

NORTH ATLANTIC TROPICAL DISTURBANCES OF 1941

By HOWARD C. SUMNER

[Weather Bureau, Washington, January 1942]

The hurricane season of 1941, near normal in other respects, was of exceptionally short duration. During the 37 days between the 11th of September and the 18th of October, 6 tropical disturbances developed in rapid succession, an average of approximately 1 storm every 6 days. The 21 disturbances of 1933, the highest number ever recorded in a single season during the 55-year period of record, had an average of about 8.5 days between storms.

The first and last storms of the past season were of slight intensity with only minor damage being reported. The remaining disturbances all developed winds of full hurricane force. They took a combined toll of over 60 lives, and wrought crop and property losses estimated at well over \$10,000,000. An unusual situation developed September 23 when 3 hurricanes (II, III, and IV on the accompanying chart) were in progress simultaneously at widely separated points, one in the eastern Caribbean, one in the Gulf of Mexico, and another in the North Atlantic off Hatteras.

The only disturbance associated with the Caribbean Sea area traversed the entire length of that body of water from east to west, maintaining hurricane winds for almost the entire distance. It then moved across the coast of Nicaragua and emerged into the Gulf of Honduras with undiminished intensity. After crossing additional countries of Central America and the Bay of Campeche it moved inland, for the third time, and dissipated south of Tampico, Mexico. Of the remaining disturbances, two crossed the Texas coast, two moved inland in Florida, and one spent its energy over the North Atlantic, with no destructive winds being reported on land.

Two-thirds of these disturbances developed winds of hurricane force. This proportion, though considerably above normal, is not unusual when all or most of the disturbances develop during a short period at the height of the hurricane season.

A synopsis of the tropical disturbances of 1941 is given in the following table. Their tracks, numbered I to VI chronologically, are shown on the accompanying chart.

NORTH ATLANTIC TROPICAL DISTURBANCES OF 1941

[Synopsis of tropical disturbances of 1941 (number of storm in table corresponds to number of track on accompanying chart)]

Storm	Date	Place where first reported	Coast lines crossed	Maximum wind velocity reported	Lowest barometer reported	Place of dissipation	Intensity	Remarks
I.....	Sept. 11-15.	About 120 miles southeast of Port Eads, La.	Texas.....	Force 8 ENE, a ship.	1002.7 millibars (29.61 inches), a ship.	East Texas coast....	Not of hurricane intensity.	No property damage or injuries reported (A).
II.....	Sept. 18-26.	About 180 miles south of Port Eads, La.	do.....	Force 12 NE., a ship, 83 miles per hour, Texas City, Tex.	970.5 millibars (28.66 inches), a ship.	Southern Quebec Province.	Full hurricane....	4 lives lost; \$2,000,000 property damage; crop losses estimated in excess of \$5,000,000 (A).
III.....	Sept. 18-26.	Off east central Florida coast.	None.....	Force 12 ESE, a ship.	995.3 millibars (29.39 inches), a ship.	Near 38° N., 63° W.	do.....	Caused considerable delay in North Atlantic shipping (A).
IV.....	Sept. 23-30 ¹ .	Between Barbados and St. Lucia.	Nicaragua, British Honduras, and Mexico.	100 miles per hour (estimated), a ship.	992.9 millibars (29.32 inches), a ship.	Eastern Mexico.....	do.....	47 lives lost at sea; 3 drowned at Cape Gracias; heavy crop and property damage in Central America (A).
V.....	Oct. 3-12.	About 300 miles north of Virgin Islands.	Florida.....	123 miles per hour, Pan-American Dinner Key base.	964.4 millibars (28.48 inches), Cat Island.	South of Bermuda.....	do.....	8 lives lost in the Bahamas and Florida; considerable property and crop damage in Florida, Georgia and the Bahamas (B).
VI.....	Oct. 18-21 ² .	About 100 miles off the west Florida coast.	do.....	45 miles per hour WSW, a ship.	1002.4 millibars (29.60 inches), a ship.	North Florida.....	Not of hurricane intensity.	Torrential rains wrought some flood damage in northern Florida (B).

¹ A late special report received from Mr. Albert Krog, Radio Operator of the Standard Fruit & Steamship Co., Puerto Cabezas, Nicaragua, states that on September 27, about 20 miles up the Rio Coco from Cape Gracias, the barometer on the schooner *Bravo* fell to 28.25 inches (uncorrected), at about 3 p. m. Farther inland from the Cape, at Boom, the central calm of the hurricane lasted from 5 to 6 p. m.

² Squally weather had moved across the southern Bahamas and through the Florida Straits during the preceding 2 days, but no definite cyclonic circulation could be detected until the evening of Oct. 18.

