

Preliminary Report
Tropical Storm Kyle
11 - 12 October 1996

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Kyle was a small, short-lived tropical storm that formed over the northwestern Caribbean Sea in mid-October. It moved onshore near the border of Guatemala and Honduras as a weakening tropical depression and quickly dissipated. There were no significant effects on land associated with this system.

a. Synoptic History

Satellite imagery and rawinsonde data show that a tropical wave moved off the west coast of Africa on 27 September. The wave was tracked in satellite imagery to the Lesser Antilles on 5 October and to the western Caribbean Sea on the 9th where it interacted with a frontal cloud band. Surface analysis indicated a broad 1010 mb low over the northwest Caribbean Sea at 0000 UTC 11 October. At this time, anticyclonic flow aloft was seen in animation of satellite imagery above disorganized convective activity.

A well-defined convective cloud band developed and post-analysis suggests that a tropical depression formed from the disturbance near 1200 UTC 11 October while centered about midway between Swan Island and the coast of Belize (Fig. 1 and Table 1). Steering currents were weak and the depression began drifting toward the southwest.

The tropical cyclone quickly intensified and is estimated to have become a tropical storm at 1800 UTC on the 11th. A small central dense overcast was evident in satellite imagery by the time the first reconnaissance aircraft investigated the cyclone during the afternoon. Maximum sustained surface winds of 45 knots are estimated to have occurred from 1800 UTC on the 11th to 0000 UTC on the 12th. The minimum central pressure of 1001 mb occurred near this time.

Upper-level southwesterly shear soon increased, resulting in a decrease of the deep convection. It is estimated that Kyle weakened to a tropical depression by 1200 UTC

12 October. The center of the rapidly dissipating depression moved onshore near the border between Guatemala and Honduras six hours later.

b. Meteorological Statistics

Figures 2 and 3 show the curves of minimum central pressure and maximum one-minute wind speed, respectively, versus time, along with the observations on which they are based. The limited aircraft data on 11 October were supplied by the Hurricane Hunters of the U.S. Air Force Reserves. The satellite estimates were provided by the NESDIS Synoptic Analysis Branch, the TPC's Tropical Analysis and Forecast Branch and the Air Force Global Weather Center.

The maximum wind speed recorded from aircraft in Kyle was 49 knots from a flight level of 1500 feet at 1908 UTC 11 October. The minimum observed central pressure was 1001 mb at 2145 UTC on the 11th, and was extrapolated from 1500 feet.

Satellite estimates never exceeded T2.5 (35 knots) on the Dvorak scale.

c. Casualty and Damage Statistics

No reports of casualties or damages were received by the NHC.

d. Forecast and Warning Critique

Kyle was a tropical storm for less than 24 hours, so a meaningful quantitative evaluation of forecast accuracy could not be made.

Table 2 lists the watches and warnings issued or "recommended" during Kyle. The word recommended was used in NHC advisories due to the inability to communicate with Guatemala during the event.

Table 1. Best track, Tropical Storm Kyle, 11 - 12 October, 1996.

Date/Time (UTC)	Position		Pressure (mb)	Wind Speed (kt)	Stage
	Lat. (°N)	Lon. (°W)			
11/1200	17.3	86.5	1006	30	tropical depression
1800	16.9	87.1	1002	45	tropical storm
12/0000	16.6	87.5	1001	45	“
0600	16.3	87.8	1004	35	“
1200	16.0	88.1	1008	30	tropical depression
1800	15.7	88.4	1012	25	“
13/0000					dissipated

11/2100	16.7	87.4	1001	45	minimum pressure
12/0000	16.6	87.5	1001	45	“

Table 2. Watch and warning summary, Tropical Storm Kyle, October 1996.

Date/time (UTC)	Action	Location
11/2100	tropical storm warning	Felipe Carrillo Puerto, Mexico to Cabo Camaron, Honduras including Belize and adjacent islands (Guatemala section “recommended”)
11/2100	hurricane watch	Felipe Carrillo Puerto, Mexico to the Guatemala/Honduras border (Guatemala section “recommended”)
12/1200	hurricane watch discontinued	Felipe Carrillo Puerto, Mexico to the Guatemala/Honduras border
12/1500	tropical storm warning discontinued	Felipe Carrillo Puerto, Mexico to Cabo Camaron, Honduras including Belize and adjacent islands

