

Tropical Cyclone Report
Tropical Storm Karina
(EP12008)
2-3 September 2008

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Karina was a short-lived tropical cyclone.

a. Synoptic History

The development of Karina appears to be associated with the same tropical wave that spawned Gustav in the Caribbean Sea. While Gustav was over Hispaniola, the southern portion of the wave continued westward across the Caribbean Sea and moved over Central America on 28 August, accompanied by limited shower activity. The convection gradually increased as the wave continued westward across the eastern North Pacific. The wave finally triggered the development of a low pressure area near the coast of Mexico to the south of Manzanillo on 30 August. Strong easterly wind shear mostly kept the thunderstorm activity separated from the area of low pressure as the system continued westward. However, deep convection eventually became sufficiently close to the low pressure center to determine that a tropical depression formed at 0600 UTC 2 September, when the system was located about 340 n mi south of the southern tip of Baja California. There was a small relaxation of the shear and the depression became a tropical storm at 1200 UTC 2 September, with 35 knot winds and a minimum pressure of 1000 mb. Thereafter, the shear increased again and the center became separated from the convection. Steady weakening began and by 1800 UTC 3 September, Karina was no more than a remnant low which quickly dissipated.

The “best track” chart of the tropical cyclone’s path is given in Fig. 1, with the wind and pressure histories shown in Figs. 2 and 3, respectively. The best track positions and intensities are listed in Table 1¹.

b. Meteorological Statistics

Observations in Karina (Figs. 2 and 3) include satellite-based Dvorak technique intensity estimates from the Tropical Analysis and Forecast Branch (TAFB) and the Satellite Analysis Branch (SAB). Data from the NASA QuikSCAT was also useful in tracking Karina. The cyclone’s maximum intensity was assigned at 1200 UTC 2 September when the convection was the closest to the low-level center. A QuikSCAT pass at 1400 UTC provided support for the 35-knot intensity of Karina.

¹ A digital record of the complete best track, including wind radii, can be found on line at <ftp://ftp.nhc.noaa.gov/atcf>. Data for the current year’s storms are located in the *brk* directory, while previous years’ data are located in the *archive* directory.

c. Casualty and Damage Statistics

There were no reports of damage or casualties associated with Karina.

d. Forecast and Warning Critique

A description of the weather system from which Karina originated was included in Tropical Weather Outlook (TWO) products beginning at 1800 UTC 30 August. However, the system was not forecast to develop due to the presence of strong upper-level winds. The possibility of tropical cyclone formation was not included in the TWO until 0000 UTC 2 September, about 6 h prior to genesis. In fact, a special advisory package for Tropical Storm Karina was required when first visible images indicated that the disturbance was a tropical storm. The experimental genesis forecast probability never reached the high category ($> 50\%$) before genesis.

Karina only lasted for 24 hours and the average official track errors were 18 and 18 n mi for the 12, and 24 h forecasts, respectively. These errors are lower than the average long-term official track errors of 32 and 58 n mi, respectively

Average official intensity errors were 5 and 10 kt, for the 12, and 24 h forecasts, respectively. For comparison, the average long-term official intensity errors are 6, and 10 kt, respectively.

Table 1. Best track for Tropical Storm Karina, 2-3 September 2008.

Date/Time (UTC)	Latitude (°N)	Longitude (°W)	Pressure (mb)	Wind Speed (kt)	Stage
02 / 0600	18.6	110.0	1002	30	tropical depression
02 / 1200	19.2	111.0	1000	35	tropical storm
02 / 1800	19.5	111.8	1000	35	"
03 / 0000	19.9	112.6	1000	30	tropical depression
03 / 0600	20.1	113.4	1002	30	"
03 / 1200	20.2	113.8	1005	25	"
03 / 1800	20.3	114.0	1006	25	low
04 / 0000					dissipated
02 / 1200	19.2	111.0	1000	35	minimum pressure

