Preliminary Report
Tropical Storm Javier
6 - 14 September 1998

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a. Synoptic History

The formation of Tropical Storm Javier was likely associated with a tropical wave that emerged from the west coast of Africa on 22 August, and which gave rise on its northern part to the development of Atlantic Hurricane Danielle a few days later. The southern part of the wave remained relatively inactive and difficult to track during its westward passage across the Atlantic basin and Central America. Extrapolation of the wave's track places that feature in the vicinity of Acapulco on 3-4 September, and it is in that vicinity that deep convection then began to develop.

Javier appears to have been initiated during the passage of the wave through a broad area of low pressure and monsoon-like low-level cyclonic flow that occurs episodically to the immediate southwest of Mexico. The disturbance became better defined on satellite pictures by 5 September and the first Dvorak technique T-numbers for the system were assigned that day when the system was centered about 150 n mi off the coast. Surface pressures in the area were then as low as 1000-1005 mb. Although the disturbance was initially moving toward the northwest at about 10 kt, steering currents weakened and the system slowly meandered for the next 10 days in the area between Manzanillo, Socorro Island, and Cabo San Lucas (Fig. 1).

Deep convection became organized and persistent enough for Javier to be designated as a tropical depression on the 6th and a tropical storm the following day (Table 1 and Fig. 1). The storm formed in an environment of easterly to northeasterly vertical wind shear and this pattern likely limited development. Banding features never became especially prominent in Javier and the storm's maximum intensity, about 50 kt, is estimated to have coincided with a burst of thunderstorm activity over the cyclone center on the 8th (Figs. 2 and 3). That convective pattern was short-lived, however, and the low-level cloud center became mostly exposed from the diminshing deep convection early on the 9th. Although spots of deep convection occasionally reappeared, Javier is believed to have slowly weakened through the 11th. At times, it became difficult to distinguish it from the broader area of disturbed weather that persisted over the tropical eastern Pacific.

A brief resurgence of thunderstorms occurred near the circulation center on the 12th and observations from a nearby ship indicate that Javier briefly returned to tropical storm

strength, with maximum winds near 45 kt. Convection again became sporadic and the system had weakened back to a tropical depression when it drifted ashore about 30 n mi south-southeast of Cabo Corrientes on the 14th. It dissipated later that day over land.

b. Meteorological Statistics

Table 1 provides the post-storm analysis of "best track" location and intensity estimates for Javier. Figures 2 and 3 show the storm's estimated central pressure and maximum one-minute wind speed, respectively, versus time and the associated satellite and surface data. Data from an overpass of the ERS-2 near 0000 UTC on 10 September was also helpful in analyzing the cyclone. Position and intensity estimates from satellite pictures were provided by the Air Force Weather Agency (AFGWC in figures), NOAA Tropical Analysis and Forecast Branch (TAFB) and NOAA Satellite Analysis Branch (SAB).

There were no surface observations of tropical storm force winds received from land sites. The ship 3EMJ6 reported winds of 39 kt and 44 kt at 1900 and 2100 UTC, respectively, on the 12th, within about 25 n mi of the center.

An observation of 1000.6 mb and westerly winds of 27 knots at Socorro Island, 90 n mi from the center of the cyclone, were used operationally by the NHC to help establish when the system reached tropical storm strength.

c. Casualty and Damage Statistics

The NHC is not aware of damages or casualties incurred from Javier.

d. Forecast and Warning Critique

There were too few forecasts of the tropical storm stages to provide meaningful information at forecast periods up to 36 hours, and no such forecasts at 48 hours and 72 hours. Some track errors for 2-3 day forecasts of the tropical depression stages were rather large because the NHC and its model guidance did not predict well the eventual southeastward and then eastward motion seen in Fig. 1.

The NHC discontinued advisories for Javier late on 11 September, prior to the fleeting flare-up of convection and accompanying ship report of tropical storm force winds about a day later. Table 1 provides an extension of the best track based on that information and subsequent analyses.

While watches and warnings were neither issued nor necessary for this cyclone, public advisories issued by the NHC did contain cautionary statements for small craft along coastal areas of Mexico adjacent to the storm.

Table 1. Preliminary best track, Tropical Storm Javier, 6 - 14 September 1998.

