

Tropical Cyclone Report
Tropical Storm Blas
12-15 July 2004

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Blas was a large tropical storm whose center remained at sea. Its outer bands produced gusty winds over extreme southern Baja California.

a. Synoptic History

A tropical wave emerged from western Africa on 1 July. This wave was accompanied by a large swirl of low clouds over the far eastern tropical Atlantic, but the system generated little deep convection as it traversed the tropical Atlantic and Caribbean Sea. The wave crossed Central America on 8 July, and over the next several days deep convection increased and slowly became organized to the south of Mexico. The pace of development increased around 0600 UTC 12 July, when the first Dvorak classification was made for the system. By 1200 UTC that day, the organization and amount of deep convection was sufficient to designate the system as a tropical depression. Banding features became more pronounced during the day, and it is estimated that the tropical cyclone strengthened into Tropical Storm Blas by around 1800 UTC that day.

The “best track” chart of the tropical cyclone’s path is given in Fig. 1. On 12-13 July, Blas moved northwestward at a relatively fast forward speed of 15-18 kt, on the southwest side of a mid-level anticyclone centered over the southwestern United States. The storm reached its estimated peak intensity of 55 kt around 1200 UTC 13 July, at which time it exhibited a large convective overcast with very cold cloud tops. Thereafter, deep convection decreased and Blas gradually weakened due to cooler sea-surface temperatures. The weakening storm turned toward the west-northwest on 14 July. Although the circulation remained large and well-defined, cool waters continued to take their toll on Blas and the cyclone weakened to a tropical depression by 1800 UTC 14 July. Blas degenerated to a large remnant low around 0600 UTC 15 July which moved generally west-northwestward for a couple of days while continuing to slowly spin down. As its forward speed slowed to a drift, the remnant low turned northward, then northeastward on 18 July. Early on 19 July, the low turned eastward and dissipated well to the west of central Baja California.

b. Meteorological Statistics

The best track positions and intensities for Blas are listed in Table 1, and the wind and pressure histories are shown in Figs. 2 and 3, respectively. Observations in 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), as well as a few estimates based on QuikSCAT data (indicated as “Surface” observations in Fig. 2). Because Blas had a broad circulation and lacked a tight inner core structure, the estimated minimum central pressures in the best track were set slightly lower than those given by the standard Dvorak wind-pressure relationship.

Blas was a larger than normal-sized tropical cyclone. Based on QuikSCAT data and a few ship observations, tropical storm force winds extended about 200 n mi to the northeast and northwest of the center by 0000 UTC 13 July. Even though Blas’ center remained well offshore of Baja California, strong gusty winds of the storm’s outer circulation affected the extreme southern Baja California peninsula. On 13 July, an automated station just north of Cabo San Lucas at an elevation of 225 m above sea level reported a maximum sustained wind of 41 kt at 1630 UTC and a peak gust of 57 kt at 1750 UTC. A ship with call sign ELYS4 at 22.2°N 113.6°W reported winds of 090/33 kt and a pressure of 1006.0 mb at 0600 UTC 14 July

c. Casualty and Damage Statistics

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

d. Forecast and Warning Critique

Blas was a tropical cyclone for only 60 hours so there are too few forecasts to produce meaningful verification statistics. Although the direction of motion was generally well predicted, the early track forecasts had a slow bias. This resulted in some overprediction of the intensity, since the storm reached cooler waters sooner than expected.

Table 1. Best track for Tropical Storm Blas, 12-15 July 2004.

