

Tropical Cyclone Report
Hurricane Jimena
28 August-5 September 2003

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Jimena passed south of the Hawaiian Islands as a weakening tropical cyclone, and it had little impact on those islands.

a. Synoptic History

It is possible that Jimena originated from a tropical wave that crossed Central America and entered the eastern north Pacific in mid-August. This system was difficult to track as it moved westward, however, and it is not certain that the wave was related to an area of disturbed weather within the ITCZ near 125°W on 26 August. This area of disturbed weather drifted westward and became better organized, resulting in the system being classified as T1.0 on the Dvorak scale at 1800 UTC 27 August. Based on the low-level circulation inferred by the cloud pattern, as well as the persistence of deep convection, it is estimated that a tropical depression formed near 0600 UTC 28 August about 1500 n mi east of the Hawaiian Islands. 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 1.

The depression strengthened quickly into Tropical Storm Jimena, and, in an environment of favorable vertical shear and sufficiently warm ocean waters, the tropical cyclone intensified further. A small eye became evident, and Jimena attained hurricane status around 1200 UTC 29 August. With a deep-layer high pressure area to its north, Jimena moved on a generally west-northwestward track. A slight weakness in the ridge, to the northwest of the hurricane, gradually filled in. In response to the building ridge, Jimena turned toward the west with a slight increase in forward speed and entered the Central Pacific hurricane basin (140° W to 180°W) shortly after 0600 UTC 30 August. Meanwhile, the hurricane continued to strengthen, and it reached an estimated maximum intensity of 90 kt around 1800 UTC 30 August while centered about 700 n mi east of the Hawaiian Islands. Thereafter, Jimena gradually weakened, and its winds fell below hurricane strength on 1 September. Moving on a westward to west-southwestward track, the center of the weakening tropical cyclone passed about 105 n mi south of the southern tip of the island of Hawaii at 1500 UTC 1 September. Jimena continued on its westward to west-southwestward course, and continued to lose strength due to increased shear and, possibly, a more stable environmental air mass. It weakened to a tropical depression by 0000 UTC 3 September. The cyclone maintained winds of 25 to 30 kt for several more days as it moved generally westward. Jimena crossed the International Date Line on 5 September and dissipated shortly afterwards, about 1500 n mi west-southwest of the Hawaiian Islands.

b. Meteorological Statistics

Observations in Jimena (Figs. 2 and 3) include satellite-based Dvorak technique intensity estimates from the Tropical Analysis and Forecast Branch (TAFB), the Satellite Analysis Branch (SAB) and the U. S. Air Force Weather Agency (AFWA), as well as flight-level and dropwindsonde observations from flights of the 53rd Weather Reconnaissance Squadron of the U. S. Air Force Reserve Command (AFRES). The highest flight-level (700 mb) wind speed reported by AFRES was 71 kt at 2227 UTC 31 August, and the lowest pressure measured by AFRES was 990 mb at 1708 UTC 31 August.

The highest recorded wind gusts were 50 kt on the Hawaiian island of Kahoolawe and 46 kt at South Point on the island of Hawaii, Jimena produced rainfall amounts of 6 to 10 inches, with isolated higher amounts over windward sections of the island of Hawaii. Surf heights of 6 to 12 feet were reported along the southeast-facing shores of the Kau district, and up to 11 feet along the coast north of Hilo, on the island of Hawaii.

c. Casualty and Damage Statistics

There were no reports of casualties or significant property damage attributed to Jimena. No significant freshwater flood problems were reported in Hawaii.

d. Forecast and Warning Critique

The National Hurricane Center issued official forecasts for Jimena for only about two days, prior to the hurricane crossing into the Central Pacific Hurricane Center's (NHC's) area of responsibility. Therefore, there were too few cases to make up a significant sample for forecast verification. However, several of the NHC forecasts showed Jimena passing near the Hawaiian Islands as a stronger tropical cyclone than actually occurred.

Table 2 lists the watches and warnings associated with Jimena.

Table 1. Best track for Hurricane Jimena, 28 August-5 September 2003. Best track values from 140°W to 180°W are based on analyses from the Central Pacific Hurricane Center, and best track values west of 180°W are based on analyses from the Joint Typhoon Warning Center.

