Tropical Cyclone Report
Tropical Storm Alvin
(EP012007)
27-31 May 2007
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National Hurricane Center
2 October 2007

This was corrected on 2 October 2007 to modify the best track for 0600 UTC 1 June when the system was a remnant low.

Alvin, the first tropical storm of eastern North Pacific season, spent its life at sea.

Synoptic History

Alvin developed from a poorly-defined tropical wave that crossed Dakar, Senegal on 9 May. The wave moved westward across the Atlantic Ocean and the Caribbean Sea, with very little associated thunderstorm activity until the wave reached Central America on 20 May. The wave continued westward across the eastern North Pacific with a gradual increase in the associated shower activity and developed an exposed surface circulation center. The convection became a little better organized and it is estimated that a tropical depression formed at 0000 UTC 27 May about 300 n mi south of the southern tip of Baja California.

There was little change in the depression's organization during the next day or so while it moved slowly westward, with its center continuing to be to be displaced from the convection. A small relaxation of the easterly shear resulted in slight strengthening, and the cyclone became a tropical storm at 0000 UTC 29 May. It reached its peak intensity of 35 knots and a minimum pressure of 1003 mb at 1200 UTC that day. Thereafter, Alvin weakened as it moved westward into an environment of stable air and higher shear. It is estimated that the cyclone became a remnant low at 0000 UTC 1 June. During the next few days, Alvin's remnants were steered by the low-level flow on a general west-southwestward and westward track. The remnant low dissipated at 1800 UTC 6 June.

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 Alvin (Figs. 2 and 3) include satellite-based Dvorak technique intensity estimates from the Tropical Analysis and Forecast Branch (TAFB) and the Satellite Analysis

Branch (SAB). Microwave imagery from polar-orbiting satellite were also useful in tracking Alvin.

c. Casualty and Damage Statistics

There are no reports of casualties or damage associated with Alvin.

d. Forecast and Warning Critique

The description of the disturbance from which Alvin originated was included in Tropical Weather Outlooks (TWO) products beginning on 24 May. The possibility of tropical cyclone formation was included in the TWO issued at 1700 UTC 25 May, about 30 h prior to genesis.

Average official track errors (with the number of cases in parentheses) for Alvin were 32 (18), 53 (16), 71 (14), 90 (12), 91 (8) and 139 (4) n mi for the 12, 24, 36, 48, 72, and 96 h forecasts, respectively. These errors are below the average official track errors for the 5-yr period 2002-2006 of 33, 57, 79, 99, 140, and 188 n mi, respectively. Table 2 displays the forecast track model statistics and shows a comparison with the official forecast track and the 5-year official mean error.

Average official intensity errors were 3, 6, 11, 13, 17, and 25 knots for the 12, 24, 36, 48, 72, and 96 h forecasts, respectively. The long-term average official intensity errors are 6, 11, 15, 17, 19, and 19 knots for the same 5-yr period. Table 3 includes the forecast intensity model statistics as well as the average official intensity forecast errors and the 5-year official mean errors.

No watches or warnings were required for Alvin.

Table 1. Best track for Tropical Storm Alvin, 27 -31 May 2007.

