

Tropical Cyclone Report
Tropical Storm Genevieve
26 August 1 September 2002

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Tropical Storm Genevieve formed south of Baja California and soon moved over cool waters.

a. Synoptic History

A tropical wave crossed Dakar, Senegal on 13 August. The wave was accompanied by a large area of thunderstorms with a well-defined low-level cyclonic wind-shift and a column of high moisture that extended from the surface to near 400 mb. As the wave moved westward, it lost most of its associated convection, and it was not until the system was south of Hispaniola on the 19th that the thunderstorm activity partially regenerated. Thereafter, the wave continued westward with a gradual increase in organization and crossed Central America where developed a distinct mid-level circulation. A tropical depression formed at 0000 UTC 26 August about 500 n mi south of the southern tip of Baja California and became a tropical storm 24 hours later. Genevieve was near hurricane strength with maximum winds of 60 knots and a minimum pressure of 989 mb at 0000 UTC 28 August when it turned to the northwest toward cooler waters and convection began to weaken. It was dissipating about 960 n mi west-northwest of the southern tip of Baja California at 0600 UTC 1 September. A swirl of low clouds associated with Genevieve's remnants persisted for a couple of days.

The "best track" chart of Genevieve'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 Genevieve (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). Infrared satellite estimates from TAFB and SAB indicated that Genevieve was a hurricane by 1200 UTC 28 August. However, visible satellite images a couple of hours later showed a disrupted cloud pattern indicating that the T-numbers were overestimated and Genevieve was not a hurricane.

c. Casualty and Damage Statistics

There were no reports of damage or casualties associated with Genevieve.

d. Forecast and Warning Critique

Average official track errors (with the number of cases in parentheses) for Genevieve were 36 (12), 63(10), 74 (8), 85 (6), and 142(2) n mi for the 12, 24, 36, 48, and 72 h forecasts, respectively. With the exception of the 12 and 24 hour periods, these errors are much lower than the average official track errors for the 10-yr period 1992-2001 of 36, 67, 97, 125, and 182 n mi, respectively). However, several of the numerical track guidance produced even lower errors than the official forecast at all times as indicated in Table 2.

Average official intensity errors were 7, 15, 17, 22, and 30 kt for the 12, 24, 36, 48, and 72 h forecasts, respectively. For comparison, the average official intensity errors over the 10-yr period 1992-2001 are 7, 12, 16, 18, and 21 kt, respectively.

Table 1. Best track for Genevieve, 26 August- 1 September, 2002.

Date/Time (UTC)	Latitude (°N)	Longitude (°W)	Pressure (mb)	Wind Speed (kt)	Stage
26 / 0000	14.7	110.4	1007	30	tropical depression
26 / 0600	14.5	111.2	1008	30	"
26 / 1200	14.4	112.0	1007	30	"
26 / 1800	14.2	112.7	1006	30	"
27 / 0000	14.0	113.2	1005	35	tropical storm
27 / 0600	13.9	113.7	1002	40	"
27 / 1200	13.9	114.3	994	50	"
27 / 1800	14.1	114.9	990	60	"
28 / 0000	14.6	115.5	989	60	"
28 / 0600	15.2	116.1	989	60	"
28 / 1200	15.9	116.9	989	60	"
28 / 1800	16.4	117.9	989	60	"
29 / 0000	16.9	118.9	992	60	"
29 / 0600	17.5	119.6	994	55	"
29 / 1200	18.0	120.1	1002	45	"
29 / 1800	18.5	120.8	1002	40	"
30 / 0000	19.1	121.5	1005	35	"
30 / 0600	19.6	122.1	1005	35	"
30 / 1200	20.2	122.7	1007	30	tropical depression
30 / 1800	20.8	123.4	1007	30	"
31 / 0000	21.4	124.1	1009	25	"
31 / 0600	22.3	124.9	1009	25	"
31 / 1200	23.3	125.1	1009	25	"
31 / 1800	24.1	125.6	1008	25	"
01 / 0000	24.5	126.5	1009	20	"
01 / 0600	24.9	127.0	1009	20	dissipating
28 / 0000	14.6	115.5	989	60	minimum pressure

Table 2. Preliminary forecast evaluation (heterogeneous sample) for Genevieve, 26 August 1 September, 2002. Forecast errors for tropical storm and hurricane stages (n mi) are followed by the number of forecasts in parentheses. Errors smaller than the NHC official forecast are shown in bold-face type.

Forecast Technique	Forecast Period (h)				
	12	24	36	48	72
CLP5	36 (12)	71 (10)	101 (8)	146 (6)	182 (2)
GFDI	29 (12)	66 (10)	112 (8)	147 (6)	190 (2)
GFDL	23 (11)	47 (10)	83 (8)	116 (6)	131 (2)
LBAR	33 (12)	57 (10)	73 (8)	75 (6)	74 (2)
AVNI	40 (12)	73 (10)	96 (8)	115 (6)	242 (2)
AVNO	55 (12)	83 (10)	87 (8)	87 (6)	184 (2)
AEMI	34 (9)	64 (7)	89 (6)	130 (4)	216 (1)
BAMD	34 (12)	54 (10)	70 (8)	56 (6)	72 (2)
BAMM	32 (12)	55 (10)	68 (8)	71 (6)	88 (2)
BAMS	36 (12)	72 (10)	97 (8)	134 (6)	188 (2)
NGPI	27 (12)	46 (10)	47 (8)	65 (6)	148 (2)
NGPS	35 (10)	56 (8)	54 (7)	58 (6)	90 (2)
UKMI	34 (11)	64 (9)	87 (8)	78 (6)	101 (2)
UKM	36 (6)	68 (5)	84 (4)	82 (3)	18 (1)
GUNS	25 (11)	54 (9)	72 (8)	73 (6)	88 (2)
GUNA	24 (11)	51 (9)	69 (8)	75 (6)	105 (2)
OFCL	36 (12)	63 (10)	74 (8)	85 (6)	142 (2)
NHC Official (1992-2001 mean)	36 (2203)	67 (1947)	97 (1700)	125 (1472)	182 (1091)