Date/Time (UTC)	Latitude (EN)	Longitude (EW)	Pressure (mb)	Wind Speed (kt)	Stage
12 / 1200	14.6	105.5	1006	30	tropical depression
12 / 1800	15.5	106.8	1002	35	tropical storm
13 / 0000	16.4	108.0	997	45	"
13 / 0600	17.3	109.3	994	50	"
13 / 1200	18.4	110.8	991	55	"
13 / 1800	19.6	112.2	994	50	"
14 / 0000	20.7	113.7	997	45	"
14 / 0600	21.5	115.1	999	40	"
14 / 1200	22.1	116.6	1002	35	"
14 / 1800	22.5	117.9	1004	30	tropical depression
15 / 0000	22.9	119.2	1005	30	"
15 / 0600	23.2	120.4	1006	30	remnant low
15 / 1200	23.4	121.4	1007	25	"
15 / 1800	23.6	122.3	1008	25	"
16 / 0000	23.8	123.3	1008	25	"
16 / 0600	24.0	124.5	1008	25	"
16 / 1200	24.1	125.5	1008	20	"
16 / 1800	24.2	126.3	1008	20	"
17 / 0000	24.4	127.0	1009	20	"
17 / 0600	24.8	127.5	1009	20	"
17 / 1200	25.2	127.8	1009	20	"
17 / 1800	25.6	128.1	1010	15	"
18 / 0000	26.0	128.3	1010	15	"
18 / 0600	26.4	128.4	1011	15	"
18 / 1200	26.7	128.2	1012	15	"
18 / 1800	26.9	127.9	1013	15	"
19 / 0000	26.9	127.6	1014	15	"
19 / 0600	26.9	127.3	1015	15	"
19 / 1200					dissipated
13 / 1200	18.4	110.8	991	55	minimum pressure

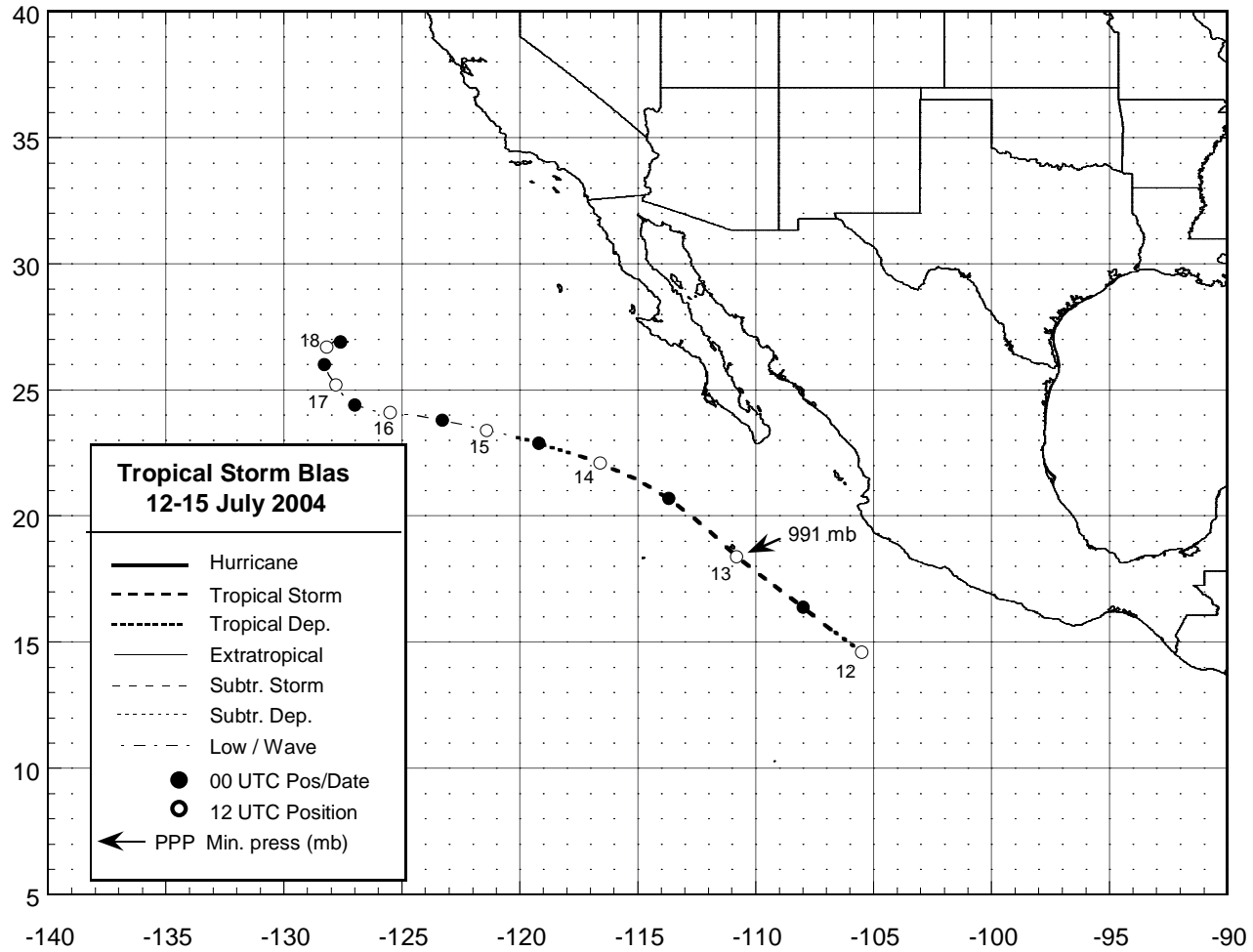


Figure 1. Best track positions for Tropical Storm Blas, July 2004.

