.	Apr. 1	11a, 6	do.	29.65	NNW	NNE, 9	NNE	ENE, 10	None.
City of Joliet, Am.S.S.	Rotterdam	Tampa	27 40 N.	51 30 W.	Apr. 7	4a, 7	do.	29.74	WNW	W, 8	NW	NW, 8	W-WNW.
Selma City, Am.S.S.	Gibraltar	New York	36 35 N.	8 50 W.	Apr. 8	11a, 7	Apr. 8	29.55	W	WSW, 7	W	W, 8	WSW-W.
Boston City, Br. S.S.	Halifax	Cardiff	45 50 N.	41 24 W.	Apr. 5	3p, 7	Apr. 9	29.41	NNE	E, 10	E	E, 10	Steady.
Memphis City, Am.S.S.	Cristobal	Liverpool	34 10 N.	59 00 W.	Apr. 7	5p, 7	Apr. 7	29.90	NW	NW, 8	NW	NW, 8	None.
De la Salle, Fr. S.S.	Vigo	Guadeloupe	33 30 N.	35 00 W.	do.	1a, 8	Apr. 9	29.41	SW	SW, 7	WNW	WSW, 8	SW-W-WSW.
Skagerak, Ger.M.S.	Port Arthur	Antwerp	37 03 N.	48 45 W.	do.	4a, 8	Apr. 10	29.35	WNW	NW, 11	WNW	NW, 11	NW-NNW.
Selma City, Am.S.S.	Gibraltar	New York	36 45 N.	20 10 W.	Apr. 9	2a, 10	do.	29.27	SW	SW, 8	W	SW, 8	SW-W.
Pres. Harding, Am.S.S.	Cobb	do.	44 47 N.	44 12 W.	do.	10a, 10	do.	29.45	ENE	W, 6	E	E, 9	E-W.
Meanticut, Am.S.S.	New Orleans	Bremen	37 40 N.	67 48 W.	Apr. 11	2a, 11	Apr. 13	29.50	ENE	ENE, 8	ESE	ENE, 8	ENE-NE-ENE.
Memphis City, Am.S.S.	Cristobal	Liverpool	42 30 N.	42 20 W.	do.	3p, 11	do.	29.33	E	E, 10	NNE	E, 10	E-NE.
Selma City, Am.S.S.	Gibraltar	New York	37 01 N.	30 15 W.	do.	10a, 12	Apr. 12	29.40	W	W, 7	W	W, 10	None.
Berlin, Ger.S.S.	New York	Galway	40 45 N.	66 32 W.	Apr. 12	Noon, 12	do.	29.57	SSE	SE, 9	ESE	SSE, 10	SSE-ESE.
Skagerak, Ger.M.S.	Port Arthur	Antwerp	41 24 N.	27 40 W.	Apr. 11	4p, 12	Apr. 13	28.92	SW	SW, 10	NNW	SW, 10	SW-NNW.
Hubert, Br.S.S.	Leixoes	Liverpool	43 38 N.	9 16 W.	Apr. 13	1p, 13	Apr. 14	29.74	SW	SSW, 9	SSW	S, 10	S-SSW.
Chester Valley, Am.S.S.	Oran, Algeria	Galveston	31 52 N.	25 48 W.	Apr. 14	5a, 14	do.	29.56	SW	SW, 8	W	SW, 8	SW-W.
Yoseric, Br. S.S.	Huelva	Baltimore	35 45 N.	20 55 W.	do.	1p, 14	do.	29.52	SSW	SW, 9	SW	SW, 9	SSW-SW.
Skagerak, Ger.M.S.	Port Arthur	Antwerp	44 47 N.	19 00 W.	do.	10p, 14	Apr. 15	29.20	N	N, 9	NNW	N, 9	N-NNW.
Barneveld, Du.S.S.	Cristobal	Liverpool	41 12 N.	39 05 W.	Apr. 17	do.	Apr. 17	do.	NW	do.	NNW	NW, 9	NW-N.
Oakman, Am.S.S.	Antwerp	Galveston	48 23 N.	14 14 W.	Apr. 15	6a, 15	Apr. 15	29.07	SSE	S, 9	SW	SSW, 9	SE-SW.
