

Tropical Cyclone Report  
Tropical Storm Enrique  
10-13 July 2003

Stacy R. Stewart  
National Hurricane Center  
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Tropical Storm Enrique was a short-lived, west-northwestward-moving tropical cyclone that remained over the open northeast Pacific Ocean.

a. Synoptic History

Enrique formed from a tropical wave that moved off the coast of Africa on 25 June. The wave moved quickly westward across the tropical Atlantic and remained devoid of any significant shower activity until it reached northern South America on 4 July. The wave continued moving westward and emerged over the northeastern Pacific Ocean on 6 July. By that time, the disturbance was accompanied by a surface low pressure system. Thunderstorm activity became organized enough for satellite classifications to be initiated on 9 July. The disturbance continued to develop and satellite intensity estimates indicated that Tropical Depression Five-E had formed at 1200 UTC 10 July about 565 n mi south-southeast of the southern tip of Baja California. The depression gradually became better organized and it is estimated that it became Tropical Storm Enrique at 1200 UTC 11 July. Enrique moved west-northwestward for the next 2 days and it is estimated that it reached its peak intensity of 55 kt early on 12 July about 470 n mi south-southwest of Baja California.

Since Enrique had developed at an unusually high latitude, the cyclone was close to the cooler sea-surface temperatures that typically lie just offshore the west coast of the Baja Peninsula. Late on 12 July, Enrique encountered those cooler waters and began to weaken despite the otherwise favorable low vertical wind shear that existed across the tropical storm. Rapid weakening began early on 13 July and Enrique became a tropical depression again at 1200 UTC. The cyclone then turned westward and quickly degenerated into a non-convective low pressure system by 0000 UTC 14 July. The low pressure system remained devoid of any thunderstorms and continued moving westward over colder water until it dissipated early on 16 July about 1200 miles west-southwest of Baja California.

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.

b. Meteorological Statistics

Observations in Enrique (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).

There were two ship reports of winds of tropical storm force associated with Enrique. Ship **9VIG** reported 37-kt winds at 1800 UTC 10 July and 0000 UTC 11 July 2003. However, quality

control analyses performed by the Ocean Prediction Center, Washington, D.C. indicated that these winds speeds were probably at least 7 kt too high.

c. Casualty and Damage Statistics

There were no reports of damages or casualties associated with Enrique.

d. Forecast and Warning Critique

Enrique was a tropical cyclone for only 78 h, resulting in a relatively small number of forecasts to verify. Average official track errors (with the number of cases in parentheses) for Enrique were 47 (12), 88 (10), 114 (8), 120 (6), 144 (2) n mi for the 12, 24, 36, 48, 72 h forecasts, respectively<sup>1</sup>. These errors are comparable to the average official track errors for the 10-yr period 1993-2002 [39, 72, 103, 131, 186, n mi, respectively, (Table 4)].

Average official intensity errors were 1, 4, 7, 10, and 10 kt for the 12, 24, 36, 48, and 72 h forecasts, respectively. For comparison, the average official intensity errors over the 10-yr period 1993-2002 are 6, 11, 15, 17, and 20 kt, respectively.

No watches or warnings were associated with Enrique.

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<sup>1</sup> All forecast verifications in this report include the depression stage of the cyclone. National Hurricane Center verifications presented in these reports prior to 2003 did not include the depression stage.

Table 1. Best track data for Tropical Storm Enrique, 10-13 July 2003.

Date/Time (UTC)	Latitude (°N)	Longitude (°W)	Pressure (mb)	Wind Speed (kt)	Stage
10 / 1200	14.1	106.3	1005	25	tropical depression
10 / 1800	14.6	107.5	1005	30	"
11 / 0000	14.6	108.7	1005	30	"
11 / 0600	14.6	109.5	1005	30	"
11 / 1200	14.7	110.4	1000	40	tropical storm
11 / 1800	14.9	111.2	999	45	"
12 / 0000	15.3	112.1	994	55	"
12 / 0600	16.2	113.3	993	55	"
12 / 1200	17.2	114.3	994	55	"
12 / 1800	18.0	115.6	994	55	"
13 / 0000	18.9	117.1	997	50	"
13 / 0600	19.3	118.7	999	45	"
13 / 1200	19.7	119.7	1002	35	"
13 / 1800	20.0	121.2	1005	30	tropical depression
14 / 0000	20.0	122.5	1006	25	remnant low
14 / 0600	19.9	123.9	1006	25	"
14 / 1200	19.7	125.1	1007	25	"
14 / 1800	19.2	126.2	1008	20	"
15 / 0000	18.9	126.9	1008	20	"
15 / 0600	18.7	127.8	1009	20	"
15 / 1200	18.6	128.8	1009	20	"
15 / 1800	18.6	129.8	1009	20	"
16 / 0000	18.6	130.6	1009	20	"
16 / 0600					dissipated
12 / 0600	16.2	113.3	993	55	minimum pressure

Table 4. Preliminary forecast evaluation (heterogeneous sample) for Tropical Storm Enrique, 10-13 July 2003. Forecast errors (n mi) are followed by the number of forecasts in parentheses. Errors smaller than the NHC official forecast are shown in bold-face type. Verification includes the depression stage, but does not include the extratropical stage, if any.