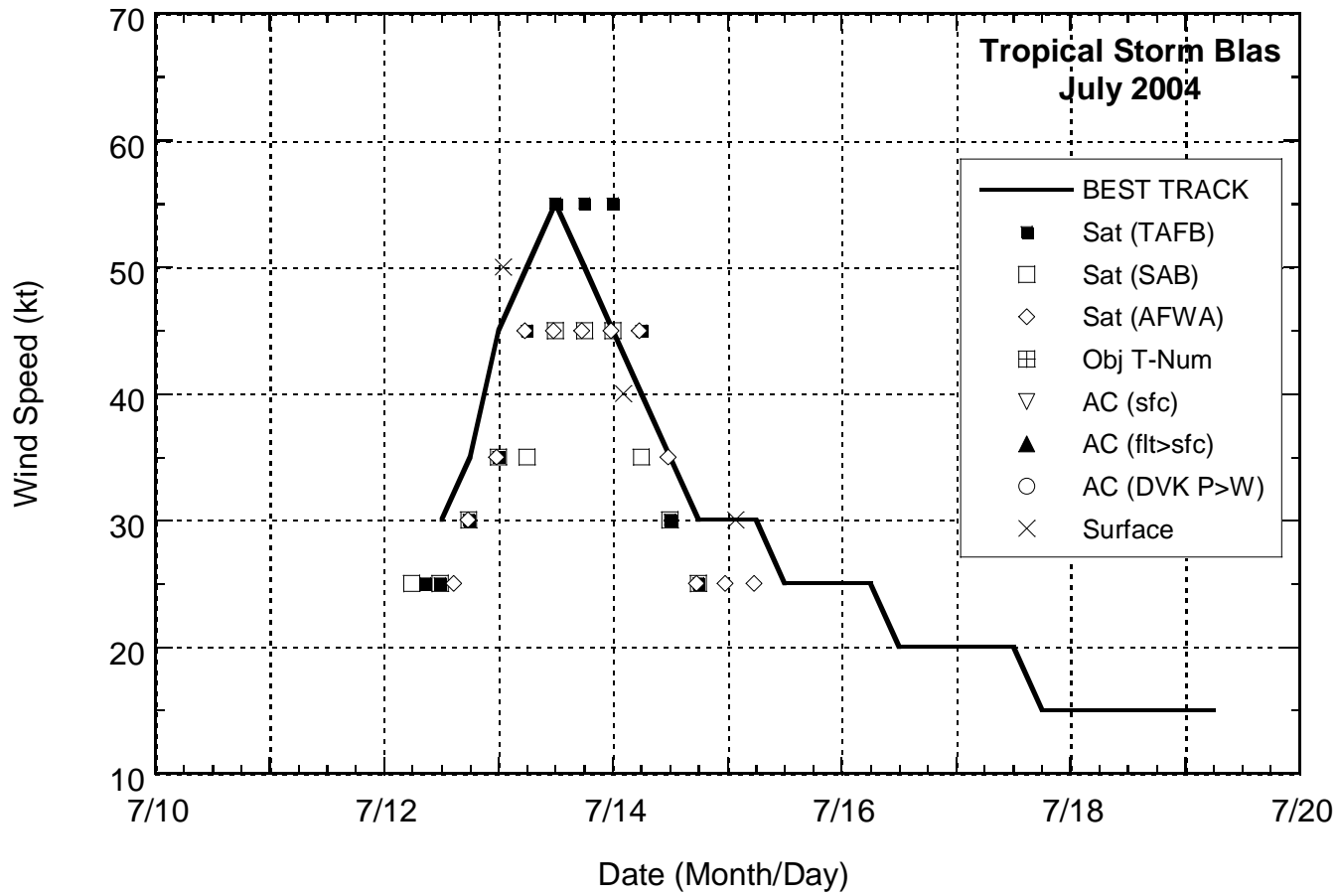


Figure 2. Selected wind observations and best track maximum sustained surface wind speed curve for Tropical Storm Blas, July 2004.