Chilbar, Am.S.S.	Baltimore	New Orleans	35 15 N.	75 10 W.	do.	4p, 15	do.	29.87	S	S, 10	S	S, 10	None.
Blankaholm, Swed.M.S.	Galveston	Dunkirk	40 50 N.	57 24 W.	do.	4a, 16	Apr. 16	29.76	NW	NW, 9	NNW	NW, 9	Steady.
Stuttgart, Ger.S.S.	Galway	Halifax	52 30 N.	22 18 W.	Apr. 16	4p, 16	Apr. 17	29.13	N	N, 7	NW	NNW, 10	SE-NNW.
Baja California, Hond. S.S.	Bluefields	New Orleans	18 18 N.	84 42 W.	Apr. 18	6a, 17	Apr. 18	29.89	ENE	ESE, 4	NE	NE, 8	None.
Pacific Sun, Am. M.S.	Philadelphia	Port Arthur	29 04 N.	92 07 W.	Apr. 19	10a, 19	Apr. 19	30.06	NW	NW, 8	NW	NW, 8	SW-NW-N.
Cameronia, Br.S.S.	Moville	New York	55 00 N.	15 59 W.	Apr. 23	Noon, 23	Apr. 24	29.50	W	WNW, 8	W	WNW, 8	W-WNW.
Capulin, Am.S.S.	Dundee	Boston	57 30 N.	22 48 W.	Apr. 25	4a, 25	Apr. 25	29.24	NNW	NW, 5	NW	NNW, 8	NW-NNW.
Santa Lucia, Am.S.S.	Cristobal	New York	28 30 N.	79 18 W.	Apr. 30	Sp, 30	May 1	30.13	ENE	ENE, 8	E	ENE, 8	NE-ENE.
NORTH PACIFIC OCEAN													
Hikawa Maru, Jap. S.S.	Yokohama	Vancouver	45 01 N.	182 30 E.	Mar. 31	4a, Mar.31	Apr. 1	27.94	S	SSW, 8	W	W, 10	S-SW-W.
Empress of Asia, Br. S.S.	Vancouver	Yokohama	49 36 N.	171 12 E.	do.	8p, 31	Apr. 2	28.05	SSE	S, 9	W	WNW, 11	S-SW-W.
Koyo Maru, Jap. S.S.	Yokohama	Los Angeles	36 50 N.	156 40 E.	Apr. 1	5a, 2	do.	29.38	S	SSW, 8	WSW	SSW, 8	SSW-SW.
Taiyo Maru, Jap. S.S.	do.	Honolulu	34 10 N.	160 15 E.	Apr. 2	8a, 2	do.	29.82	SE	S, 8	SW	SSW, 9	SE-S-SSW.
Empress of Asia, Br. S.S.	Vancouver	Yokohama	46 05 N.	158 43 E.	do.	4p, 2	do.	28.96	ENE	ENE, 8	NNW	N, 9	ENE-N-NNW.
Pres. Grant, Am.S.S.	Victoria	do.	52 42 N.	159 07 W.	Apr. 3	6a, 4	Apr. 4	29.20	S	SW, 8	W	S, 9	SW-WSW.
Siljestad, Nor. M.S.	Iloilo	Los Angeles	31 30 N.	152 00 E.	Apr. 9	10p, 6	Apr. 10	29.16	NE	SSW, 4	ESE	NE, 9	SSW-W-N.
Shelton, Am. S.S.	Tacoma	Yokohama	52 04 N.	150 58 W.	Apr. 7	11p, 7	Apr. 8	29.48	SSW	SSW, 8	W	SSW, 9	SSW-W.
Pres. Grant, Am.S.S.	Victoria	do.	50 30 N.	179 10 W.	Apr. 5	4p, 7	Apr. 9	29.41	S	S, 6	WNW	W, 11	ESE-S-SW.
Shelton, Am. S.S.	Tacoma	do.	51 36 N.	165 32 W.	Apr. 11	2a, 12	Apr. 12	29.47	S	W, 6	S	S, 9	S-W.
Pres. Jackson, Am. S.S.	Yokohama	Victoria	49 30 N.	174 00 W.	Apr. 10	Mdt. 11	Apr. 11	29.46	S	W, 7	SW	SW, 8	None.
