

Preliminary Report  
Tropical Storm Carlos  
25 - 28 June 1997

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a. Synoptic History

Satellite imagery showed an increase in cloudiness and thunderstorms over a broad area located several hundred miles off the southwest coast of Mexico on 22 June. This disturbance may have originated from a tropical wave that moved from Africa to the eastern Atlantic Ocean on June 8. However, the wave was very poorly defined on satellite imagery for several days while it passed over the Caribbean and Central America, and only continuity can be used to track the wave into the eastern Pacific.

Intermittent Dvorak classifications were made on the disturbance on 23 and 24 June. Deep convection became more concentrated and the "best track" indicates that a tropical depression formed from the disturbance near 0600 UTC 25 June, while centered about 450 n mi south-southeast of the southern tip of Baja California (Fig. 1 and Table 1). The developing cyclone moved toward the northwest near 10 knots.

The tropical depression strengthened into Tropical Storm Carlos by 1800 UTC 25 June as upper-level outflow became better established and convective banding increased. A minimum central pressure of 996 mb and maximum winds of 45 knots are estimated to have occurred near 0600 UTC 26 June. At this time, the cyclone was centered about 40 n mi south-southwest of Socorro Island.

Convective activity soon diminished as Carlos moved over cooler water. Upper-level shear increased and by 27 June the low-level center was exposed from the convection. The movement of the tropical cyclone had become more westerly by this time in response to the low-level steering. Carlos weakened to a tropical depression near 0600 UTC 27 June when only minimal deep convection remained. The best track indicates dissipation by 0600 UTC 28 June about 500 n mi west-southwest of the southern tip of Baja California, although a weak swirl in the low clouds persisted for another day or so.

b. Meteorological Statistics

Figures 2 and 3 show best track curves of minimum central pressure and maximum one-minute surface wind speed, respectively, as a function of time. The observations on which the curves are based are also plotted and consist primarily of Dvorak-technique estimates using satellite imagery. The lowest surface pressure reported from Socorro Island was 1001.1 mb at 0700 UTC 26 July, at which time maximum sustained winds were measured at 35 knots with gusts to 53 knots.

c. Casualty and Damage Statistics

No reports of casualties or damage associated with Carlos have been received at the NHC.

d. Forecast and Warning Critique

Official forecasts correctly indicated the general west-northwestward track as well as the intensification into a minimal tropical storm followed by weakening back into a tropical depression. However, no meaningful verifications can be made since Carlos was categorized as a tropical storm for only a little longer than a day.

With the exception of Socorro Island, the tropical storm did not threaten land. The Government of Mexico did not post watches or warnings.

Table 1. Best track, Tropical Storm Carlos, 25 - 28 June, 1997.

Date/Time (UTC)	Position		Pressure (mb)	Wind Speed (kt)	Stage
	Lat. (°N)	Lon. (°W)			
25/0600	15.6	107.8	1006	25	Tropical Depression
1200	16.3	108.5	1004	30	"
1800	17.0	109.3	1002	35	Tropical Storm
26/0000	17.6	110.2	999	40	"
0600	18.2	111.1	996	45	"
1200	18.5	112.1	999	45	"
1800	18.8	113.1	1001	40	"
27/0000	19.0	114.2	1003	35	"
0600	19.2	115.2	1005	30	Tropical Depression
1200	19.4	116.2	1007	30	"
1800	19.5	117.1	1008	30	"
28/0000	19.5	118.0	1009	25	"
0600					Dissipated
26/0600	18.2	111.1	996	45	minimum pressure