Forecast Technique	Forecast Period (h)						
	12	24	36	48	72	96	120
CLP5	49 (11)	105 (9)	138 (8)	126 (6)	105 (2)		
GFNI	50 (7)	90 (5)	106 (3)	32 (1)			
GFDI	33 (10)	68 (8)	88 (8)	115 (6)			
GFDL	34 (9)	70 (7)	104 (6)	105 (5)	101 (1)		
LBAR	44 (9)	96 (7)	134 (7)	169 (6)	274 (2)		
AVNI	50 (8)	108 (6)	128 (6)	163 (4)			
AVNO	49 (10)	88 (8)	142 (6)	165 (5)	284 (1)		
AEMI	46 (4)	101 (3)	98 (3)	99 (2)			
BAMD	46 (9)	77 (7)	88 (7)	69 (6)	86 (2)		
BAMM	50 (9)	97 (7)	121 (7)	138 (6)	140 (2)		
BAMS	54 (9)	115 (7)	151 (7)	202 (6)	249 (2)		
NGPI	52 (11)	98 (9)	148 (7)	157 (5)	270 (2)		
NGPS	44 (10)	72 (8)	88 (6)	111 (4)			
UKMI	58 (9)	93 (7)	98 (5)	94 (3)			
UKM	72 (6)	125 (4)	135 (3)	97 (2)			
GUNS	33 (7)	72 (5)	89 (5)	68 (3)			
GUNA	34 (7)	75 (5)	91 (5)	84 (3)			
OFCL	47(12)	88 (10)	114 (8)	120 (6)	144 (2)		
NHC Official (1993-2002 mean)	39 (2864)	72 (2595)	103 (2314)	131 (2050)	186 (1603)	197 (210)	223 (143)

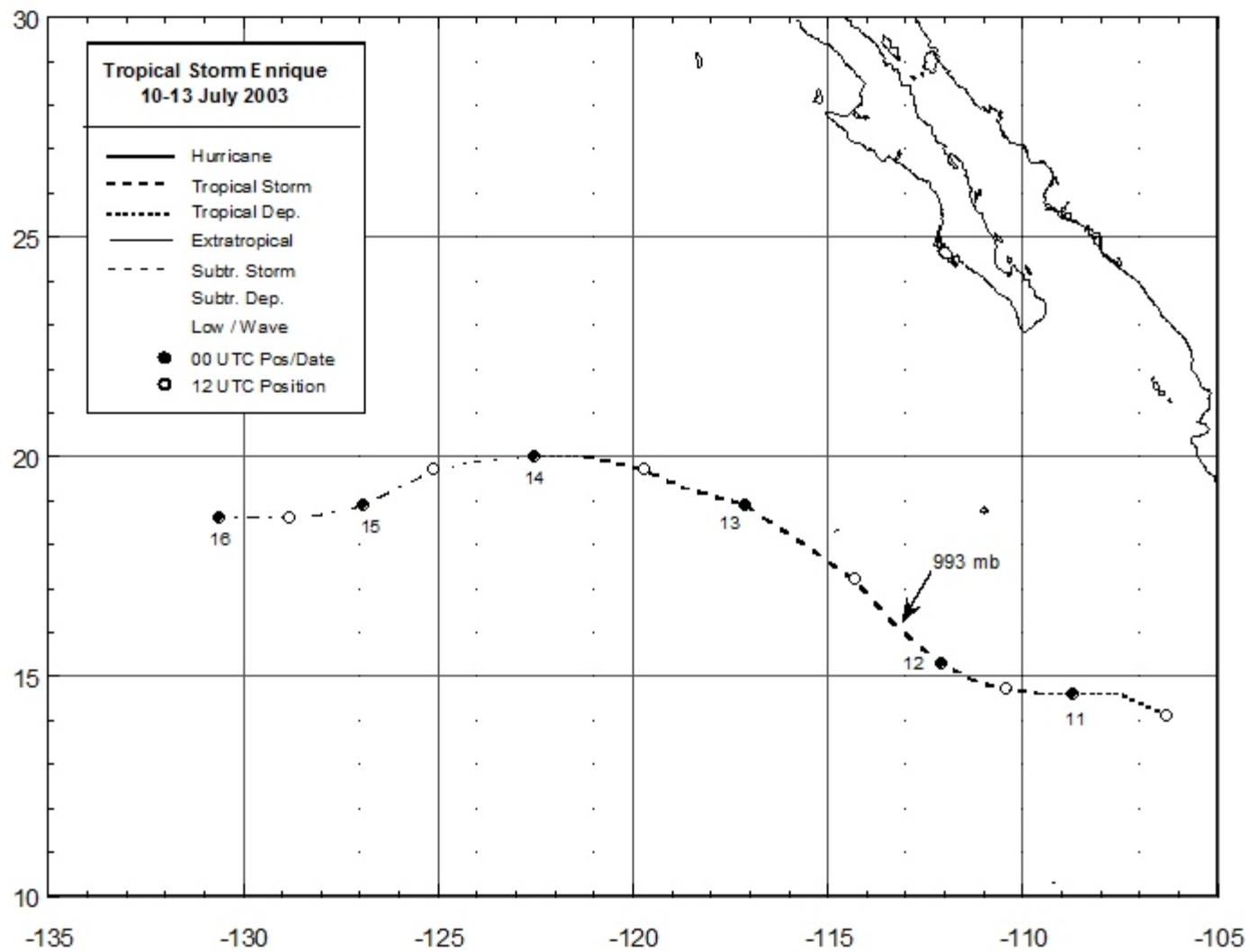


Figure 1. Best track positions for Tropical Storm Enrique, 10-13 July 2003. Track positions during the remnant low stage are based on analyses from the Tropical Prediction Center's Tropical Analysis and Forecast Branch.