Koyo Maru, Jap. S.S.	do.	Los Angeles	36 41 N.	146 10 W.	Apr. 11	2a, 12	Apr. 12	29.07	ENE	E, 3	WSW	N, 8	E-NE-N
Shelton, Am. S.S.	Tacoma	Yokohama	51 20 N.	170 14 W.	Apr. 13	6a, 13	Apr. 13	29.40	S	SSW, 9	W	W, 10	S-W.
Tosari, Du. M.S.	Macassar	Los Angeles	38 17 N.	159 08 W.	do.	5a, 13	do.	29.70	NW	NW, 8	N	N, 8	NNW-NW-NNW.
Oregon, Am. S.S.	Shanghai	Portland, Oreg.	49 51 N.	169 00 W.	do.	8a, 13	do.	29.53	SW	SW, 9	SW	SW, 9	None.
Olympia, Am. S.S.	Manila	Los Angeles	36 17 N.	147 02 E.	Apr. 14	3a, 14	Apr. 14	29.80	N	N, 8	N	N, 8	NE-N-NNW.
Shelton, Am. S.S.	Tacoma	Yokohama	50 45 N.	175 20 W.	do.	6p, 14	Apr. 15	29.03	SW	WSW, 11	NW	WSW, 11	S-WSW.
Hiye Maru, Jap. M.S.	Yokohama	Vancouver	48 00 N.	173 13 E.	Apr. 15	5a, 15	do.	29.30	SW	SW, 8	W	W, 10	SW-W.
Golden Star, Am. S.S.	Siain, P.I.	San Francisco	36 06 N.	152 10 E.	Apr. 17	8a, 17	Apr. 18	29.70	WSW	WSW, 8	NW	W, 9	SW-WSW-W.
Hokuroku Maru, Jap. M.S.	Los Angeles	Yokohama	43 46 N.	141 55 W.	Apr. 18	4a, 18	Apr. 19	29.17	WNW	SSW, 7	NW	WNW, 8	S-W.
Oregon, Am. S.S.	Shanghai	Portland, Oreg.	49 11 N.	138 41 W.	do.	Noon, 18	Apr. 18	29.29	E	SE, 7	E	E, 9	E-SE.
Olympia, Am. S.S.	Manila	Los Angeles	42 21 N.	164 53 E.	Apr. 17	2p, 18	Apr. 19	29.36	ESE	SW, 8	W	SW, 9	S-SW-WSW.
Tacoma, Am. S.S.	Tsingtao	Seattle	48 00 N.	163 35 E.	Apr. 18	7p, 18	do.	28.61	NNW	SSW, 4	W	WNW, 10	S-W.
Shelton, Am. S.S.	Tacoma	Yokohama	49 18 N.	172 54 E.	do.	3a, 19	do.	28.68	ESE	SW, 9	W	WSW, 12	SSW-W.
Siljestad, Nor. M.S.	Iloilo	Los Angeles	40 50 N.	140 40 W.	do.	3a, 20	Apr. 20	29.88	NW	W, 8	WSW	W, 9	WNW-WSW.
Frank G. Drum, Am.S.S.	La Union	do.	14 30 N.	95 30 W.	Apr. 21	10p, 21	Apr. 22	29.85	N	N, 8	NW	N, 8	None.
Pres. Jefferson, Am. S.S.	Yokohama	Victoria	37 27 N.	144 23 E.	do.	2p, 22	do.	29.53	NNW	NW, 9	NW	NW, 9	None.
Golden Star, Am. S.S.	Siain, P.I.	San Francisco	45 26 N.	156 50 W.	Apr. 28	2p, 26	Apr. 27	29.69	WNW	WNW, 8	WNW	WNW, 9	None.
New Westminster City, Br. S.S.	Philippines	Los Angeles	35 20 N.	189 52 E.	Apr. 28	6p, 28	Apr. 28	29.49	S	S, 8	S	S, 8	S-SSW.
Fernhill, Nor. M.S.	Manila	do.	36 25 N.	148 10 E.	Apr. 30	4p, 30	May 1	29.38	S	S, 8	NNW	W, 9	S-WSW.