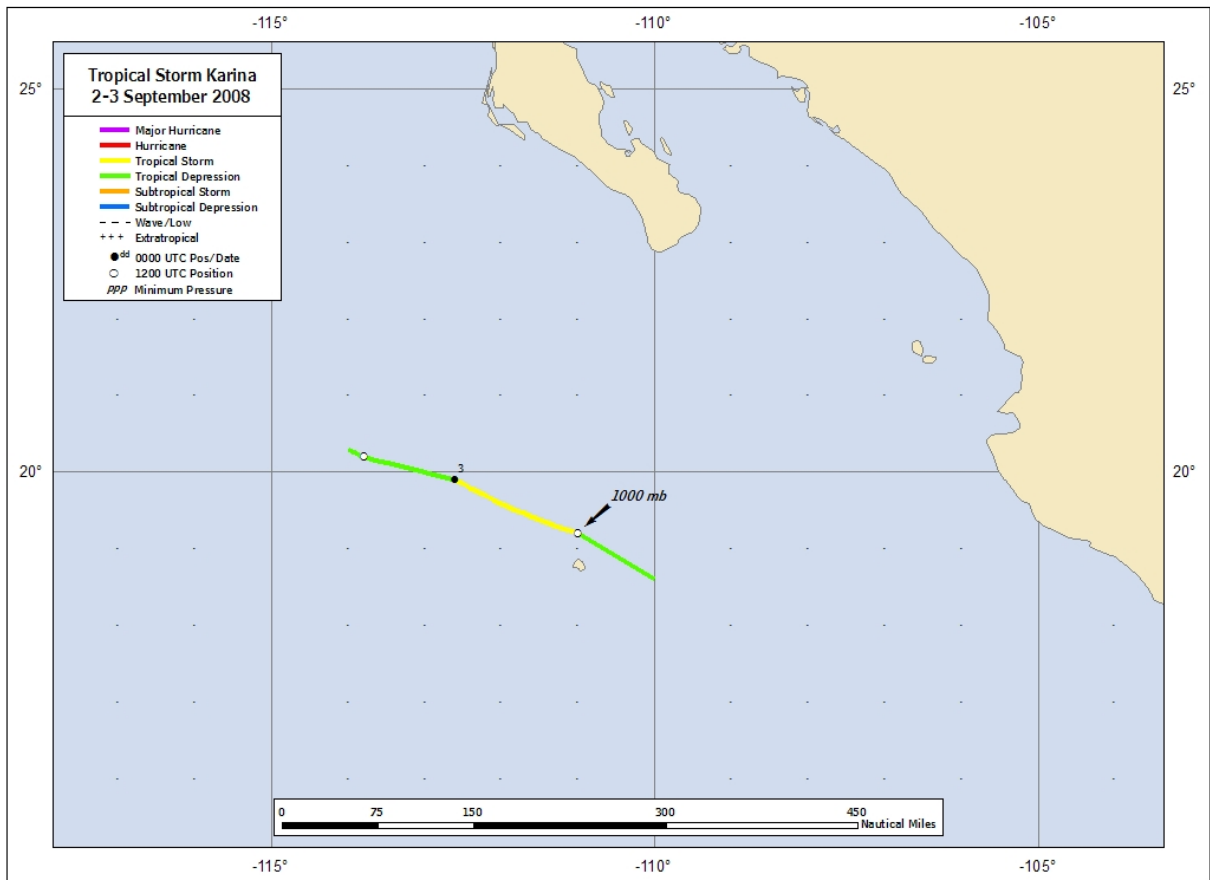


Figure 1. Best track positions for Tropical Storm Karina, 2-3 September 2008.