Date/Time (UTC)	Latitude (°N)	Longitude (°W)	Pressure (mb)	Wind Speed (kt)	Stage
6/1200	17.8	106.8	1001	25	Tropical Depression
1800	18.3	107.5	1001	25	" "
7/0000	18.8	108.3	1001	25	" "
0600	19.2	109.1	1000	30	" "
1200	19.6	109.7	999	30	" "
1800	20.2	110.5	998	35	Tropical Storm
8/0000	20.5	111.6	998	35	" "
0600	20.6	111.9	997	40	" "
1200	20.8	112.2	995	50	" "
1800	20.8	111.9	997	40	" "
9/0000	20.8	111.5	998	35	" "
0600	20.5	111.5	998	35	" "
1200	20.8	111.5	999	35	" "
1800	20.9	111.7	999	30	Tropical Depression
10/0000	21.1	111.0	1000	30	" "
0600	21.0	110.8	1000	25	" "
1200	20.8	110.6	1000	25	" "
1800	20.6	110.3	1000	25	" "
11/0000	20.3	110.1	1000	25	" "
0600	20.1	109.8	1000	25	" "
1200	19.8	109.6	1000	25	" "
1800	19.2	109.2	1001	25	" "
12/0000	18.6	108.7	1001	25	" "
0600	18.2	108.2	1000	30	" "
1200	17.9	107.6	999	35	Tropical Storm
1800	18.0	106.9	997	45	" "
13/0000	18.4	106.4	999	40	" "
0600	18.8	106.1	1000	35	" "
1200	19.3	105.8	1000	35	" "
1800	19.8	105.6	1001	30	Tropical Depression
14/0000	20.0	105.5	1001	30	" "
0600	20.2	105.3	1002	30	" "
1200	20.5	105.2	1002	30	" "
1800					Dissipated
14/0000	20.0	105.5	1001	30	Landfall 30 n mi SSE of Cabo Corrientes
8/1200	20.8	112.2	995	50	Minimum Pressure

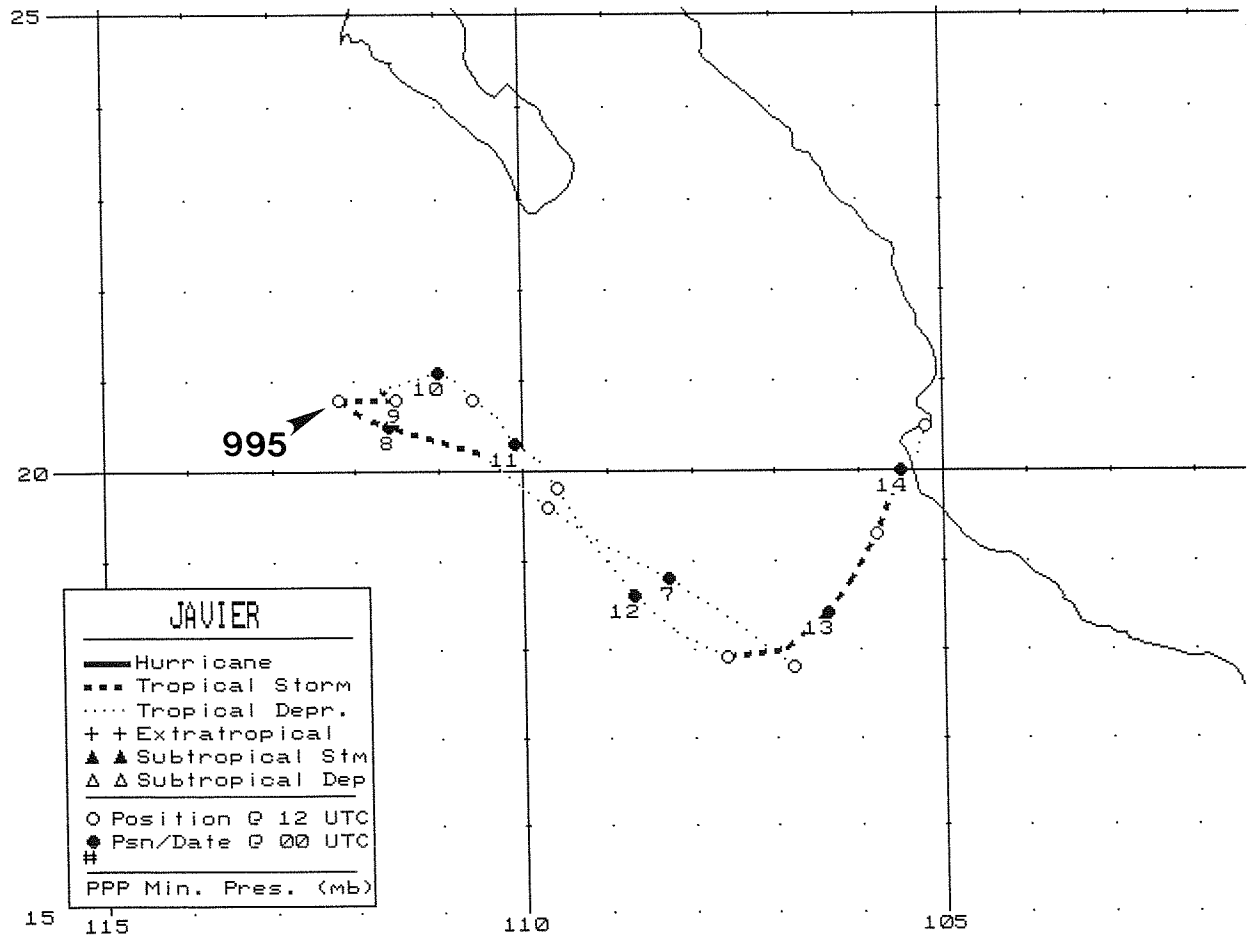

Figure 1. Best track of Tropical Storm Javier, September 1998.

