

## PRELIMINARY REPORT

Hurricane Jimena  
25-30 August 1997

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Hurricane Jimena was characterized not only by its exceptionally rapid intensification but also by its sudden and accelerated decay.

### a. Synoptic History

Jimena developed from a large area of disturbed weather centered in the vicinity of  $10^{\circ}\text{N}$   $130^{\circ}\text{W}$ , where the sea surface temperatures were 1.0 or 1.5 degrees above normal. This system was probably related to a tropical wave which moved slowly westward for several days across the eastern North Pacific. Initially, the disturbance was under an unfavorable upper-level westerly wind environment. The convection increased and an upper-level anticyclone gradually built over the system. A tropical depression formed near  $10.9^{\circ}\text{N}$   $133.1^{\circ}\text{W}$  at 1200 UTC 25 August. After becoming a tropical storm by 0000 UTC 26 August, Jimena intensified rapidly. It quickly developed an eye and the Dvorak T-numbers increased substantially. In fact, the estimated winds increased from 65 knots to 115 knots in about 12 to 15 hours. Jimena's winds were 115 knots for a couple of days and peaked at 120 knots at 1500 UTC 28 August. The objective T-numbers near that time were oscillating around 6.5 on the Dvorak scale. Jimena was moving on a north-northwesterly track when a strong upper-level trough moved by and sheared the hurricane. Jimena weakened as fast as it developed. Wind estimates decreased from 115 to 30 knots in about 24 hours.

The remaining low-level circulation center moved westward across  $140^{\circ}\text{W}$  and entered the Central Pacific Hurricane Center (CPHC) area of responsibility just after 1200 UTC on the 29th. It weakened further and was declared dissipated by 0000 UTC 30 August.

Jimena's track is shown in Fig. 1. Table 1 is a listing, at six-hourly intervals, of the best-track position, estimated minimum central pressure and maximum 1-minute surface wind speed.

### b. Meteorological Statistics

The best track pressure and wind curves as a function of time are shown in Figs. 2 and 3 and are based on satellite intensity estimates from the Tropical Analysis and Forecast Branch (TAFB),

the Satellite Analysis Branch (SAB) and the Air Force Global Weather Center (AFGWC). The estimated central pressure of Jimena dropped at a rate of 3.5 mb an hour during its rapid intensification phase from 0000 to 1200 UTC 27 August.

#### c. Casualty and Damage Statistics

There are no reports of casualties or damage associated with Jimena.

#### d. Forecast and Warning Critique

The average official forecast error (11 forecasts) at 24 hours was 101 n mi and reached 456 n mi at 72 hours (3 forecasts). These numbers are much larger than the long-term (1988-1995) average errors of 71 and 196 n mi, respectively.

None of the official forecasts captured either the rapid intensification nor the rapid decay.

#### Figure Captions:

- Fig. 1. Best track positions for Hurricane Jimena, 25 - 30 August 1997.
- Fig. 2. Best track one-minute surface wind speed curve for Hurricane Jimena.
- Fig. 3. Best track minimum central pressure curve for Hurricane Jimena

Table 1. Best track, Hurricane Jimena, 25- 30 August, 1997

Date/Time (UTC)	Position		Pressure (mb)	Wind Speed (kt)	Stage
	Lat. (°N)	Lon. (°W)			
25/1200	10.9	133.1	1009	25	tropical depression
1800	11.0	133.8	1009	30	"
26/0000	11.3	134.3	1005	35	tropical storm
0600	11.5	134.8	1001	40	"
1200	11.9	135.2	996	50	"
1800	12.1	135.5	990	55	"
27/0000	12.4	135.6	980	75	hurricane
0600	12.9	135.8	968	100	"
1200	13.6	135.9	948	115	"
1800	14.4	136.1	948	115	"
28/0000	15.1	136.3	948	115	"
0600	16.2	136.7	948	115	"
1200	17.4	137.1	948	115	"
1800	18.6	137.7	948	115	"
29/0000	19.6	138.2	960	100	"
0600	20.2	138.8	980	60	tropical storm
1200	20.5	139.7	999	35	"
1800*	20.6	140.5	1008	30	tropical depression
30/0000	20.5	141.2	1009	25	dissipating
28/1500	18.0	137.5	942	120	minimum pressure