Date/Time (UTC)	Latitude (°N)	Longitude (°W)	Pressure (mb)	Wind Speed (kt)	Stage
27 / 0000	12.8	110.6	1006	30	tropical depression
27 / 0600	13.0	110.9	1006	30	"
27 / 1200	13.1	111.0	1006	25	"
27 / 1800	13.1	111.1	1007	25	"
28 / 0000	13.1	111.6	1007	25	"
28 / 0600	13.1	112.2	1006	30	"
28 / 1200	13.0	112.6	1005	30	"
28 / 1800	12.9	112.8	1005	30	"
29 / 0000	12.8	113.1	1004	35	tropical storm
29 / 0600	12.7	113.3	1004	35	"
29 / 1200	12.7	113.5	1003	35	"
29 / 1800	12.8	113.8	1004	35	"
30 / 0000	12.9	114.1	1004	35	"
30 / 0600	13.1	114.3	1005	30	tropical depression
30 / 1200	13.3	114.5	1005	30	"
30 / 1800	13.3	114.8	1005	30	"
31 / 0000	13.2	115.0	1005	30	"
31 / 0600	13.1	115.2	1006	25	"
31 / 1200	13.0	115.6	1007	25	"
31 / 1800	12.8	116.0	1008	25	"
01 / 0000	12.8	116.4	1008	25	low
01 /0600	12.7	117.0	1008	25	"
01 / 1200	12.5	117.5	1008	25	"
01 / 1800	12.3	117.9	1008	25	"
02 / 0000	12.1	118.3	1008	25	"
02 / 0600	12.0	118.8	1008	25	"
02 / 1200	11.6	119.4	1008	25	"
02 / 1800	11.3	119.8	1008	25	"
03 / 0000	11.1	120.2	1008	25	"
03 / 0600	11.0	120.6	1008	25	"
03 / 1200	10.8	121.0	1008	25	"
03 / 1800	10.7	121.3	1008	25	"
04 / 0000	10.7	121.8	1008	25	"
04 / 0600	10.7	122.5	1008	25	"
04 / 1200	10.7	123.2	1008	25	"
04 / 1800	10.6	124.0	1008	25	"
05 / 0000	10.5	124.7	1008	25	"
05 / 0600	10.6	125.2	1008	25	"
05 / 1200	10.8	125.7	1008	25	"
05 / 1800	10.9	126.1	1008	25	"

06 / 0000	10.9	126.5	1008	25	"
06 / 0600	11.0	127.0	1008	25	"
06 / 1200	11.1	127.4	1008	20	"
06 / 1800					dissipated
29 / 1200	12.7	113.5	1003	35	minimum pressure

Table. 2. Preliminary forecast evaluation (heterogeneous sample) for Tropical Storm Alvin, 27 - 31 May 2007. 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.

Forecast Technique	Forecast Period (h)					
	12	24	36	48	72	96
CLP5	38 (18)	75 (16)	114 (14)	154 (12)	276 (8)	331 (4)
GFNI	**25 (15)**	**37 (11)**	74 (9)	**62 (4)**	111 (1)	
GFDI	37 (18)	68 (16)	95 (14)	109 (12)	121 (8)	**106 (4)**
GFDN	32 (16)	**36 (12**)	**41 (7)**	**50 (4)**	**64 (2)**	
GFSI	45 (15)	59 (13)	68 (11)	109 (9)	187 (4)	240 (1)
AEMI	33 (17)	**50 (15)**	**52 (13)**	**64 (11)**	111 (7)	146 (3)
NGPI	**31 (15)**	**49 (13)**	**53 (11)**	**66 (9)**	114 (5)	**94 (1)**
UKMI	43 (17)	100 (15)	220 (13)	442 (11)	**83 (4**)	**86 (1)**
BAMD	74 (18)	141 (16)	219 (14)	297 (12)	409 (8)	527 (4)
BAMM	66 (18)	124 (16)	184 (14)	245 (12)	349 (8)	449 (4)
BAMS	60 (18)	117 (16)	168 (14)	215 (12)	306 (8)	300 (4)
CONU	**29 (17)**	54 (15)	92 (13)	173 (11)	**78 (7)**	**72 (1)**
GUNA	**31 (15)**	**51 (13)**	**70 (11)**	101 (9)	**67 (3)**	**72 (1)**
FSSE	38 (7)	63 (6)	77 (6)	128 (4)		
OFCL	32 (18)	53 (16)	71 (14)	90 (12)	91 (8)	139 (4)
NHC Official (2002-2006 mean)	33 (1349)	57 (1192)	79 (1039)	99 (897)	140 (655)	188 (465)