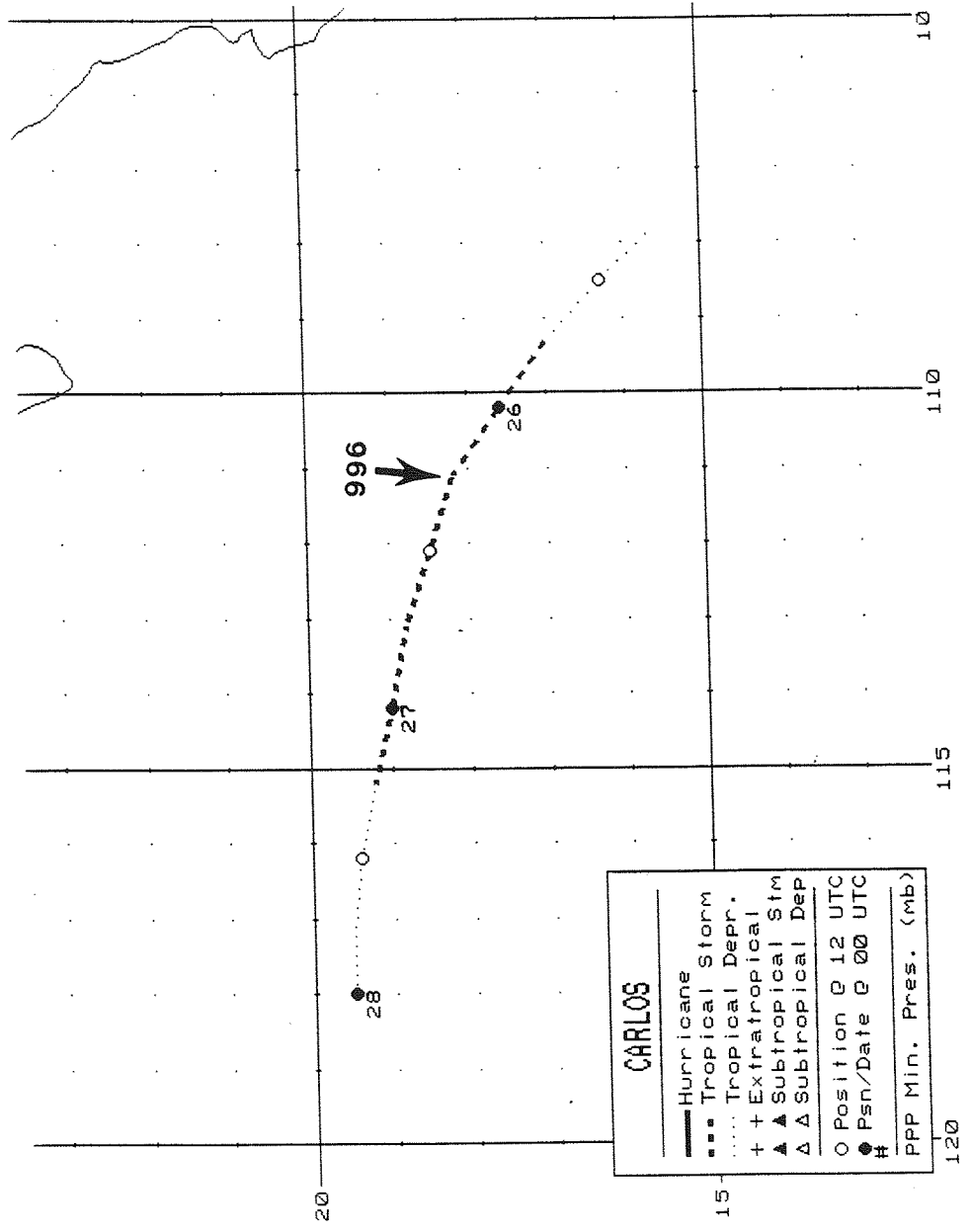


Figure 1. Best track positions for Tropical Storm Carlos, 25 - 28 June 1997.

