

Tropical Cyclone Report  
Tropical Storm Nadine  
19 - 21 October 2000

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a. Synoptic history

The genesis of Tropical Storm Nadine resulted from the interaction of a strong upper-level trough and a tropical wave. Water vapor imagery showed a distinct and nearly stationary upper-trough extending northeastward from the Leeward Islands across the Atlantic for several days. A cut-off low generated within the trough, moved southwestward, and interacted with a tropical wave that reached the area on 16 October. The system as a whole began to move slowly westward with increasing convection and on the 17<sup>th</sup>, a broad low to middle level circulation became apparent on visible images. However, it was not until the 19<sup>th</sup>, when the system became stationary, that ship reports indicated that a surface circulation had developed. It is estimated that a tropical depression formed about 600 n mi southeast of Bermuda at 1200 UTC 19 October.

The depression moved slowly northward and then northeastward around the periphery of the subtropical ridge and ahead of a cold front. The thunderstorm activity became better organized with increasing outflow while the shear relaxed. Based on satellite Dvorak intensity numbers, it is estimated that the depression became Tropical Storm Nadine at 1200 UTC on the 20<sup>th</sup>. Nadine reached a peak intensity of 50 knots and a minimum pressure of 999 mb at 0000 UTC on the 21<sup>st</sup> when a possible eye-like feature and an impressive outflow were observed on satellite imagery. Thereafter, the shear increased and convection began to weaken. Nadine interacted with a frontal zone and became a weak extratropical low at 0000 UTC 22 October while moving northeastward. It was then absorbed by a much larger frontal low. The best track is listed in Table 1 and is plotted in Fig. 1.

b. Meteorological statistics

Figure 2 depicts the best track curves and data plots of the maximum sustained 1-min surface winds and minimum central pressure as a function of time. These plots are primarily based on Dvorak satellite classification estimates. A report of 33 knots from the southeast from the vessel *Prince of Waves* located just east of the cloud system center was used to initiate tropical depression advisories.

c. Casualties and damages

No casualties or damages were associated with Nadine.

d. Forecast and warning critique

There were too few forecasts associated with Nadine to conduct a meaningful quantitative evaluation. The NCEP global model correctly indicated the development of a tropical cyclone in the area well in advance.

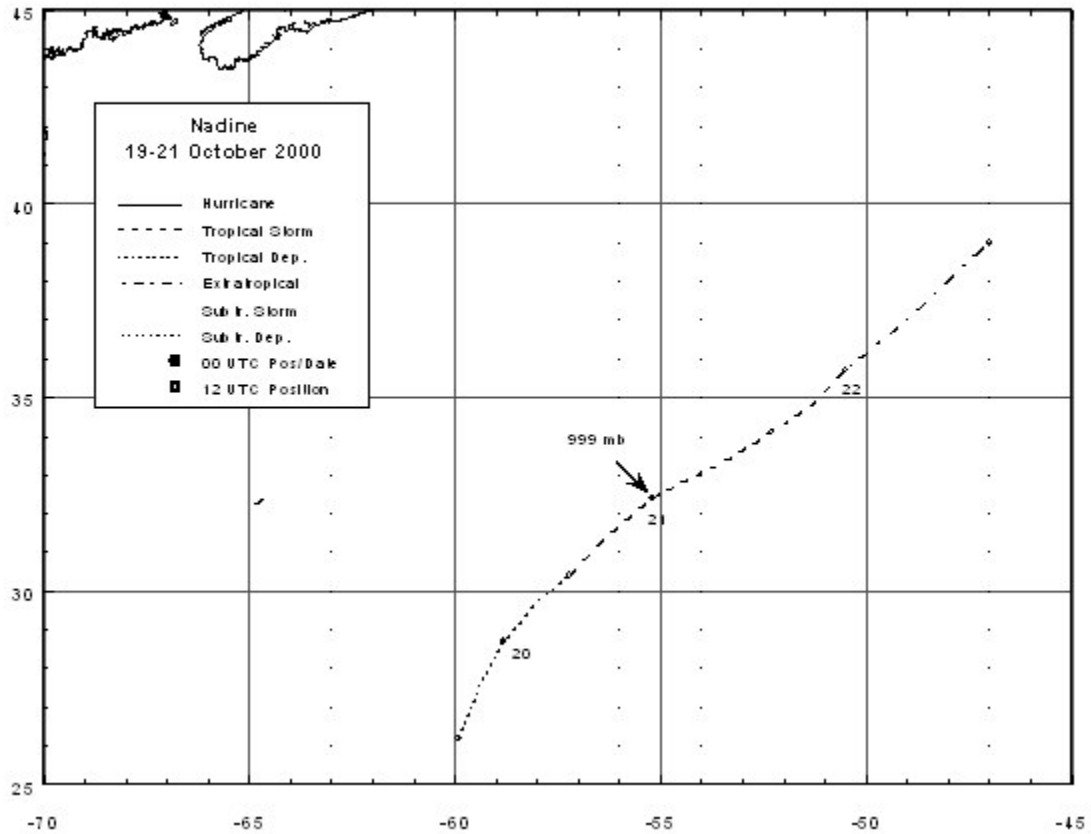


Fig.1. Best track positions for Tropical Storm Nadine, 19-21 October, 2000.

