

PRELIMINARY REPORT
Unnumbered Subtropical Storm
1-2 June, 1997

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a. Synoptic History

A weak low-level circulation developed within a cluster of thunderstorms over the Florida Straits on 29 May 1997. The poorly organized system drifted northeastward over the next two days with little development. The system accelerated north-northeastward late on 31 May. Surface reports then indicated a low pressure area without a well-defined closed circulation, although 20-25 kt winds were occurring east of the low. A shortwave trough approaching from the southwest enhanced convection near the system center, and a post-analysis of satellite and surface observations suggests that the system became a subtropical depression at 0600 UTC 1 June (Table 1 and Figure 1).

The depression moved rapidly north-northeastward and strengthened. It reached subtropical storm strength at 1200 UTC 1 June and a peak intensity of 45 kt 6 h later. Satellite imagery on the 1st showed a well-defined low-level center with a band of relatively shallow cumulonimbus wrapped around the south side of the center. The cyclone turned east-northeastward on 2 June when located about 120 nm south of the New England coast. It became extratropical around 1800 UTC that day and merged with a cold front. The remnant low dissipated by 0000 UTC 3 June.

b. Meteorological Statistics

Figures 2 and 3 show best track curves of minimum central pressure and maximum one-minute surface wind speed, respectively, as a function of time. The curves are based primarily on Hebert-Poteat estimates from satellite imagery, augmented by surface and aircraft observations.

NOAA data buoy 41002 reported a minimum pressure of 1003.8 mb with a coincident 8.5 minute average wind of 27 kt and gusts to 35 kt at 1000 UTC 1 June. A 10-minute average wind of 32 kt occurred between 1000 and 1100 UTC. An Air Force Hurricane Hunter aircraft measured a minimum pressure of 1004 mb at 1930 UTC 1 June, with maximum flight level winds of 55 kt at 1500 ft. No other reports of tropical-storm force winds were received at the NHC.

c. Casualty and Damage Statistics

No reports of damage or casualties associated with the subtropical storm have been received at the NHC.

d. Forecast and Warning Critique

NHC wrote no advisories on this system, so there are no official forecasts to verify.

Operationally, analysis and forecast information on the system was provided in the National Weather Service Offshore Waters Forecasts, where it was considered to be an extratropical gale. This approach was agreed to during conference calls on the morning and afternoon of 1 June between the NHC, U.S. Navy, Hydrometeorological Prediction Center and appropriate NWS offices with marine responsibility. Sufficient information on this system was available in real time within routine NWS marine products. This post-storm analysis concludes that this non-frontal system should be designated as subtropical for purposes of historical record keeping because it had a relatively tight circulation as indicated by aircraft data and organized convection near the circulation center, but there was insufficient evidence of a warm-core circulation to justify classifying the system as a tropical storm.

NHC track prediction guidance correctly indicated the general north-northeastward motion followed by an eastward turn before the storm reached New England. However, no meaningful model verification statistics are available.

Table 1. Best track, Unnumbered Subtropical Storm, 31 May - 2 June, 1997.

Date/Time (UTC)	Position		Pressure (mb)	Wind Speed (kt)	Stage
	Lat. (°N)	Lon. (°W)			
31/1800	28.5	77.4	1011	25	Low
01/0000	29.5	77.1	1009	25	“ ”
0600	31.2	76.3	1006	30	Subtropical Depression
1200	33.2	75.3	1003	35	Subtropical Storm
1800	35.5	74.1	1004	45	“ ”
02/0000	37.6	72.2	1006	45	“ ”
0600	39.5	70.4	1008	40	“ ”
1200	40.0	68.4	1009	35	“ ”
1800	40.0	66.3	1012	30	Extratropical
03/0000					Dissipated

01/1200	33.2	75.3	1003	35	minimum pressure
01/1800	35.5	74.1	1004	45	maximum wind

