

Preliminary Report
Tropical Storm Marty
12 - 16 September 1997

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a. Synoptic History

Marty's origins could be associated with two westward-traveling tropical waves, one which crossed Central America around the end of August, and another which entered the eastern Pacific about three days later. These two waves appeared to contribute to an area of disturbed weather which was located in the vicinity of 129°W early on 10 September. Meteorologists at the Tropical Prediction Center's Tropical Analysis and Forecast Branch (TAFB) began to locate and "classify" the disturbance on that date. Deep convection associated with the system increased in a "bursting"-type event on the 11th, but there was no significant increase in organization until the following day, when curved cloud bands became readily apparent. The system is estimated to have become Tropical Depression Fifteen-E at 1800 UTC 12 September, at which time Dvorak T-numbers were up to T2.0 from both TAFB and the Synoptic Analysis Branch (SAB). The depression was centered about 1300 n mi east-southeast of the island of Hawaii at that time. Figure 1 shows the best track and Table 1 lists the positions and intensities every six hours.

Steering currents in the vicinity of this tropical cyclone remained fairly weak, and the system never moved faster than 5 or 6 knots throughout its lifetime. The depression moved a little south of due westward on the 12th and 13th, and, after strengthening into Tropical Storm Marty around 0000 UTC on the 14th, it turned southwestward and then southward. Marty's forward speed slowed to a crawl on the 15th, and it weakened back to a depression that day. The weakening was apparently caused by vertical shear due to upper-level southeasterly flow over the area, with the low-cloud center becoming clearly exposed. Strong shearing continued, weakening the slow-moving Marty to dissipation around 1800 UTC 16 September.

b. Meteorological Statistics

Figures 2 and 3 depict the curves of minimum central sea-level pressure and maximum one-minute average "surface" (10 meters above ground level) wind speed, respectively, as a function of time for Tropical Storm Marty. Also plotted are the observations on which the curves are based, consisting of Dvorak-technique estimates (from the TAFB, the SAB, and the U.S. Air Force Global Weather Center [AFGWC]) using geostationary and polar-orbiting satellite imagery.

Table 1. Best track, Tropical Storm Marty, 12 -16 September, 1997

Date/Time (UTC)	Position		Pressure (mb)	Wind Speed (kt)	Stage
	Lat. (°N)	Lon. (°W)			
12/1800	14.3	133.1	1006	25	tropical depression
13/0000	14.2	133.5	1006	30	“
0600	14.1	133.9	1006	30	“
1200	14.0	134.4	1006	30	“
1800	13.9	134.9	1005	30	“
14/0000	13.9	135.5	1004	35	tropical storm
0600	13.6	135.6	1003	40	“
1200	13.3	135.8	1002	40	“
1800	12.9	135.9	1003	40	“
15/0000	12.4	136.0	1004	35	“
0600	12.0	136.1	1005	35	“
1200	11.9	136.2	1006	30	tropical depression
1800	11.8	136.3	1006	30	“
16/0000	11.8	136.4	1006	25	“
0600	11.7	136.6	1006	25	“
1200	11.6	136.9	1006	25	“
16/1800					dissipated

14/1200	13.3	135.8	1002	40	minimum pressure
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