

Tropical Cyclone Report
Hurricane Noel
4-6 November 2001

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Hurricane Noel was a short-lived hurricane of subtropical origin.

a. Synoptic History

Noel developed from a non-tropical occluded low that gradually lost its frontal structure. The first appearance of the frontal low in surface synoptic maps was at 0000 UTC 2 November, when a 1002-mb low was analyzed near 32°N, 42°W. The low deepened and occluded while it moved slowly west-northwestward over the next 48 h. The official “best track” of Noel begins at 0000 UTC 4 November when the system, then 775 n mi south of Cape Race, Newfoundland, was being classified as a subtropical cyclone by both the Tropical Analysis and Forecast Branch (TAFB) and the Satellite Analysis Branch (SAB).

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. The subtropical cyclone drifted northward initially, its speed increasing to about 10 kt by late on 4 November. Convection, which had been limited to the northern semicircle, became more symmetric as it formed a ring around the center with a radius of about 60 n mi. The system developed a weak mid-level warm core early on 5 November, strengthened and became a hurricane with 65 kt winds at 1200 UTC that day, about 535 n mi south-southeast of Cape Race. By 0000 UTC 6 November, westerly wind shear began to displace and limit convection near the center, and Noel weakened to a tropical storm. Noel then accelerated to the north, and had lost all its convection by 1200 UTC that day, when it became extratropical about 285 n mi southeast of Cape Race. The extratropical low was absorbed into a larger extratropical system later that day.

b. Meteorological Statistics

Observations in Noel (Figs. 2 and 3) include satellite-based Dvorak technique intensity estimates from TAFB and SAB, and the U. S. Air Force Weather Agency (AFWA). Initial subtropical classifications of 45-50 kt are consistent with a QuikSCAT pass near 0800 UTC 4 November showing peak winds of 45 kt. Although satellite intensity estimates remained constant over the next 30 h, a report from the ship **Tellus** (call sign **WRYG**, Fig. 2, Table 2) of 65 kt at 1400 UTC 5 November indicates the system had strengthened. This ship report is the basis for the peak intensity estimate of 65 kt. Microwave sounding data suggested that a weak warm core near 550 mb had developed by about 1000 UTC on the 5th.

c. Casualty and Damage Statistics

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

d. Forecast and Warning Critique

Only five forecasts were issued for Noel, too few for a meaningful forecast evaluation. Apart from marine warnings issued by the government of Canada, there were no watches and warnings associated with Noel.

Table 1. Best track for Hurricane Noel, 4-6 November 2001.

Date/Time (UTC)	Latitude (°N)	Longitude (°W)	Pressure (mb)	Wind Speed (kt)	Stage
04 / 0000	33.9	50.4	988	45	subtropical storm
04 / 0600	34.1	50.4	990	45	"
04 / 1200	34.3	50.4	993	45	"
04 / 1800	35.2	50.3	993	50	"
05 / 0000	36.1	50.1	991	55	"
05 / 0600	37.0	50.1	988	60	"
05 / 1200	37.8	50.3	986	65	hurricane
05 / 1800	38.8	50.2	986	65	"
06 / 0000	39.7	49.7	990	60	tropical storm
06 / 0600	41.3	49.2	994	55	"
06 / 1200	43.0	48.5	996	50	extratropical
06 / 1800	45.0	48.0	1000	50	"
07 / 0000					absorbed by extratropical low
05 / 1200	37.8	50.3	986	65	minimum pressure

Table 2. Selected ship or buoy reports with winds of at least 34 kt for Hurricane Noel, 4-6 November 2001.

Date/Time (UTC)	Ship call sign	Latitude (°N)	Longitude (°W)	Wind dir/speed (kt)	Pressure (mb)
04/0000	ZCBO5	31.8	47.1	150/35	1005.5
05/1200	WRYG	37.0	49.5	180/60	992.0
05/1400	WRYG	37.0	50.1	240/65	994.0
05/1500	WRYG	37.0	50.5	240/51	994.2
05/1800	WRYG	36.8	51.3	270/48	997.8
05/2100	WRYG	36.8	52.1	290/45	1002.5
06/0000	WRYG	36.7	53.1	270/45	1006.2
06/0000	ELRT2	36.5	49.4	260/37	1005.0
06/0300	WRYG	36.6	54.1	270/40	1009.0
06/0900	P6038	46.4	48.4	120/35	1010.2
06/1200	44145	46.7	48.7	140/46	1008.4

