

Tropical Cyclone Report
Tropical Storm Josephine
17-19 September 2002

Richard J. Pasch
National Hurricane Center
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Josephine was a short-lived, high latitude tropical storm well out at sea.

a. Synoptic History

Josephine was of non-tropical origin. Surface data indicated that a weak low pressure system formed along a dissipating, nearly stationary frontal zone about 750 n mi east of Bermuda on 16 September. Over the next day, as the low moved slowly westward, a small area of deep convection formed near the low-level circulation center and the system's cloud pattern changed from one that resembled a non-tropical cyclone to that of a tropical cyclone. It is estimated that the system became a tropical depression around 1200 UTC 17 September, while centered about 620 n mi east of Bermuda. The tropical cyclone moved slowly north-northwestward to northward for about a day. Deep convection associated with the system was intermittent and at times the low-level center became exposed. However, the cyclone strengthened slightly and is estimated to have become a tropical storm by 0600 UTC 18 September. Soon thereafter, Josephine accelerated northeastward in the flow ahead of a deep-layer mid-latitude trough. The system lost its tropical characteristics around 1200 UTC 19 September, at which time a ship report indicated that the cyclone had strengthened into an storm with winds near 50 kt well removed from the center. Soon thereafter, the storm merged with a larger extratropical low and frontal system. The "best track" chart of Josephine's path is displayed 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 Josephine (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). Additionally, there was a report of 37 kt winds from a ship (see Table 2) as well as QuikSCAT and SSM/I winds near 35 kt around 0600 UTC 18 September. When Josephine became extratropical at 1200 UTC 19 September, a ship with call sign C6LV3 reported 50 kt winds about 76 n mi southeast of the center.

c. Casualty and Damage Statistics

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

d. Forecast and Warning Critique

Josephine was a tropical storm for only about a day, so there are no meaningful forecast statistics. In general, the official forecasts correctly anticipated that the cyclone would accelerate northeastward, and that it would not strengthen significantly as a tropical cyclone. Watches or warnings were not required for Josephine.

Table 1. Best track for Tropical Storm Josephine, 17-19 September 2002.

Date/Time (UTC)	Latitude (°N)	Longitude (°W)	Pressure (mb)	Wind Speed (kt)	Stage
17 / 1200	32.7	52.4	1016	30	tropical depression
17 / 1800	33.2	52.7	1015	30	"
18 / 0000	33.7	52.7	1014	30	"
18 / 0600	34.7	52.7	1009	35	tropical storm
18 / 1200	35.5	52.0	1009	35	"
18 / 1800	36.6	50.5	1009	35	"
19 / 0000	38.0	48.8	1009	35	"
19 / 0600	39.5	46.7	1009	35	"
19 / 1200	41.5	43.3	1004	50	extratropical
19 / 1800					merged with larger extratropical cyclone
19 / 0600	39.5	46.7	1009	35	minimum pressure

Table 2. Selected ship reports with winds of at least 34 kt for Tropical Storm Josephine, September 2002.

Date/Time (UTC)	Ship call sign	Latitude (°N)	Longitude (°W)	Wind dir/speed (kt)	Pressure (mb)
18 / 0300	PDKK	34.1	52.0	190 / 37	1010.8