Complete reports of these disturbances may be found in the MONTHLY WEATHER REVIEW: (A) September 1941; 69: 264-266. (B) October 1941; 69: 303, 304.

1941	1940	1939	1938	1937	1936	1935	1934	1933	1932	1931	1930	1929	1928	1927	1926	1925	1924	1923	1922	1921	1920	1919	1918	1917	1916	1915	1914	1913	1912	1911	1910	1909	1908	1907	1906	1905	1904	1903	1902	1901	1900	1899	1898	1897	1896	1895	1894	1893	1892	1891	1890	1889	1888	1887
1941	1940	1939	1938	1937	1936	1935	1934	1933	1932	1931	1930	1929	1928	1927	1926	1925	1924	1923	1922	1921	1920	1919	1918	1917	1916	1915	1914	1913	1912	1911	1910	1909	1908	1907	1906	1905	1904	1903	1902	1901	1900	1899	1898	1897	1896	1895	1894	1893	1892	1891	1890	1889	1888	1887

TROPICAL DISTURBANCES OF SEPTEMBER 1941

By HOWARD C. SUMNER

[Weather Bureau, Washington, October 1941]

The first tropical disturbance of the 1941 hurricane season appeared in the northern Gulf of Mexico on the evening of September 11. This is the first time in over 25 years that the North Atlantic area has been free from tropical disturbances until so late in the season. Annual records, from 1887 to the present time, show that only on two other occasions have tropical storms failed to develop before the 11th of September. In 1907 and 1914 the first tropical disturbances of the season were observed on September 16 and September 14, respectively.

After the unusually late start, four disturbances developed in rapid succession, between September 11 and 23, two of which were accompanied by winds of full hurricane force. The last three of these disturbances were in progress at the same time, with advisories being issued simultaneously by the supervising centers at Washington, New Orleans, and San Juan.

September 11-15, 1941.—A Gulf disturbance of slight intensity appeared on the morning of September 11, and was centered at 7 a. m.¹ about 120 miles southeast of Port Eads, La. The center moved very slowly in a west-northwesterly direction toward the north Texas coast and moved inland, between Galveston and Port Arthur, the night of September 14-15, resulting in a series of squalls at Port Arthur.

The lowest barometer reported during the short 5-day course of this storm, 1,002.7 millibars (29.61 inches),

¹ Times mentioned are E. S. T. unless otherwise indicated.

accompanied by a force 8 wind (Beaufort scale), came from a ship near 28°06' N., 90°18' W., on September 13.

On the coast the highest wind velocity registered was 31 miles per hour from the east at Port Arthur and the lowest barometer 1,007.5 millibars (29.75 inches) at 4:30 p. m. (C. S. T.) on the 14th at the same station. Rainfall for the 2-day period (14-15) at Port Arthur was 1.52 inches.

This disturbance was sufficiently threatening on the 13th for warnings to be issued to people in low-lying areas; but during the last 24 hours before it crossed the coast it decreased greatly in intensity and no property damage or injuries were reported.

September 18-26.—This hurricane was first noted as a disturbance of slight intensity about 180 miles south of Port Eads, La., on September 18. For 48 hours the center drifted gradually southward toward the Yucatan coast with winds increasing to gale force. During the night of September 20-21 the storm turned, and moving northward retraced its path until, on the evening observation of the 21st, it was again near the region where first detected. It then took a northwestward course through the western Gulf of Mexico and moved inland on the Texas coast near Matagorda at 3:25 p. m. (C. S. T.) on September 23.

A ship near 27°06' N., 93°42' W., on September 22 reported a northeast wind, force 12, and a low barometer reading of 985.8 millibars (29.11 inches).

On the coast, Texas City reported the highest recorded

wind velocity, 83 miles per hour. Estimated winds up to 100 miles per hour came from several points nearer the storm center.

The following excerpts from a report by G. P. Rasmusel, of the Galveston office, relate to conditions at that station during the approach and passage of the storm:

There was little characteristic sky appearance prior to the advent of the storm, the sky being mostly clear until lower clouds appeared suddenly between 6 and 7 a. m. C. S. T., on the 22d with alto-cumulus and alto-stratus overcast showing through breaks occasionally during the day. By late afternoon of the 22d the sky became completely overcast with low clouds of bad weather which predominated throughout the remainder of the storm. * * * Tides had been somewhat above normal at Galveston since the minor disturbance of September 11-15 and began to rise again on the 21st, and more rapidly to a crest of 6.7 feet at 8 p. m. and 10 p. m., C. S. T. on the 22d, then falling to 5.0 feet at 1 p. m. of the 23d. Tides rose again thereafter to a crest of 7.0 feet at 9 and 10 p. m. C. S. T. on the 23d, after which they subsided rapidly. * * *