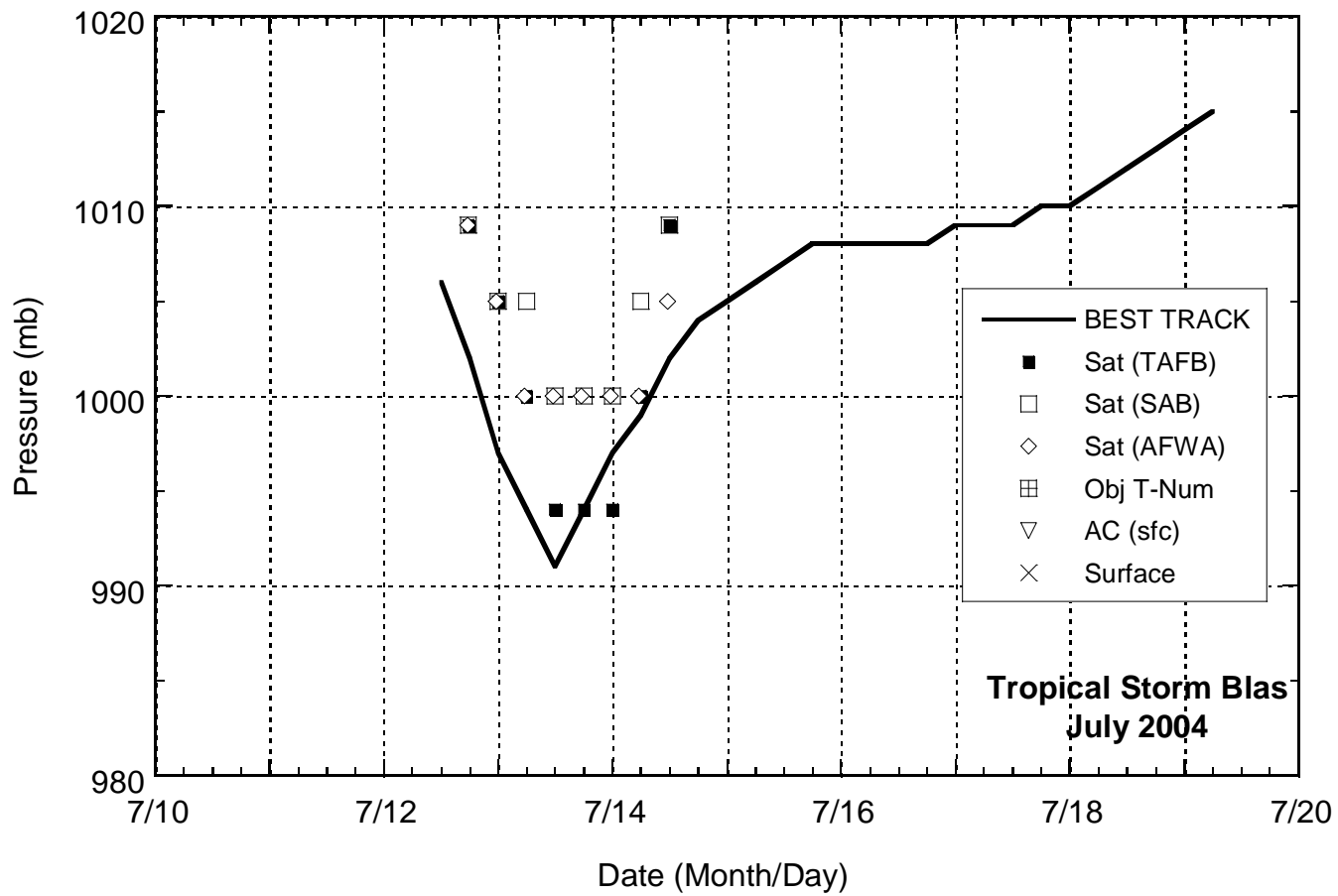


Figure 3. Selected pressure observations and best track minimum central pressure curve for Tropical Storm Blas, July 2004.