Date/Time (UTC)	Latitude (°N)	Longitude (°W)	Pressure (mb)	Wind Speed (kt)	Stage
28 / 0600	14.0	129.6	1008	30	tropical depression
28 / 1200	14.4	130.7	1005	35	tropical storm
28 / 1800	14.8	131.9	1002	40	"
29 / 0000	15.4	133.0	997	50	"
29 / 0600	16.1	134.1	994	55	"
29 / 1200	16.6	135.5	987	65	hurricane
29 / 1800	16.9	136.9	981	75	"
30 / 0000	17.2	138.3	973	85	"
30 / 0600	17.3	139.8	973	85	"
30 / 1200	17.3	141.3	972	85	"
30 / 1800	17.3	142.9	970	90	"
31 / 0000	17.6	144.4	976	90	"
31 / 0600	17.8	146.1	980	90	"
31 / 1200	18.0	147.8	984	85	"
31 / 1800	18.2	149.6	991	75	"
01 / 0000	18.1	151.3	1000	65	"
01 / 0600	17.8	153.0	1000	55	tropical storm
01 / 1200	17.4	154.5	1002	45	"
01 / 1800	17.0	156.1	1002	40	"
02 / 0000	16.5	157.6	1005	35	"
02 / 0600	16.1	159.0	1005	35	"
02 / 1200	15.6	160.4	1005	35	"
02 / 1800	15.3	161.9	1005	35	"

Date/Time (UTC)	Latitude (°N)	Longitude (°W)	Pressure (mb)	Wind Speed (kt)	Stage
03 / 0000	15.1	163.4	1009	30	tropical depression
03 / 0600	14.9	164.9	1009	30	"
03 / 1200	14.7	166.5	1009	25	"
03 / 1800	14.7	168.2	1009	25	"
04 / 0000	14.7	170.0	1009	25	"
04 / 0600	14.7	171.8	1009	30	"
04 / 1200	14.6	173.6	1009	30	"
04 / 1800	14.2	175.5	1010	30	"
05 / 0000	13.7	177.4	1009	30	"
05 / 0600	13.6	179.4	1009	30	"
05 / 1200	13.4	-179.2	1009	25	"
05 / 1800	13.2	-177.4	1009	25	"
06 / 0000					dissipated
30 / 1800	17.3	142.9	970	90	minimum pressure

Table 2. Watch and warning summary for Hurricane Jimena, 28 August-5 September 2003.

Date/Time (UTC)	Action	Location
31/0000	Hurricane Watch Issued	Island of Hawaii
31/0300	Tropical Storm Warning Issued	Island of Hawaii
1/1500	Hurricane Watch Discontinued	Island of Hawaii
1/2100	Tropical Storm Warning Discontinued	Island of Hawaii