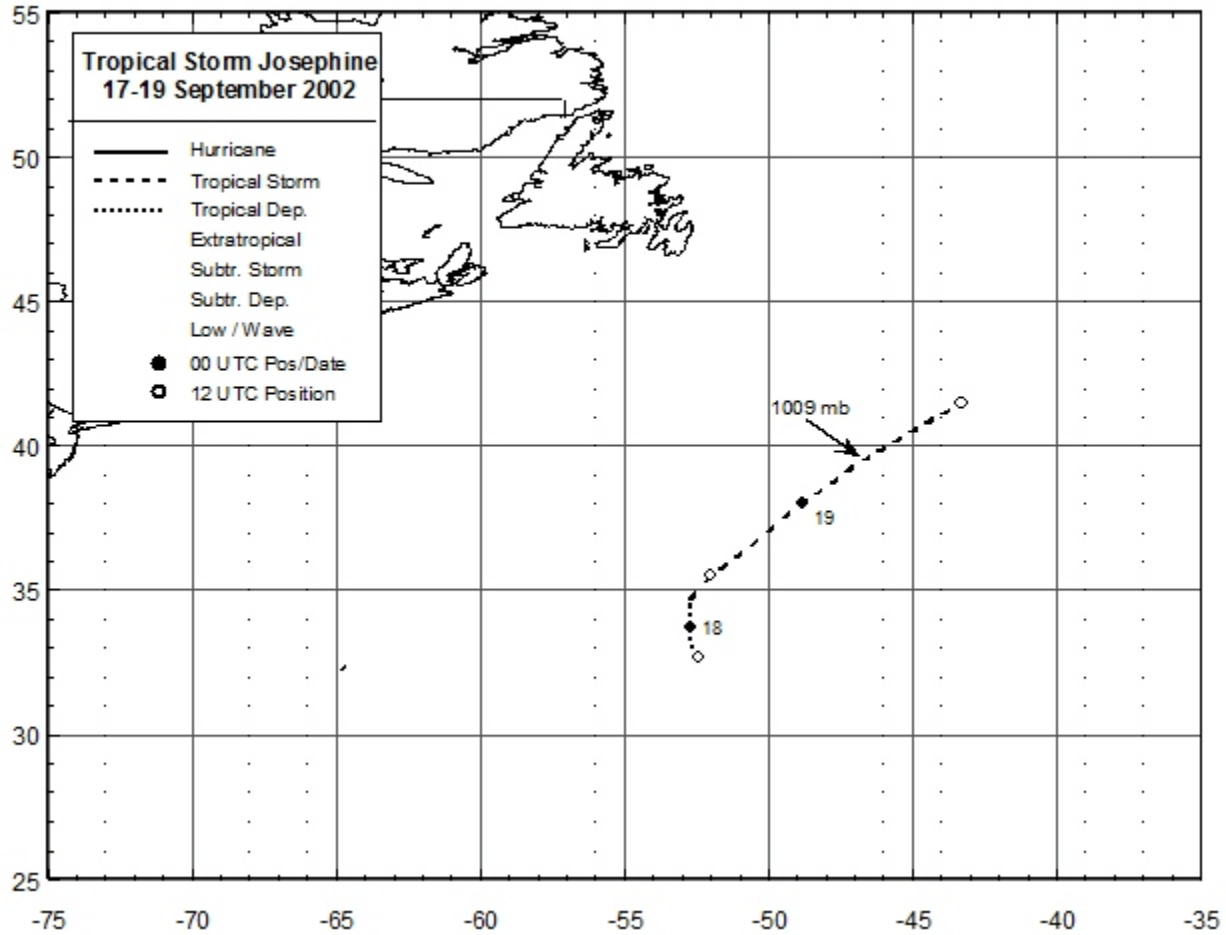


Figure 1. Best track positions for Tropical Storm Josephine, 17-19 September 2002. Minimum pressure (mb) at arrowhead.