The sea was rather light at about 10 swells per minute until the storm moved toward the Texas coast, after which an increase set in becoming very heavy and reaching 5 swells per minute at the height of the storm. * * *

Tidewater covered all of the Galveston Island beaches, much of the island beyond the seawall, and entered the lower residential and business sections as backwater from the bay. * * * Tidewater also covered the municipal airport to a depth of approximately 1 to 3 feet and was about 6 inches deep on the floor of the airport administration building and in the C. A. A. communications station room, putting that office out of commission until after the water receded and power and telephone service was restored the evening of the 25th.

Recurving to the northeastward after crossing the Texas coast the storm center passed slightly west of Houston. The lowest pressure registered along the path of the hurricane, 970.5 millibars (28.66 inches), was observed at Houston Airport at 11:08 p. m. of the 23d. The passage of the low pressure was accompanied by winds estimated at 75 miles per hour; a recorded velocity becoming impossible because of power failure.

Progressive movement of the storm increased rapidly as the center moved up the Mississippi Valley and passed over the Canadian boundary in the Lake region.

Available sources estimate property damage at well over \$2,000,000. The rice crop in the region affected was ruined, and has been estimated as a loss of \$4,000,000. About 25 to 30 percent of the cotton crop had been picked in this section. Half of that remaining in the fields has been reported lost.

Warnings on this storm were given the widest possible dissemination by radio, press, telegraph, and telephone. As a result of these warnings an estimated 25,000 persons left their usual place of abode for safer surroundings. The smaller towns along the coast were practically deserted. It is noteworthy that, so far as is known, only four lives were lost, either directly or indirectly, as a result of this storm which traversed a low-lying region where without warning thousands would have been left to the mercy of wind and tide.

September 18-26.—On the morning of the 18th, disturbed conditions and squally weather were observed over the Atlantic east of Florida, with indications of a center of circulation about 150 miles east of Titusville. During the 18th this disturbance moved in a direction slightly north of east with highest wind, force 7, reported in squalls. It then curved sharply to the eastward and by the morning observation of the 20th appeared as a very large elongated low pressure area extending from the Bahamas to Bermuda with center about latitude 29°30' N., longitude 71°00' W. During the night the center executed a right-hand loop and headed northwestward toward the North Carolina coast.

Along the path of this storm from September 20 to 23 several ships reported winds force 11, with the lowest barometer observed, during this period, 995.3 millibars (29.39 inches) at 30°00' N., 70°10' W. on September 20.

A ship bound from Curacao to New York had two encounters with this storm; first near 30°11' N., 71°45' W. on the morning of September 20, when at 4 a. m. a low barometer of 1,006.4 millibars (29.72 inches) was recorded, and again 2 days later near 34°13' N., 75°09' W., with the barometer falling to 1,004.7 millibars (29.67 inches) at 8 p. m. on September 22. During the interval between these observations the center of the storm, which during the first encounter had been moving eastward south of the vessel, turned in its track and overtook the ship from the southeast (track III, chart 1). Force 8 winds were encountered on both occasions.

Late on the 22d the storm recurved to the northeastward in about 33°30' N., 74°00' W., passing about 150 miles east of Hatteras, and dissipated in the western North Atlantic on the 26th.

This storm did not develop hurricane intensity but was attended by strong winds and gales which caused considerable delay in North Atlantic shipping.

Timely small craft warnings kept small boats along the coast out of danger. No destructive winds occurred on land.

September 23-30.—This storm was first noticed as a very slight disturbance about 75 miles northwest of Barbados in the early afternoon of September 23. Moving almost due west it passed slightly south of St. Lucia and into the Caribbean Sea, where it quickly developed hurricane intensity.

On the morning of the 25th the hurricane-buffed freighter m. s. *Ethel Skakel* flashed a "sinking" message from 125 miles north of Aruba, Dutch West Indies, and later went down with her cargo of steel rails near 14° N., 70° W. Of the crew of 33 men, only 13 were reported rescued, the other 20 being presumably lost.

Two other vessels sent distress signals from locations near the path of the storm, one of which was later reported lost with her entire crew of 27 men.

Taking a course slightly north of west the storm then moved across the western Caribbean and by the morning observation of the 27th was centered in the vicinity of Cape Gracias, Nicaragua.