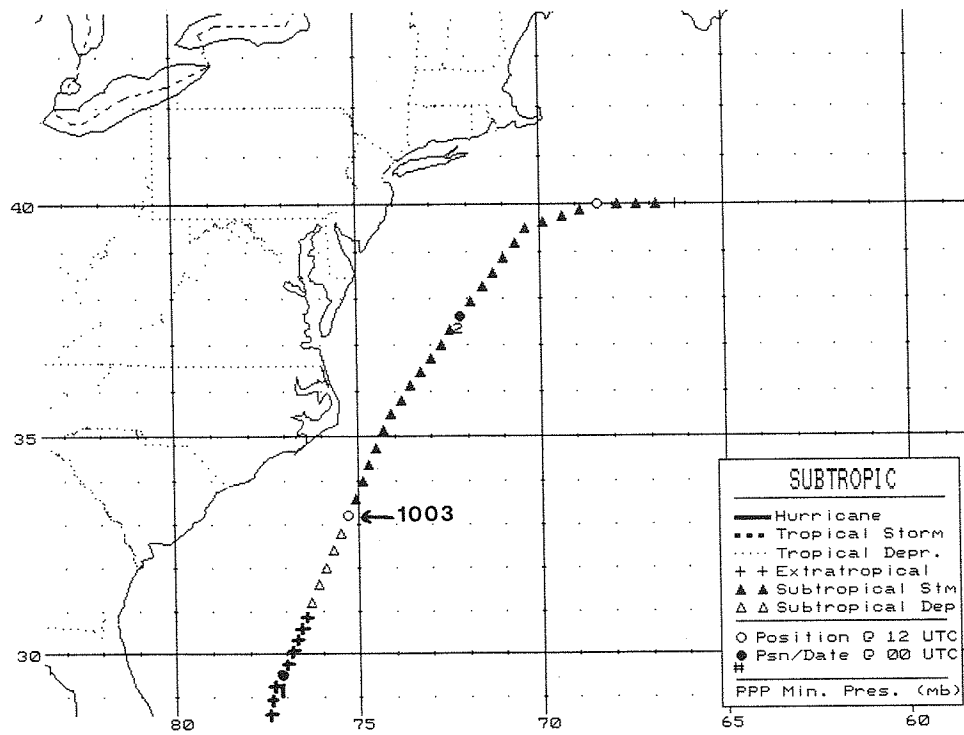


Figure 1. Best track positions for the Unnumbered Subtropical Storm, 1-2 June, 1997.

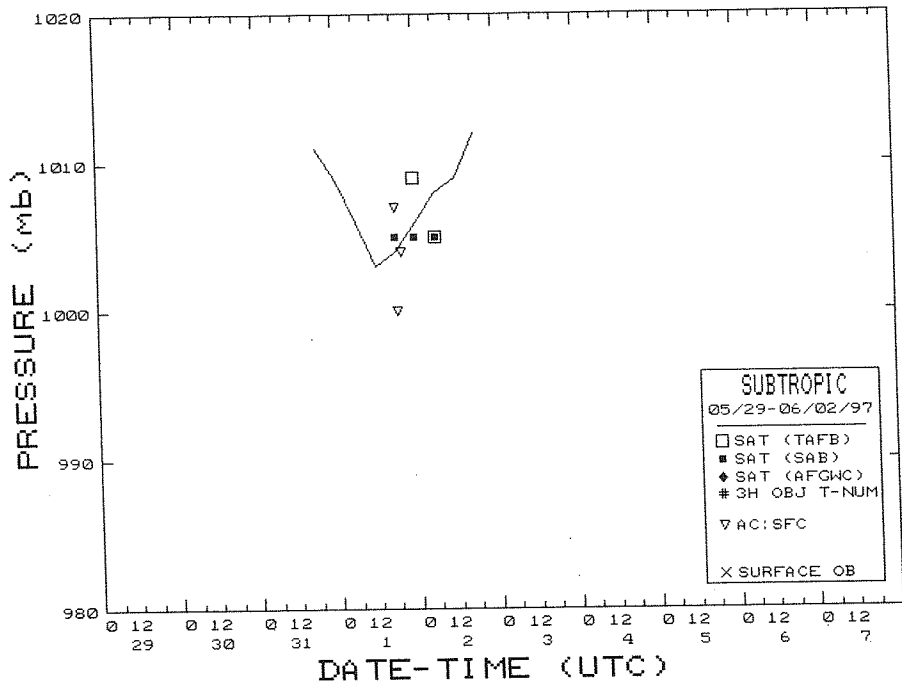


Figure 2. Best track minimum central pressure curve for the Unnumbered Subtropical Storm.

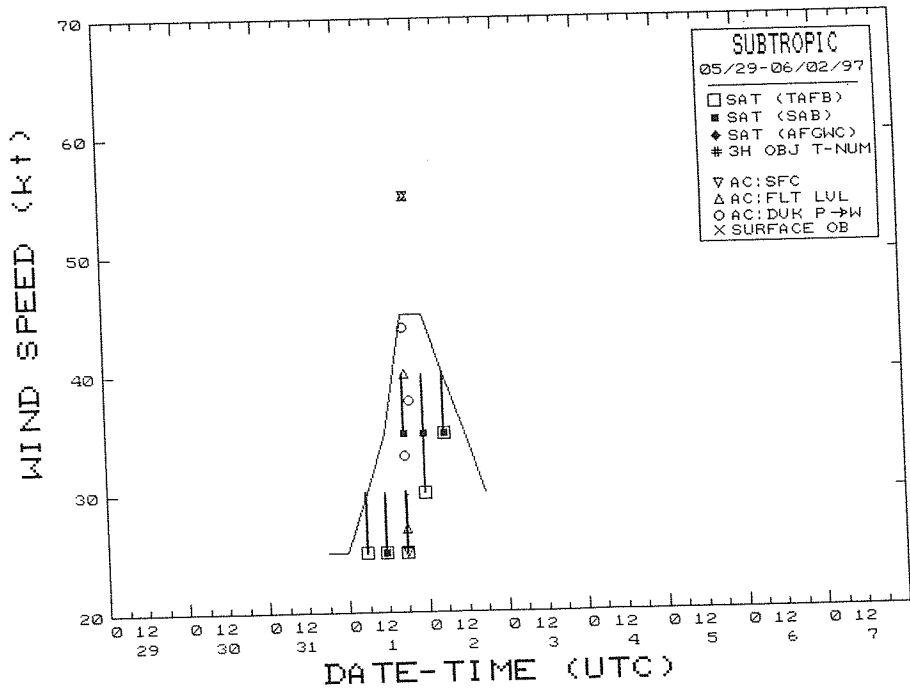


Figure 3. Best track one-minute surface wind speed curve for the Unnumbered Subtropical Storm.