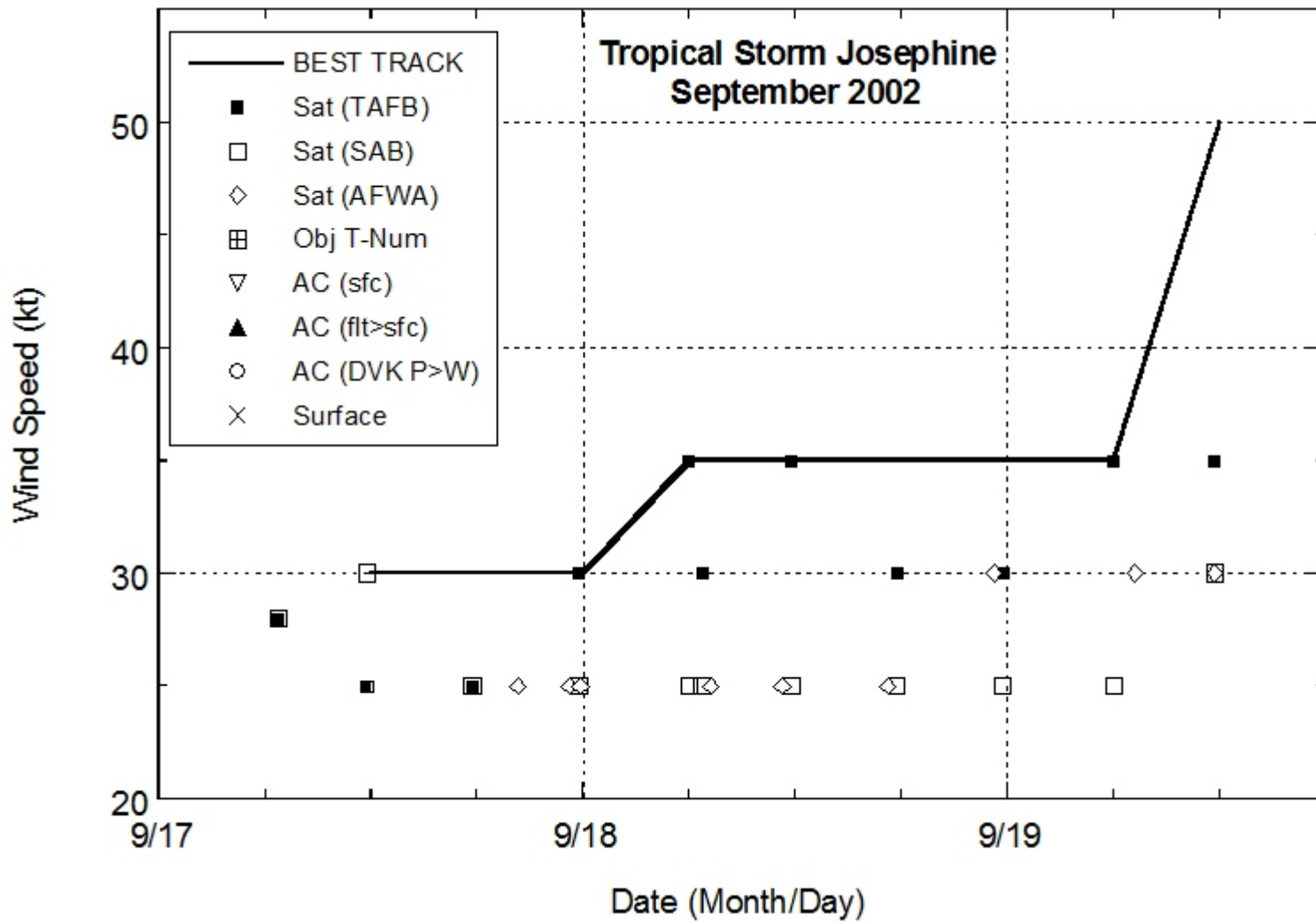


Figure 2. Best track maximum sustained surface wind speed curve and satellite-derived intensity estimates for Tropical Storm Josephine, 17-19 September 2002.

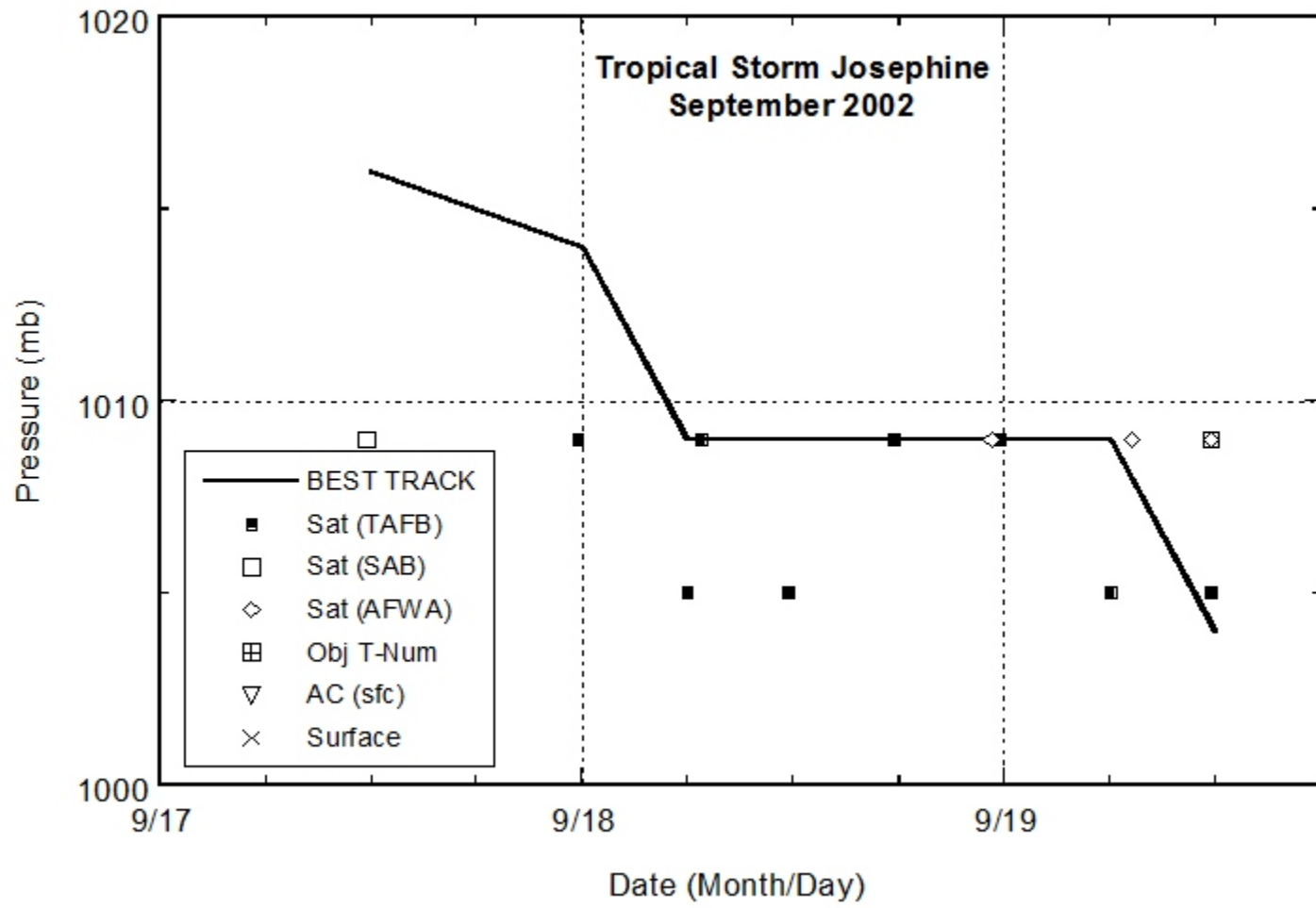


Figure 3. Best track minimum central pressure curve and satellite-derived pressure estimates for Tropical Storm Josephine, 17-19 September 2002.