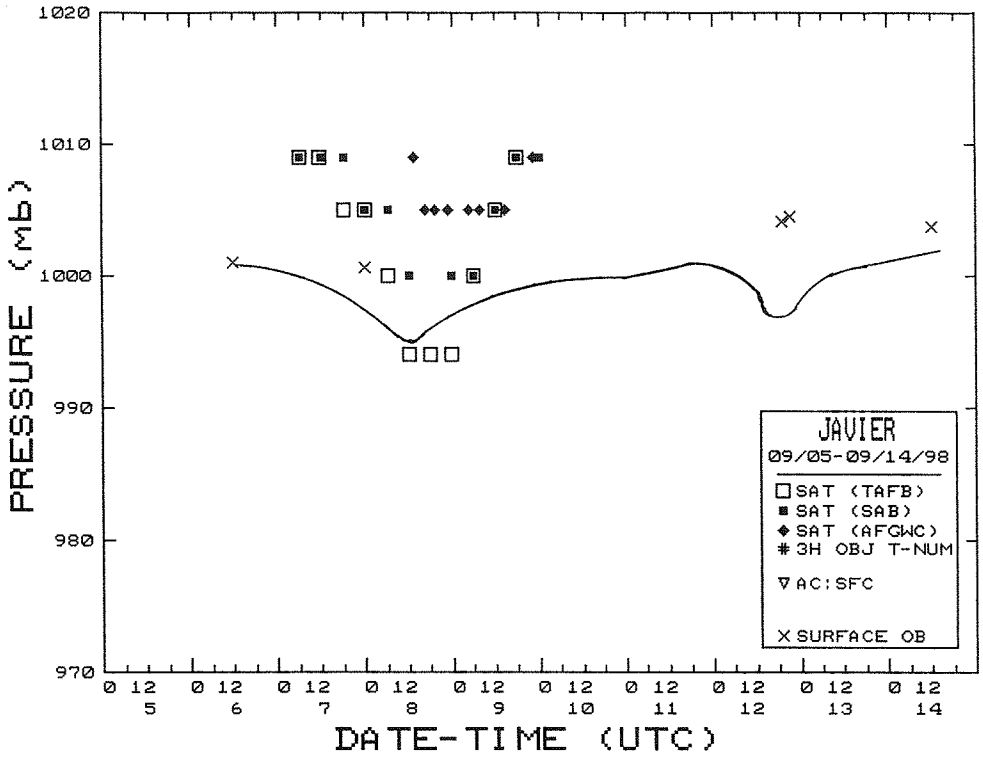

Figure 2. Best track central pressure curve for Tropical Storm Javier, 6-14 September 1998.

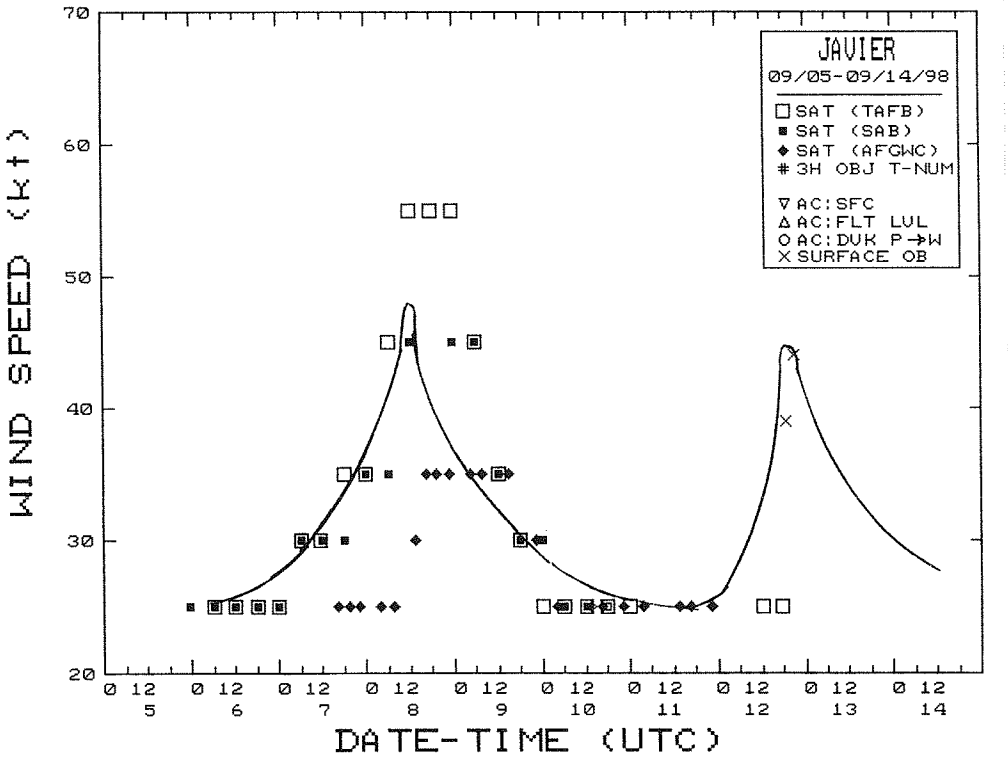

Figure 3. As in Fig. 2, except for maximum wind speed.