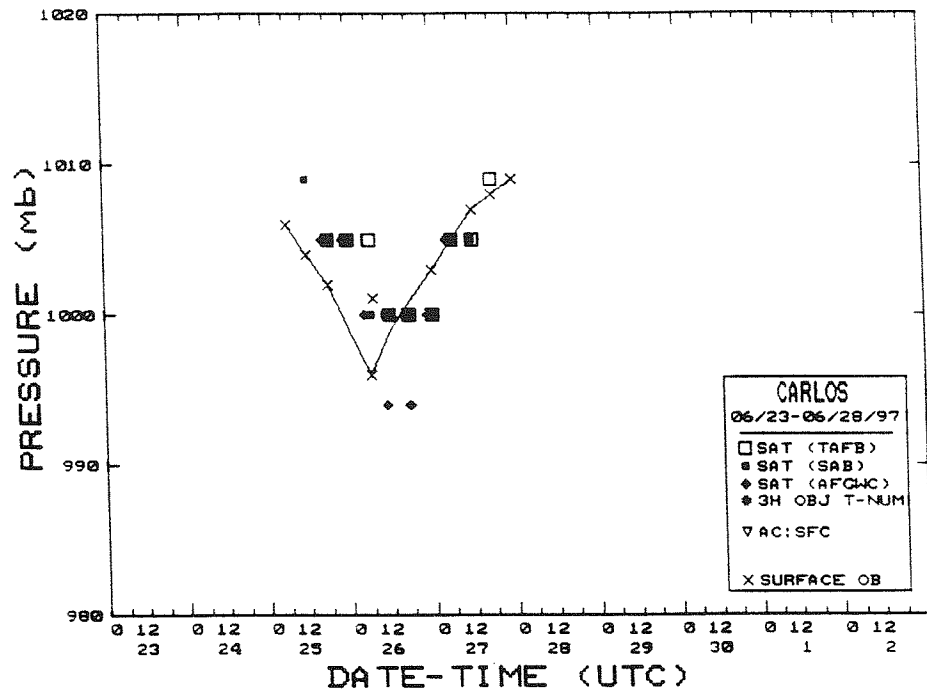


Figure 2. Best track minimum central pressure curve for Tropical Storm Carlos. X's indicate estimates from surface analyses.

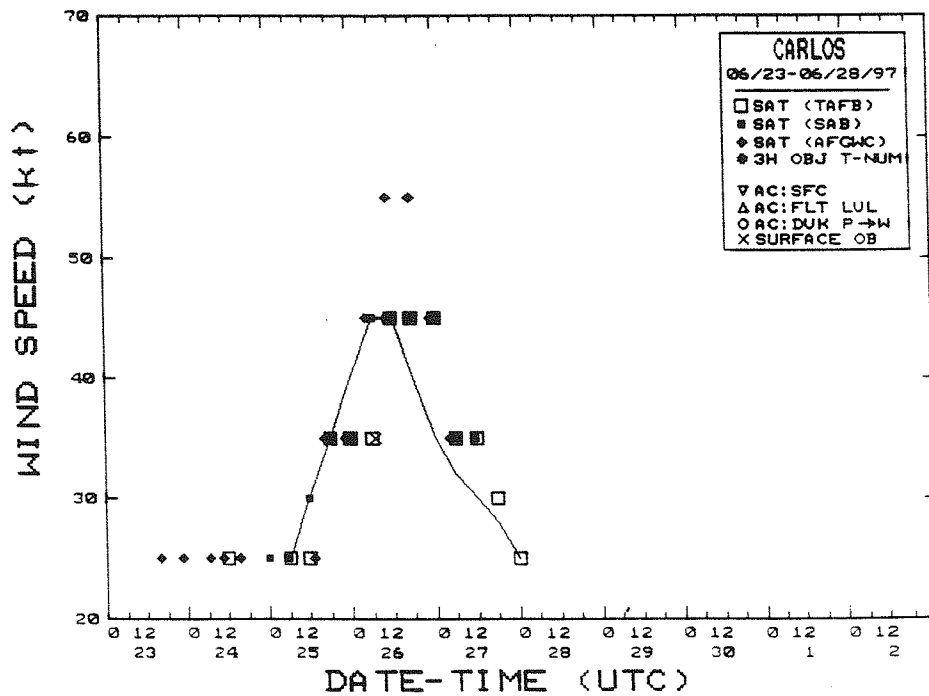


Figure 3. Best track maximum sustained wind speed curve for Tropical Storm Carlos.