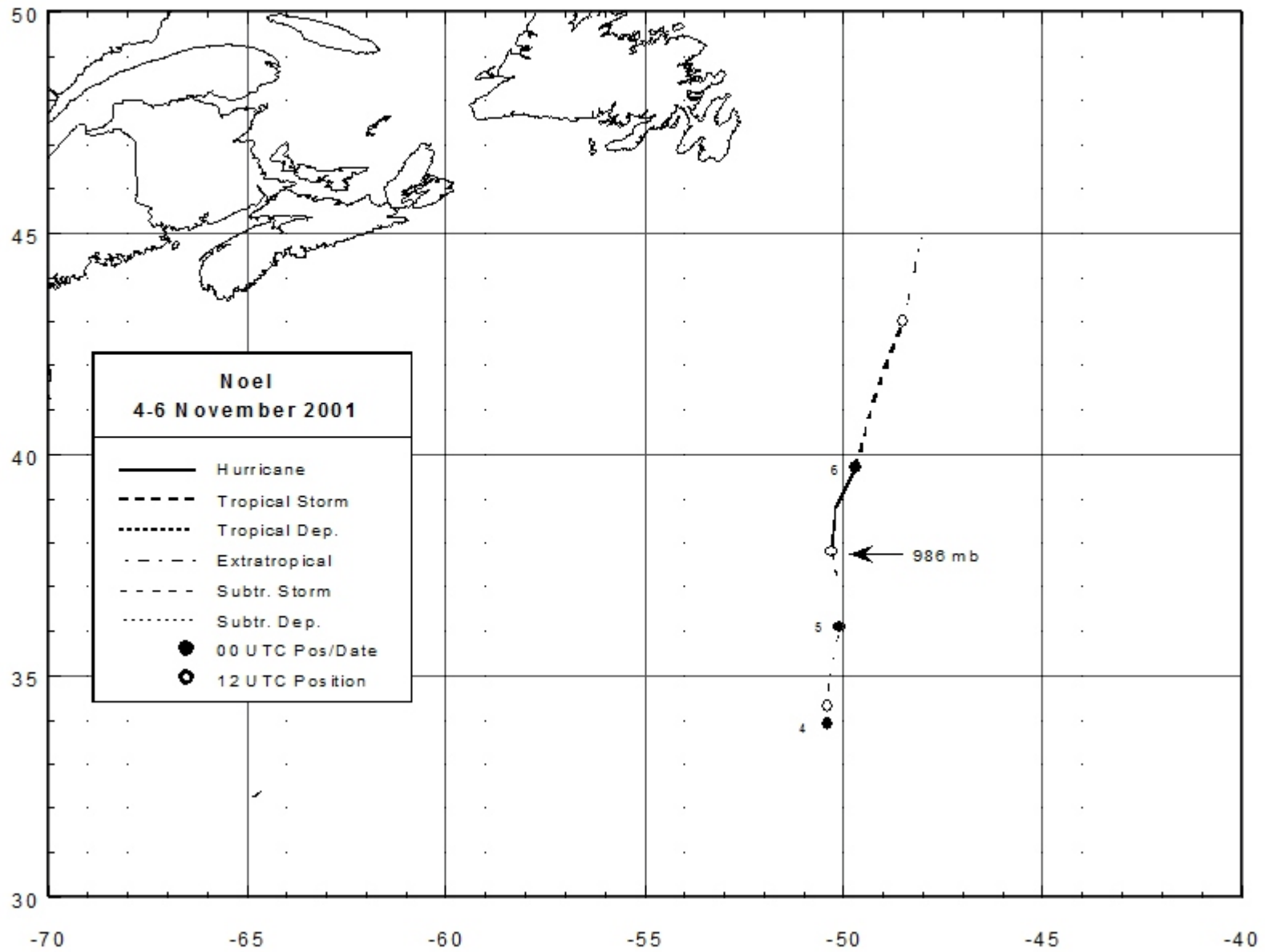


Figure 1. Best track positions for Hurricane Noel, 4-6 November 2001.