Through the courtesy of Jose Carlos Millas, Director of the National Observatory at Havana, Cuba, the following report has been received:

Today (October 1), we have been able to establish contact with Cape Gracias. The town was destroyed and our station is practically lost. As I had advised the Governor that the hurricane would pass through that place the day before, all the people fled, except 11, of which 3 were drowned. The observer stayed until 9:45 a. m. (of the 27th), at which time he sent his last message. The observation building also came down. The sea flooded the town, reaching a height of about 2 meters, wrecking everything there. The inhabitants have come back to what is left of the place.

From Cape Gracias the hurricane moved with slightly increased speed across extreme northern Honduras, passing into the Gulf of Honduras, near La Ceiba, about 9 a. m. (local time) of the 28th, with lowest barometer reported 992.9 millibars (29.32 inches), and still accompanied by winds of hurricane force. A vessel, located 16 miles north of Ceiba, reported winds estimated at 100 miles per hour, after passage of the center. The storm moved inland again over the coast of British Honduras, about 70 miles south of Belize, during the afternoon of the 28th, and 24 hours later emerged into the Bay of Campeche. Continuing to move west-north-

westward the disturbance decreased rapidly in intensity as it approached the Mexican coast, and moved inland, for the third time, as a weak depression near Vera Cruz on September 30.

Complete information regarding loss of life and prop-

erty damage for this storm is not available at this time, but since it was of hurricane intensity, damage in the Central American countries affected was probably severe.

The tracks of these tropical disturbances of September 1941 are shown on the accompanying chart.

HURRICANE OF OCTOBER 3-12 AND TROPICAL DISTURBANCE OF OCTOBER 18-21, 1941

By HOWARD C. SUMNER

[Weather Bureau, Washington, November 1941]

Hurricane of October 3-12, 1941.—The first indications of this storm were observed over the Atlantic about 300 miles north of the Virgin Islands on the evening of October 3. Morning observations of the 4th showed a definite circulation and established the center near latitude 23° N., longitude 67° W. Moving in a west-northwesterly direction, the storm crossed the Bahama Islands and passed a short distance south of Nassau on the evening of October 5, at which time it was determined to be a small but highly developed storm of hurricane force.

Hon. John H. E. McAndrews, American vice consul at Nassau, made the following report of storm conditions on New Providence Island:

The storm which broke about 7:35 p. m. Sunday evening centered south of Nassau. The velocity of wind registered 102 miles per hour, averaging between 70-75 miles per hour. The barometer reached 29.12 inches (986.1 millibars).

The consulate was kept in touch with the weather forecast by cables sent out by the Jacksonville, Fla., Weather Bureau, and I notified all Americans by personal calls and telephone.

From present records there were no casualties and the only serious reported loss is one made by Henry Von Berge whose schooner *Goodwill 11* was sunk during the storm. Considerable damage was done to property and all gardens were more or less devastated.

The wind velocity of 102 miles per hour, reported by Mr. McAndrews and registered by a Dines gust recorder, was the highest recorded on the islands during the passage of this storm. The lowest barometer 964.4 millibars (28.48 inches) was registered at The Bight, Cat Island. In addition to the islands of New Providence and Cat, damage resulted on Watling, Exuma, northern Andros, and islands of the Bimini group.

Observations from these islands, relayed through the Director of Telecommunication, Nassau, were invaluable in enabling the forecasters at the Jacksonville office to issue frequent and accurate warnings as the storm approached the southeast Florida coast.

Storm conditions in the Miami area are summarized in the following extracts from the report of Ernest Carson, official in charge at the Miami office:

On October 6, 1941, a small tropical storm moving slightly north of west, passed over extreme southern Florida and into the Gulf of Mexico. Its center moved inland about 13 miles south of Miami at 5:30 a. m.; and at 5:45 a. m., Goulds, Fla., a short distance inland, was in the calm area. * * *

The lowest barometer reading in Miami was 994.9 millibars (29.38 inches) at 5 a. m. on the 6th; and 991.5 millibars (29.28 inches) at Fowey Rock Lighthouse, located 12 miles east-southeast of Miami, at 4:30 a. m. The wind reached a velocity of 68 miles per hour (fastest mile on triple register) at 4:47 a. m. Velocities somewhat higher, no doubt, occurred during the next hour; however, due to interference of a taller building to the east of the station, these were not indicated on the register. At Pan American Dinner Key a peak velocity of 123 miles per hour was recorded, with a sustained velocity of 90 miles per hour for 30 seconds.

The most notable feature of this storm was the unusually light rainfall in Nassau and Miami during its approach and passage.