Table 3. Preliminary intensity forecast evaluation (heterogeneous sample) for Tropical Storm Alvin, 27-31 May 2007. Forecast errors (kt) 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
SHF5	5.0(18)	6.8 (16)	9.7 (14)	11.8 (12)	14.3 (8)	18.5 (4)
GFDI	4.0(18)	**4.6 (16)**	**6.8 (14)**	**10.1 (12)**	19.3 (8)	**23.8 (4)**
SHIP	5.8 (18)	9.4 (16)	13.1 (14)	15.3 (12)	**15.8 (8)**	**16.8 (4)**
DSHP	5.8 (18)	9.4 (16)	13.1 14)	15.3 (12)	**15.8 (8)**	**16.8 (4)**
FSSE	4.6 (7)	10.5 (6)	14.7 (6)	18.0 (4)		
ICON	4.5 (18)	7.6 (16)	13.4 (14)	16.8 (12)	21.5 (8)	25.0 (4)
OFCL	2.8 (18)	6.3 (16)	11.4 (14)	13.3 (12)	16.9 (8)	25.0 (4)
NHC Official (2002-2006 mean)	6.3 (1349)	11.0 (1192)	14.6 (1039)	16.9 (896)	18.9 (655)	18.5 (465)

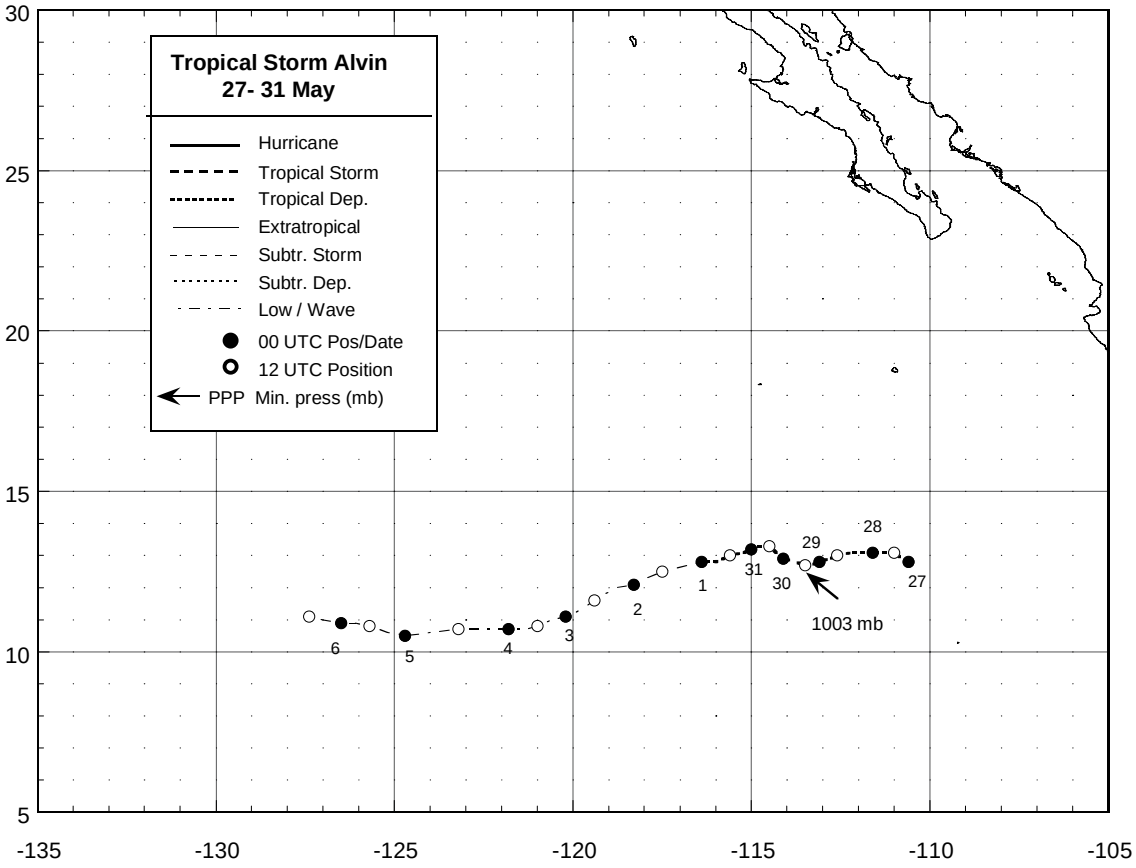

Figure 1. Best track positions for Tropical Storm Alvin, 27 -31 May 2007.

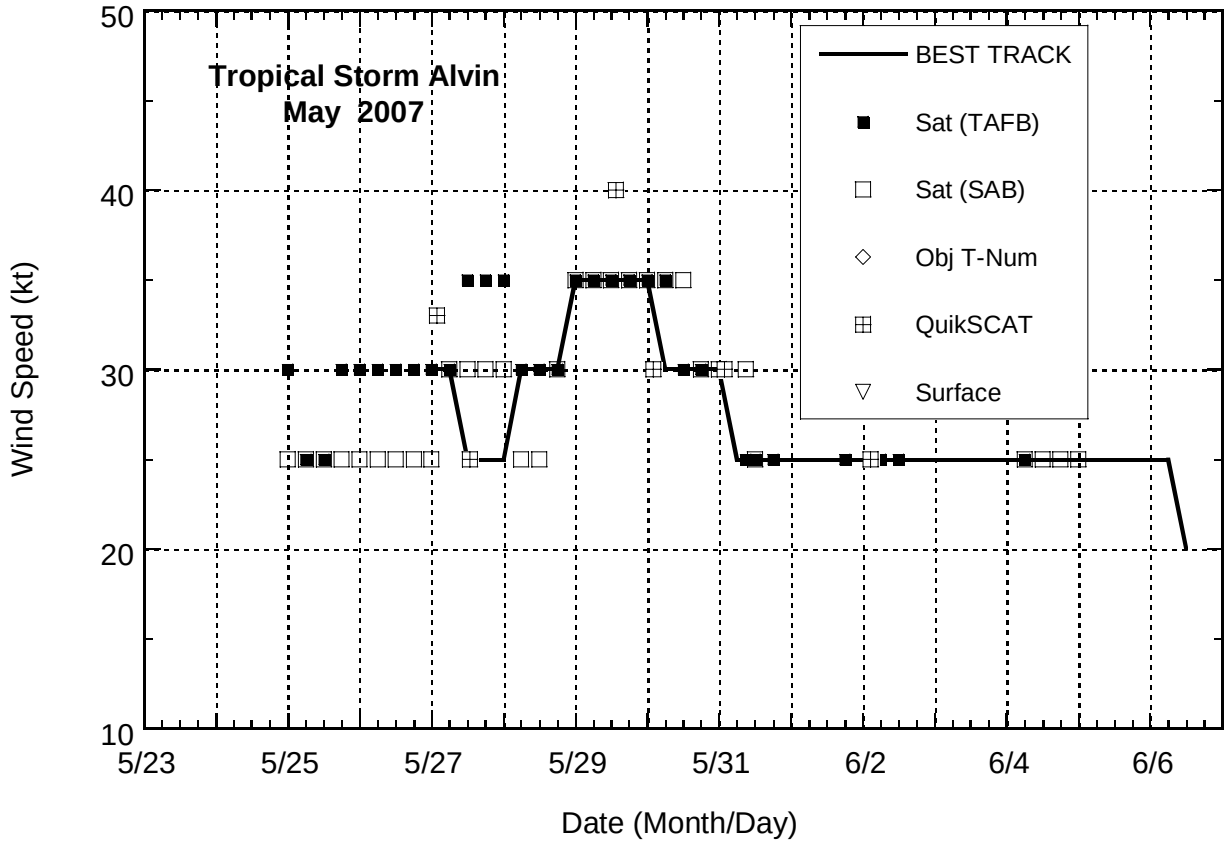

Figure 2. Selected wind observations and best track maximum sustained surface wind speed curve for Tropical Storm Alvin, 27 -31 May 2007.