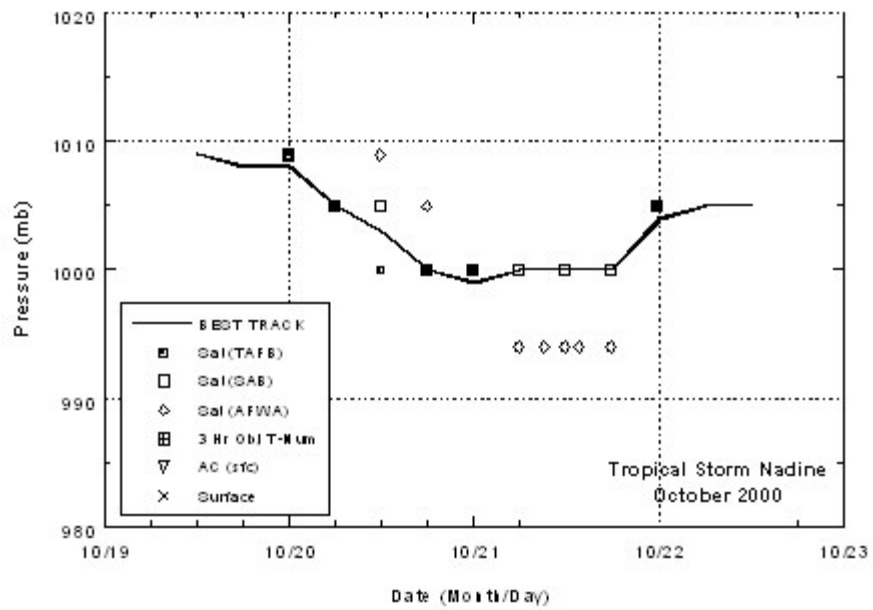
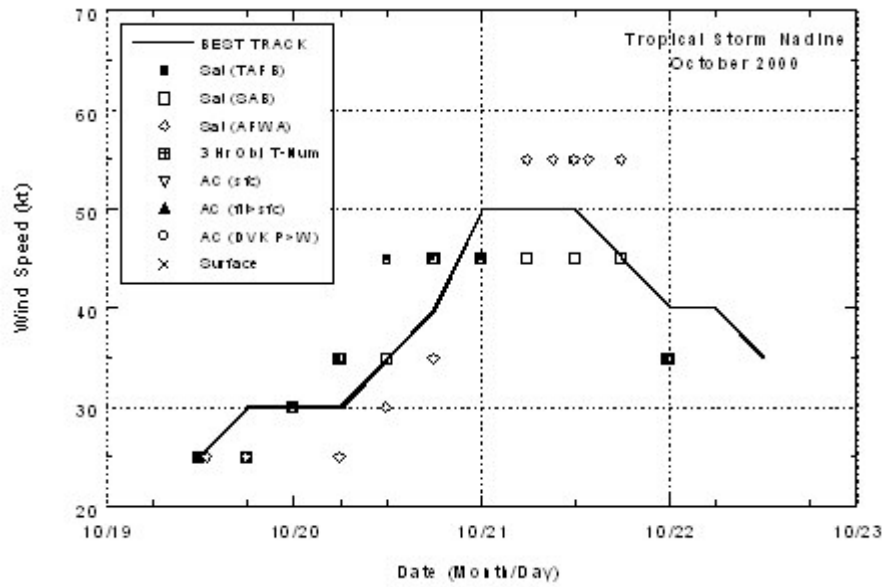


Fig. 2 Best track maximum sustained wind speed and minimum central pressure for Tropical Storm Nadine.

Table 1. Best track for Tropical Storm Nadine, 19-21 October, 2000.

Date/Time (UTC)	Latitude (°N)	Longitude (°W)	Pressure (mb)	Wind Speed (kt)	Stage
19 / 1200	26.2	59.9	1009	25	tropical depression
19 / 1800	27.5	59.4	1008	30	"
20 / 0000	28.7	58.8	1008	30	"
20 / 0600	29.7	58.0	1005	30	"
20 / 1200	30.4	57.2	1003	35	tropical storm
20 / 1800	31.4	56.3	1000	40	"
21 / 0000	32.4	55.2	999	50	"
21 / 0600	33.3	53.5	1000	50	"
21 / 1200	34.1	52.3	1000	50	"
21 / 1800	34.8	51.3	1000	45	"
22 / 0000	35.7	50.5	1004	40	extratropical
22 / 0600	37.0	49.0	1005	40	"
22 / 1200	39.0	47.0	1005	35	"
22/1800					absorbed by a frontal low
21 / 0000	32.4	55.2	999	50	minimum pressure