Continuing in a west-northwesterly direction the storm crossed the Everglades south of Lake Okeechobee and passed into the Gulf between Everglades City and Fort Myers about 11 a. m. of the 6th. Along the south shore of the lake, gusts of 60 miles per hour were reported. The lowest pressure, at Everglades City, 995.6 millibars (29.40 inches), was accompanied by winds exceeding 65 miles per hour and a tide of 4.1 feet which flooded the

town and surrounding low country to a depth of about 1 foot. Fort Myers was on the northern edge of the storm and suffered little damage from strong winds.

Curving toward the north in the Gulf of Mexico the center moved up the west Florida coast, some distance off shore, causing strong winds at some of the outlying island stations. Edgmont Key at the mouth of Tampa Bay estimated the wind at 60 miles per hour. The disturbance moved inland again at Carrabelle where the calm eye of the storm was experienced between 3:30 and 4:30 a. m. of the 7th. Winds of 65 to 75 miles per hour accompanied the storm at this point, with lowest barometer reported as 982.1 millibars (29.00 inches).

Diminishing somewhat in intensity, but still accompanied by winds with gusts up to 75 miles per hour, the center moved northeastward across Georgia with considerable damage reported along its path as far north as Albany. North of that point little damage was caused by the diminishing winds that attended the storm into South Carolina, where it passed into the Atlantic in the vicinity of Charleston about 8 a. m., October 8.

Although this storm increased somewhat in intensity after moving into the Atlantic, no ship along its later path reported winds higher than force 9. It was traced in a looping course eastward over the ocean until it passed south of Bermuda near latitude 30° N., during the night of October 11-12.

Damage in Florida resulting from this storm has been estimated at \$675,000, about equally divided between the northern and southern portions of the State.

Five men were drowned near the small fishing village of Panacea, east of Carrabelle, and these added to three deaths reported from the Bahamas, bring the total of lives lost during this storm to eight. So far as is known seven injuries resulted, none of which could be directly attributed to the storm.

Instrumental in establishing these low figures for loss of life and property damage resulting from this hurricane, were the advisories, warnings, and bulletins, 40 in all,

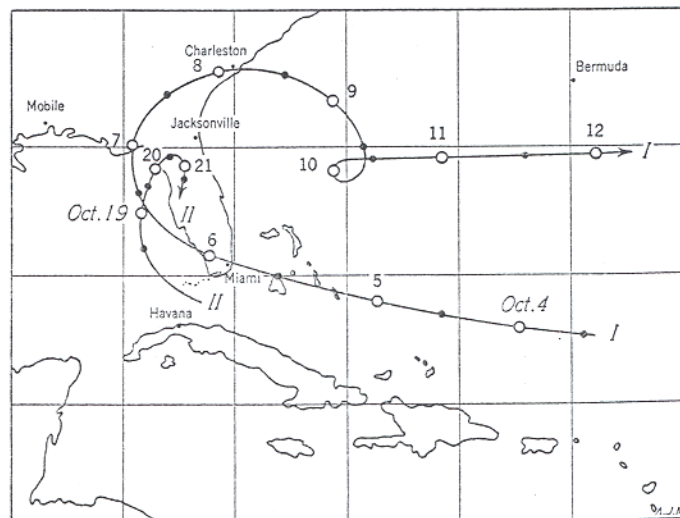


FIGURE 1.—Approximate tracks of tropical storms of October 1941. Open circles on tracks indicate locations of center at 7:30 a. m., E. S. T., of date entered nearby; solid circles indicate locations of center at 7:30 p. m.

issued by the Jacksonville office and promptly distributed by the local offices in cooperation with all communication services.

Disturbance of October 18-21.—The first indications of a definite circulation in connection with this slight tropical disturbance were noted about 100 miles off the west Florida coast on the night of October 18-19. It had developed from a wave of low pressure and squally weather that had moved across the southern Bahamas and through the Florida Straits a few days previously, and for which small-craft warnings had been issued on the morning of October 17.

On the morning of October 19, a ship, 50 miles west of Tampa, reported a west-southwest wind of 45 miles per hour and a barometer reading of 1,002.4 millibars (29.60 inches). From this location the storm center then moved

north-northwestward and passed inland at Cedar Key, about noon of the 20th, where the lowest barometer reading was 1,005.8 millibars (29.70 inches).

Available observations show no winds over moderate gale force (40 to 50 miles per hour) during the progress of this storm. Torrential rains (10 to 15 inches) occurred at several points near the center as the disturbance stalled and dissipated over northern Florida.

A report from Ocala lists the death of a 6-weeks-old infant, hurled 100 feet from its basket, and injury to both parents when their house was demolished by high winds. This report indicates the formation of a small and short-lived tornado rather than any highly destructive winds resulting directly from the tropical disturbance. All other reported damage resulted from flooding due to the excessive rains.