\* Best track west of 140°W was provided by CPHC

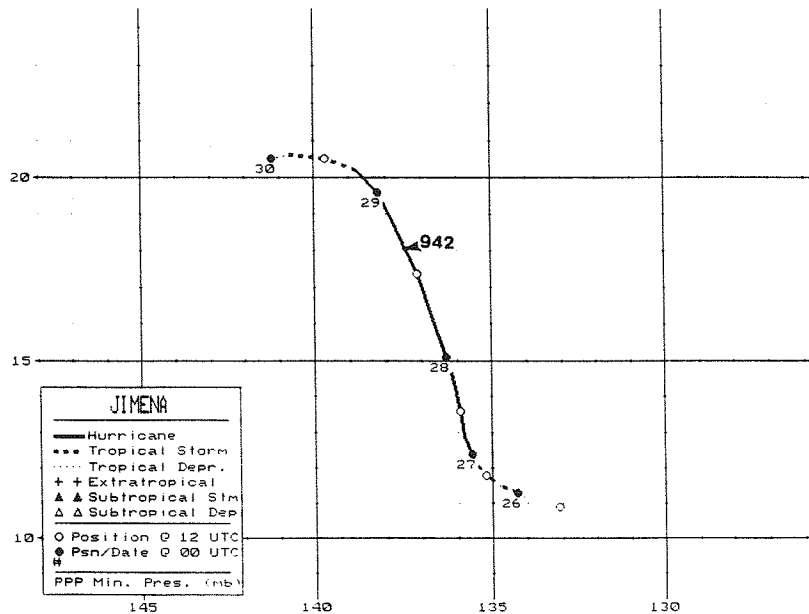


Fig. 1. Best track positions for Hurricane Jimena, 25 - 30 August 1997.

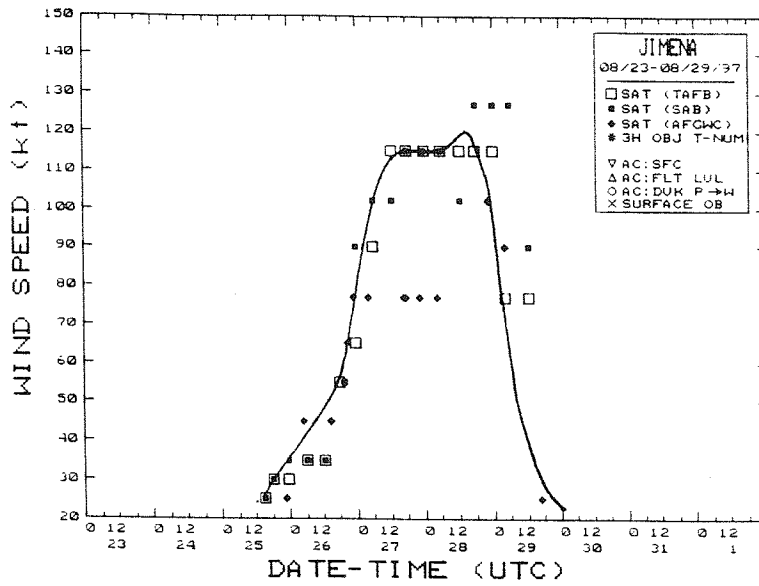


Fig. 2. Best track one-minute surface wind speed curve for Hurricane Jimena.

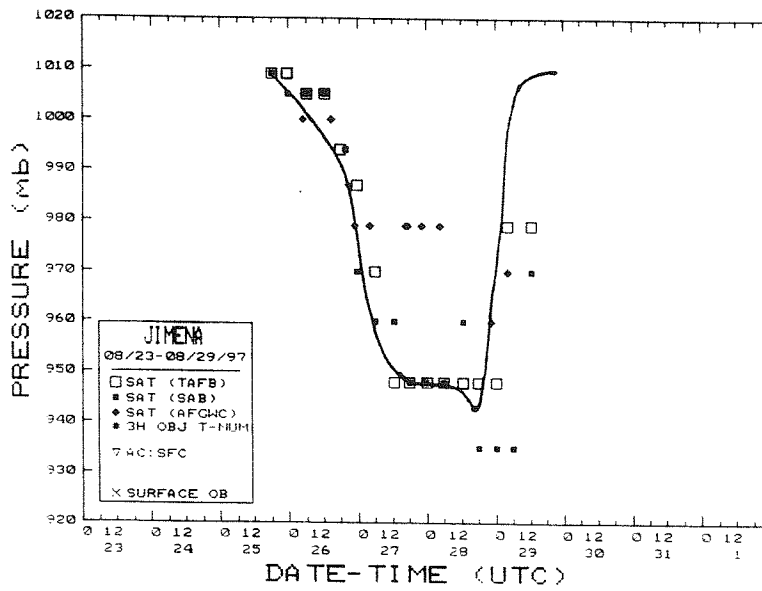


Fig. 3. Best track minimum central pressure curve for Hurricane Jimena