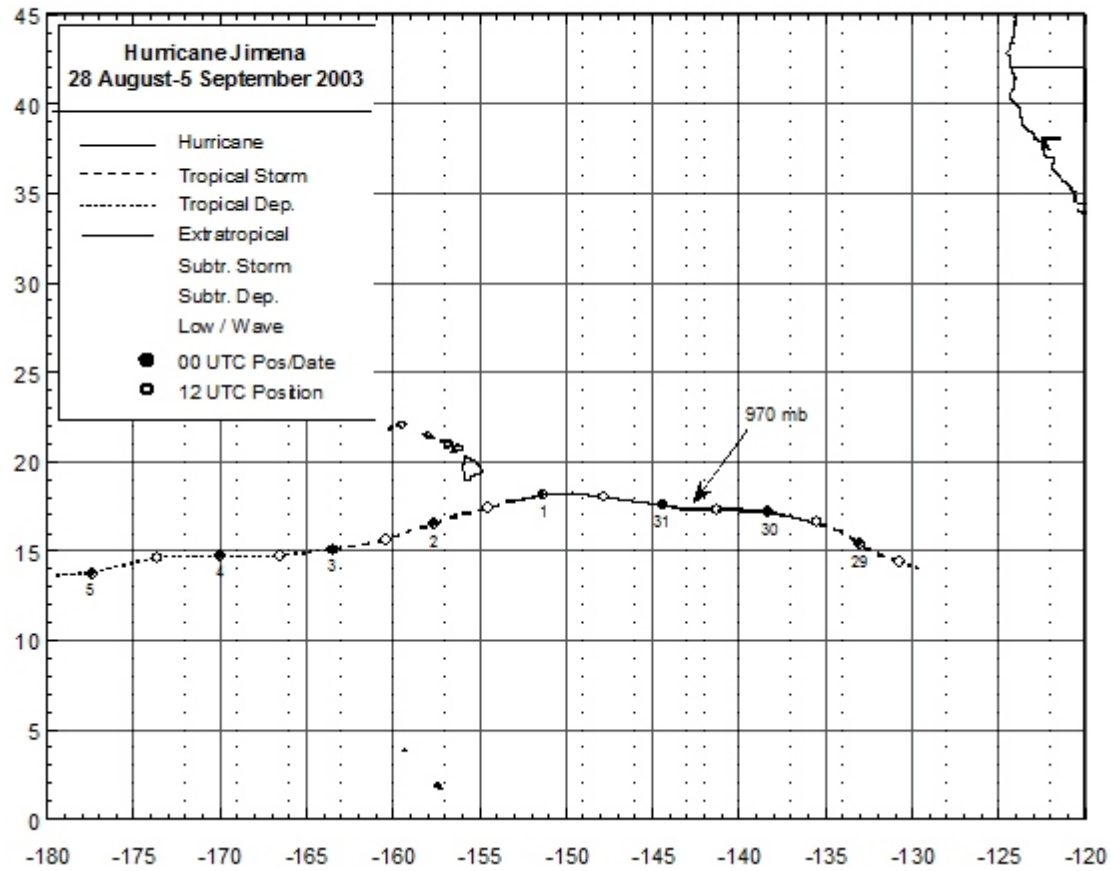


Figure 1. Best track positions for Hurricane Jimena, 28 August-5 September 2003. The portion of track from 140°W to 180°W is based on analyses from the Central Pacific Hurricane Center.

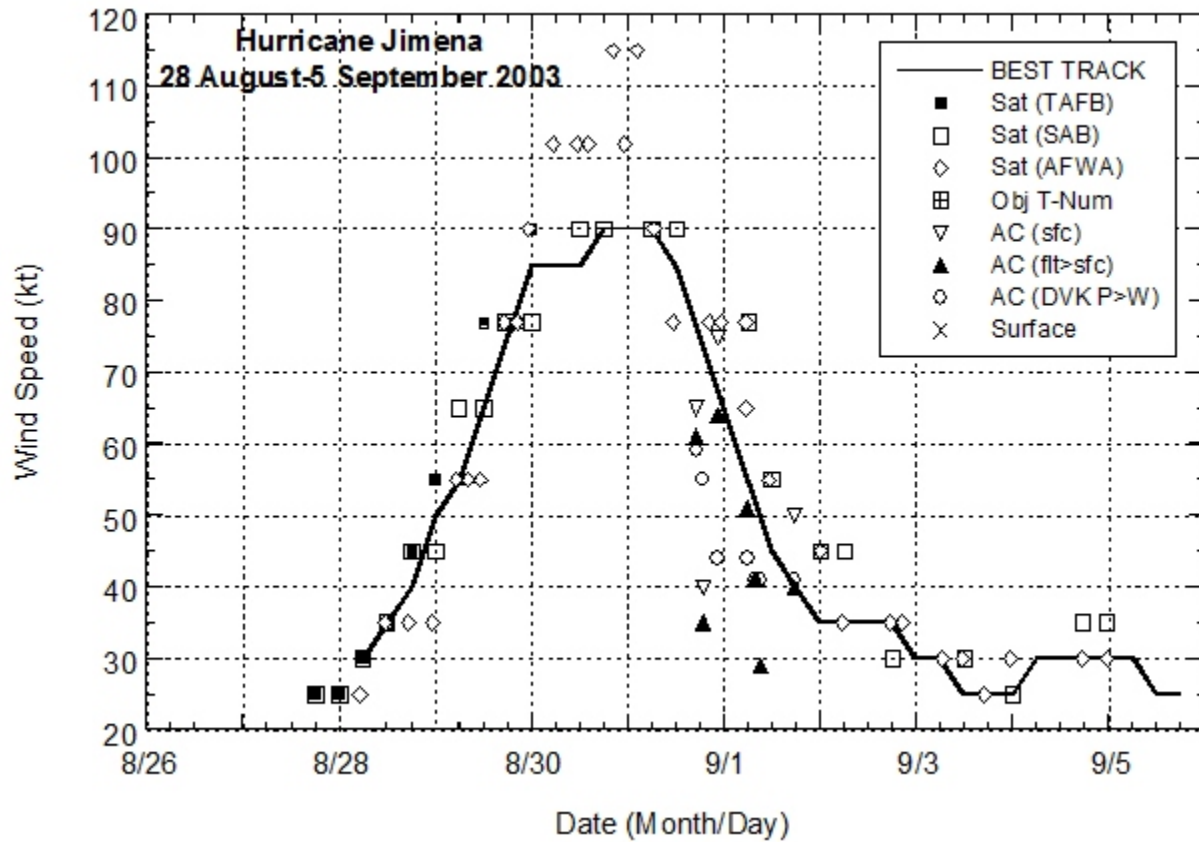


Figure 2. Selected wind observations and best track maximum sustained surface wind speed curve for Hurricane Jimena, 28 August-5 September 2003. Aircraft observations have been adjusted for elevation using 90%, 80%, and 80% reduction factors for observations from 700 mb, 850 mb, and 1500 ft, respectively. Best track wind speeds from 1200 UTC 30 August to 0600 UTC 5 September are based on analyses from the Central Pacific Hurricane Center, and best track wind speeds after 0600 UTC 5 September are based on analyses from the Joint Typhoon Warning Center.