1 Position approximate.

2 Barometer uncorrected.

NORTH PACIFIC OCEAN, APRIL 1934

By WILLIS E. HURD

Atmospheric pressure.—Pressure was abnormally low over the Aleutian region during April 1934, with the departure from average at St. Paul Island as great as 0.29 inch. The average barometers at this station and Dutch Harbor were 29.53 and 29.50 inches, respectively, both of which readings were considerably lower than the averages for the previous month.

The North Pacific anticyclone this month was central in the neighborhood of Midway Island, where the average pressure was 30.27 inches, or 0.15 inch above the normal. There was absence of the average winter-type anticyclone over the East China Sea, showing that spring conditions of pressure had set in over middle and lower waters of the Far East.

The lowest barometer reading of the month reported was 28.61 inches, read on the American S.S. *Tacoma*, in 48°00' N., 163°35' E., on the 18th.

TABLE 1.—Averages, departures, and extremes of atmospheric pressure at sea level, North Pacific Ocean, Apr. 1934, at selected stations

Stations	Average pressure	Departure from normal	Highest	Date	Lowest	Date
	<i>Inches</i>	<i>Inch</i>	<i>Inches</i>		<i>Inches</i>	
Point Barrow.....	30.05	-0.04	30.54	28, 29	29.48	1
Dutch Harbor.....	29.53	-0.25	30.26	6	28.70	3
St. Paul.....	29.50	-0.29	30.14	5, 24	28.72	3
Kodiak.....	29.65	-0.10	30.30	13	28.80	15
Juneau.....	29.99	+0.03	30.44	13	29.22	9
Tatoosh Island.....	30.08	+0.08	30.42	2	29.70	22
San Francisco.....	30.01	-0.04	30.14	25	29.79	14
Mazatlan.....	29.92	+0.03	29.98	1, 28, 30	29.84	13
Honolulu.....	30.05	-0.01	30.19	29	29.82	9
Midway Island.....	30.27	+0.15	30.40	7	30.08	26
Guam.....	29.91	+0.02	29.98	29	29.84	21
Manila.....	29.82	-0.08	29.94	8	29.74	27
Naha.....	29.97	+0.05	30.24	8	29.66	28
Chichishima.....	30.00	+0.03	30.34	8	29.74	27
Nemuro.....	29.89	-----	30.54	10	29.12	24

NOTE.—Data based on 1 daily observation only, except those for Juneau, Tatoosh Island, San Francisco, and Honolulu, which are based on 2 observations. Departures are computed from best available normals related to time of observation.

Cyclones and gales.—The rather unusual occurrence of abnormally low pressure in higher middle latitudes accompanied by abnormally high pressure in lower mid-ocean during April, would seem to have resulted in much stormy weather along the central parts of the trans-Pacific steamer routes. Yet this central region, except to the immediate south of the Aleutian Islands, and for a brief period south of Midway Island, is indicated by reports to have been free from gales. The high winds south of Midway were of force 8 to 10 from the northeast, on the 5th and 6th, and resulted from a strong local intensification of the trades.

The stormiest weather of the month occurred south and southwest of the Aleutian Islands. At the close of March a deep cyclone, with lowest pressure about 28 inches, lay between 45° and 50° N., 160° to 170° E., with forces of 10 to 11 encountered over a considerable surrounding area. The storm decreased in depth on April 1, but with the storm forces of the previous day continuing.

On the 8th another cyclone from the westward entered this area and caused further gales, reported as high as force 11, near the 50th parallel, between 175° W. and approximately 170° E. Gales of force 11 likewise oc-

curred near 49° N., 175° W., on the 14th, during a stormy period lasting from the 13th to 15th in Aleutian waters.

On the 17th and 18th stormy weather, with gales of force 9 to 10, set in to the eastward of Japan. By the 19th the storm area had traveled north and northeast, with high wind velocities, which attained a maximum force of 12, lowest barometer 28.68 inches, near 49° N., 173° E. The gale field on this day extended roughly between longitude 175° W. and the Kuril Islands. Thereafter storm conditions in this vicinity rapidly lessened in intensity.

In middle latitudes, between longitude 170° E. and Japan, gales of force 8 to 9 were reported on 10 days, mostly related to cyclones originating over Asia or in adjacent waters.

Two depressions of note originated to the eastward of the Hawaiian Islands in April and slowly moved northward until they coalesced with depressions overlying the northeastern part of the ocean. The first caused fresh gales between 35°-40° N., 145°-160° W., on the 11th to 13th, and the second, fresh to strong gales between 40°-50° N., 135°-150° W., on the 18th to 20th.

Tropical gales.—Weather was generally quiet in the tropics during April and the only high winds worthy of note were a moderate monsoon gale encountered in the Taiwan Channel on the 13th and a Tehuantepecer of force 8 in Mexican waters on the 21st.

Fog.—A decided change in fog distribution occurred since the preceding month. Much less fog was observed in American coast waters, and much more was encountered over the ocean in east longitudes. Off the coast of California it was noted on 10 days and off the Peninsula of California and vicinity on 4 days. On the 27th the master of the S.S. *Chester Sun*, who observed fog south of Manzanillo, spoke of its occurrence there as extraordinary. Dense fog was met with near 10° N., 89° W., on the 19th. Fog was infrequent and scattered as a rule east of the 180th meridian, except along the coast, but was well distributed over the ocean in east longitudes, where April was the first month of its important occurrence since October 1933. Here it was observed on 1 to 2 or more days in most 5° areas north of the 30th parallel and on 3 days farther southward between the Ogasawara and Marianna Islands.