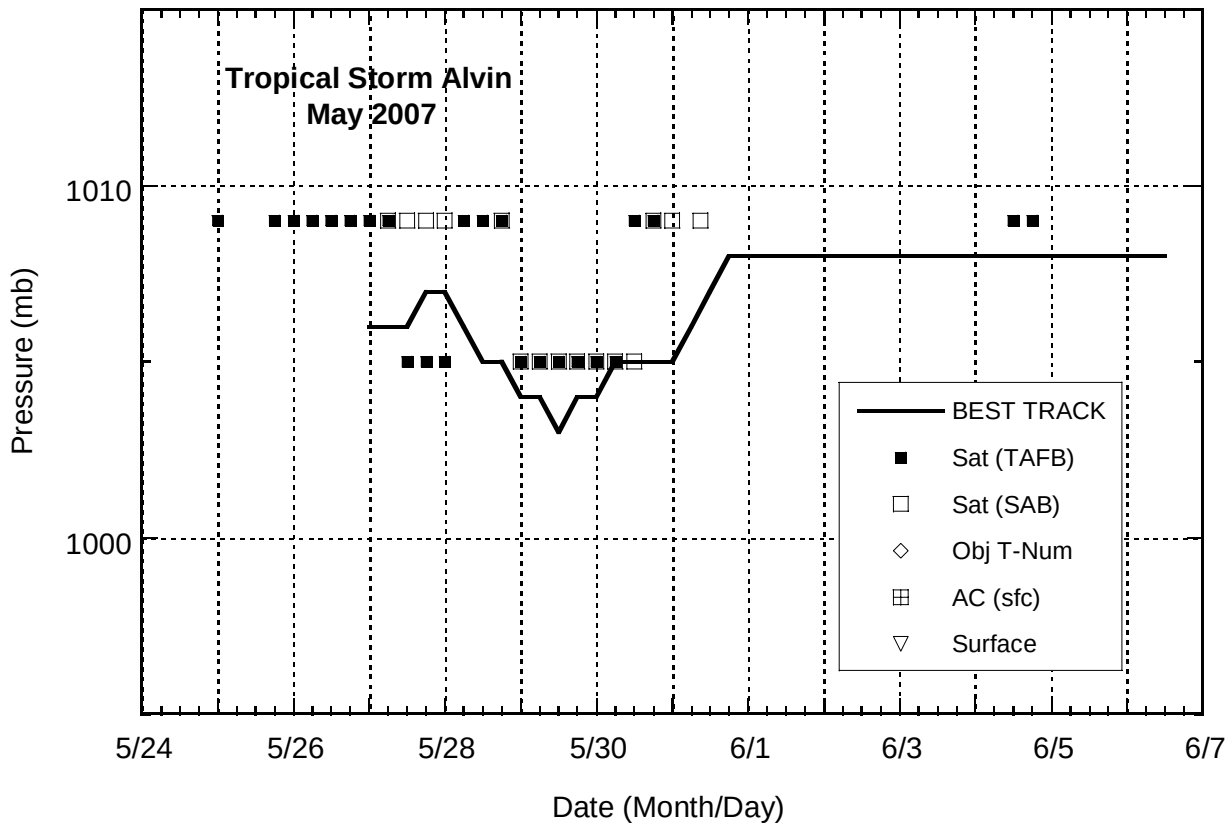

Figure 3. Selected pressure observations and best track minimum central pressure curve for Tropical Storm Alvin, 27 -31 May 2007.