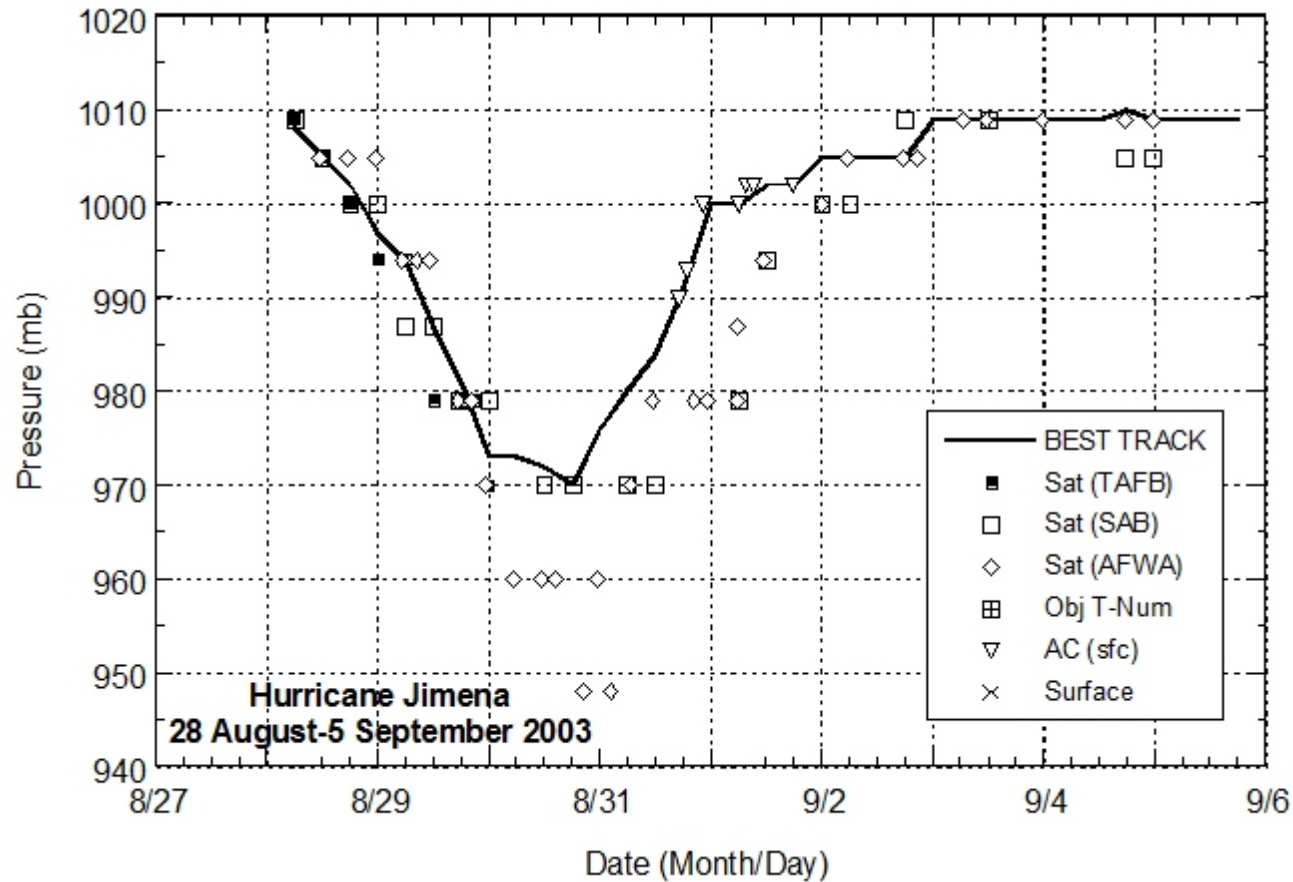


Figure 3. Selected pressure observations and best track minimum central pressure curve for Hurricane Jimena, 28 August-5 September 2003. Best track minimum pressures from 1200 UTC 30 August to 0600 UTC 5 September are based on analyses from the Central Pacific Hurricane Center, and best track minimum pressures after 0600 UTC 5 September are based on analyses from the Joint Typhoon Warning Center.