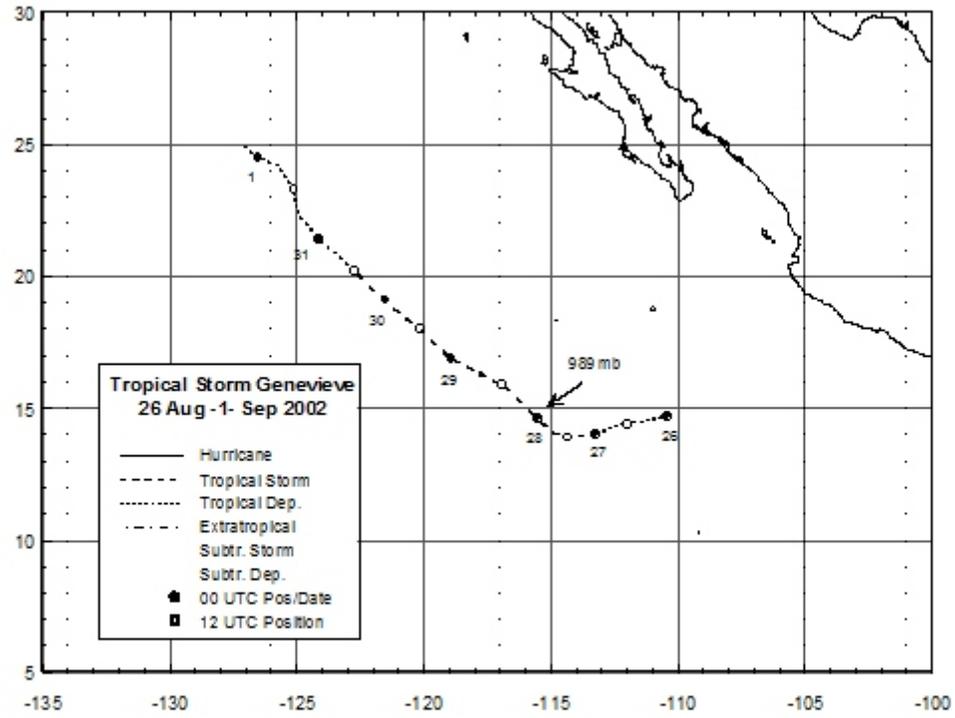


Figure 1. Best track positions for Genevieve, 26 August- 1 September, 2002.

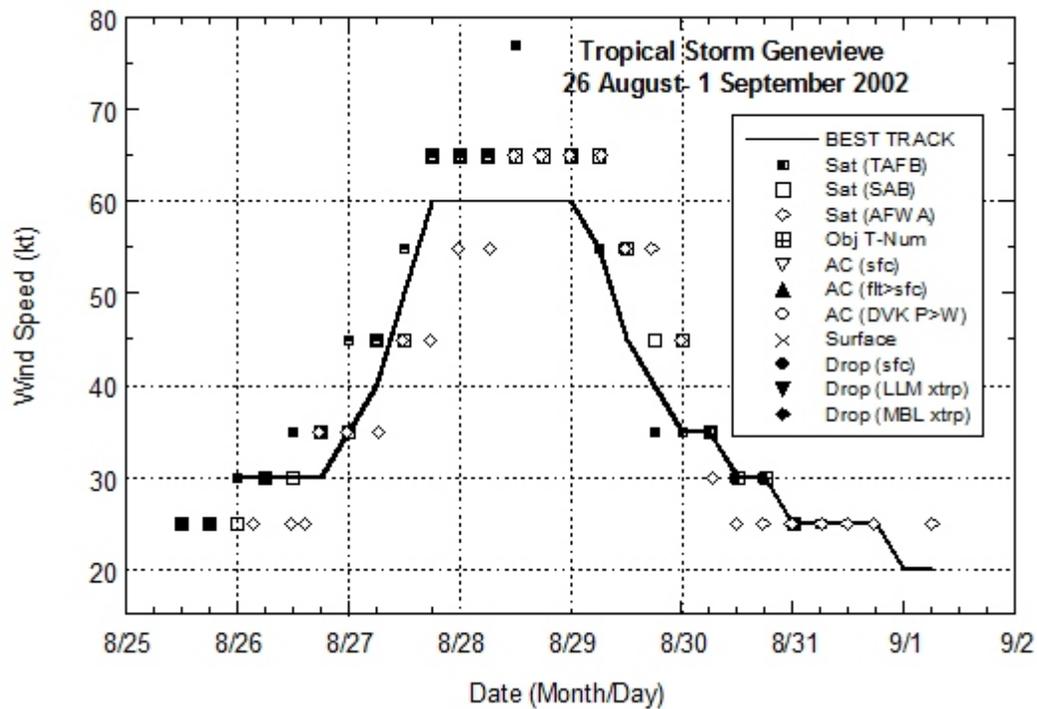


Figure 2. Selected wind observations and best track maximum sustained surface wind speed curve for Genevieve, 26 August- 1 September, 2002.