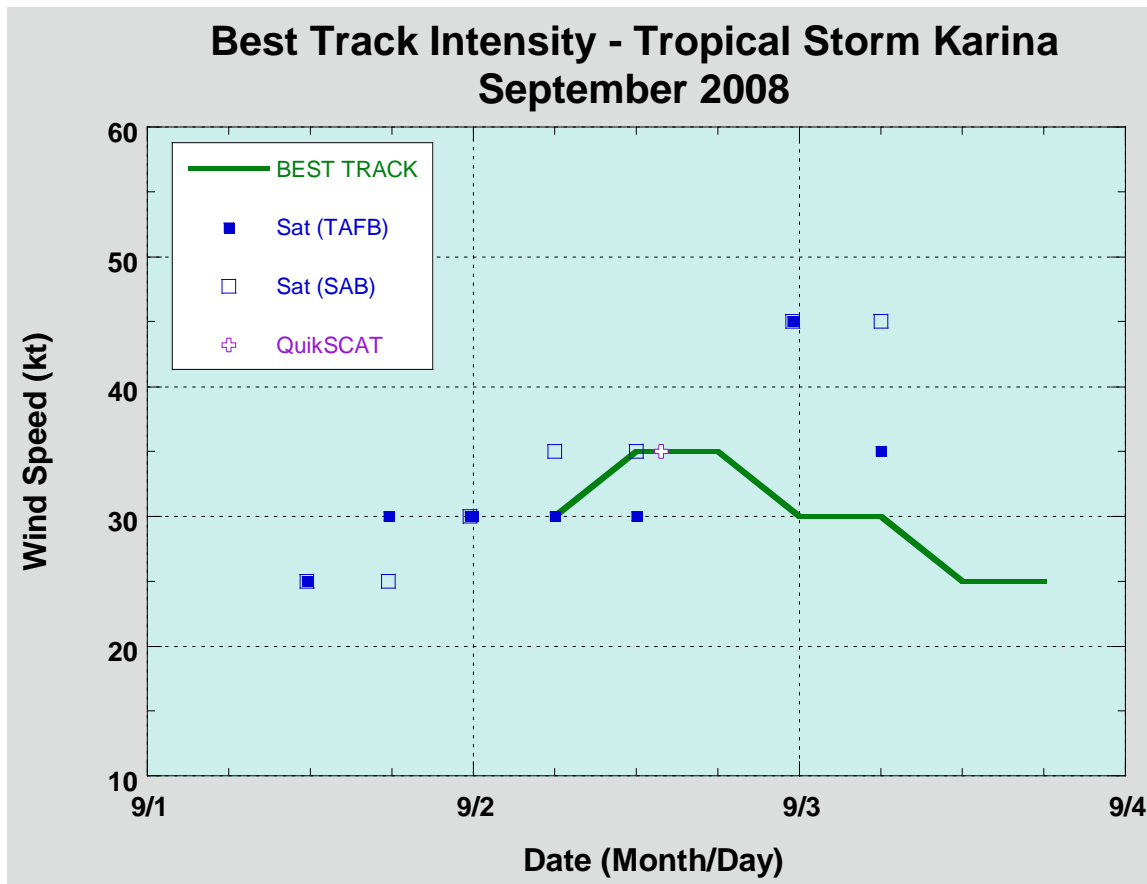


Figure 2. Selected wind observations and best track maximum sustained surface wind speed curve for Tropical Storm Karina, 2-3 September 2008 .

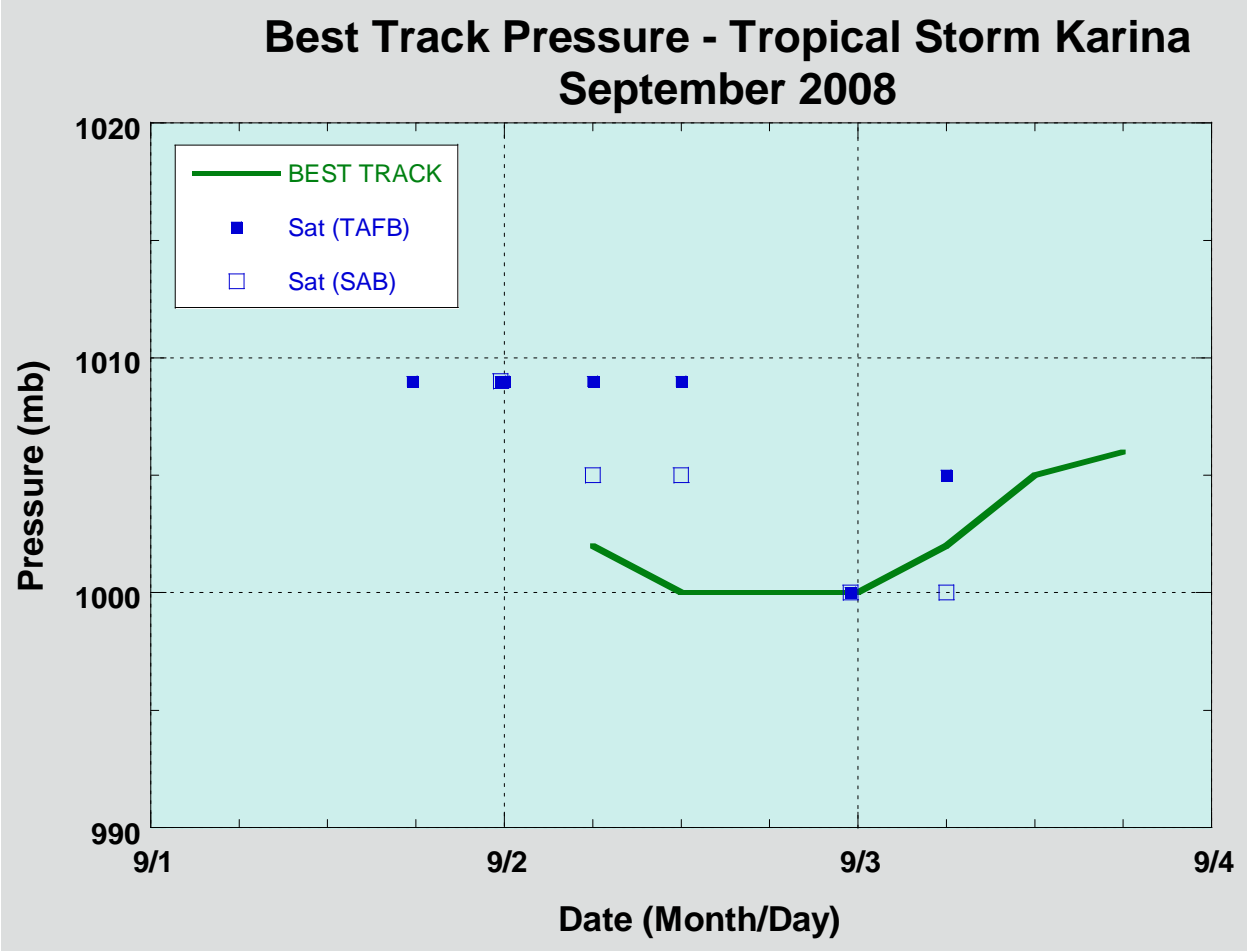


Figure 3. Selected pressure observations and best track minimum central pressure curve for Tropical Storm Karina, 2-3 September 2008.