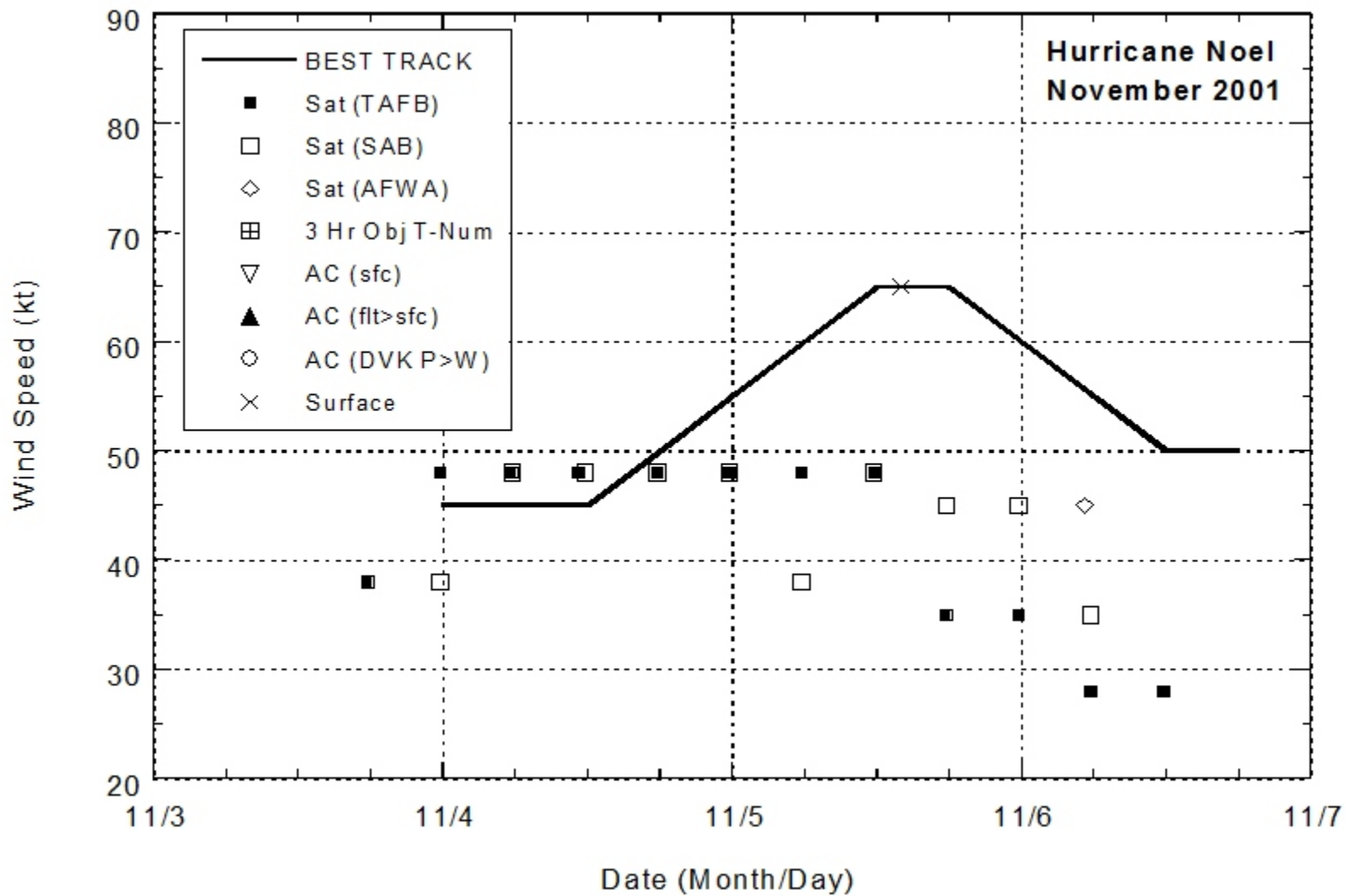


Figure 2. Selected wind observations and best track maximum sustained surface wind speed curve for Hurricane Noel, 4-6 November 2001. The peak intensity is based on a ship report of 65 kt at 1400 UTC 5 November (indicated by the “x”). Other marine observations contributing to the best track intensity are not shown here but are listed in Table 2.