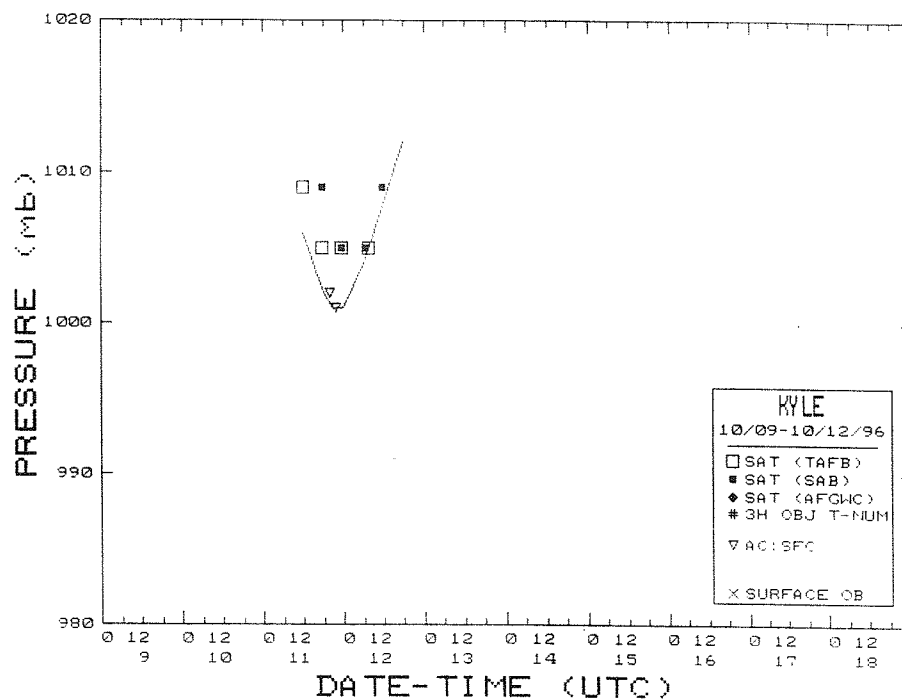


Figure 2. Best track minimum central pressure curve for Tropical Storm Kyle.

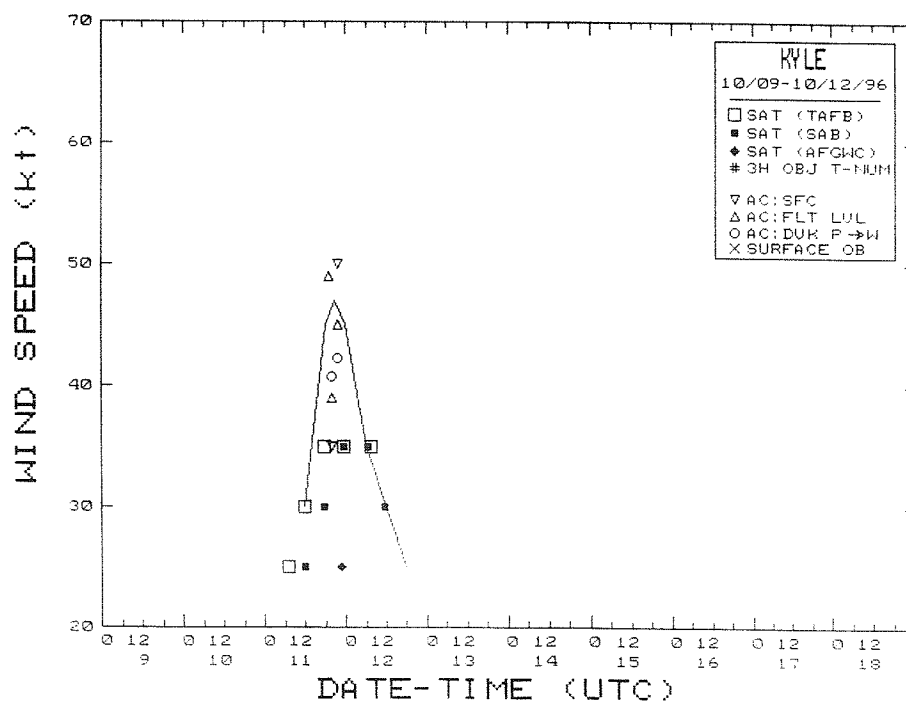


Figure 3. Best track maximum sustained wind speed curve for Tropical Storm Kyle.

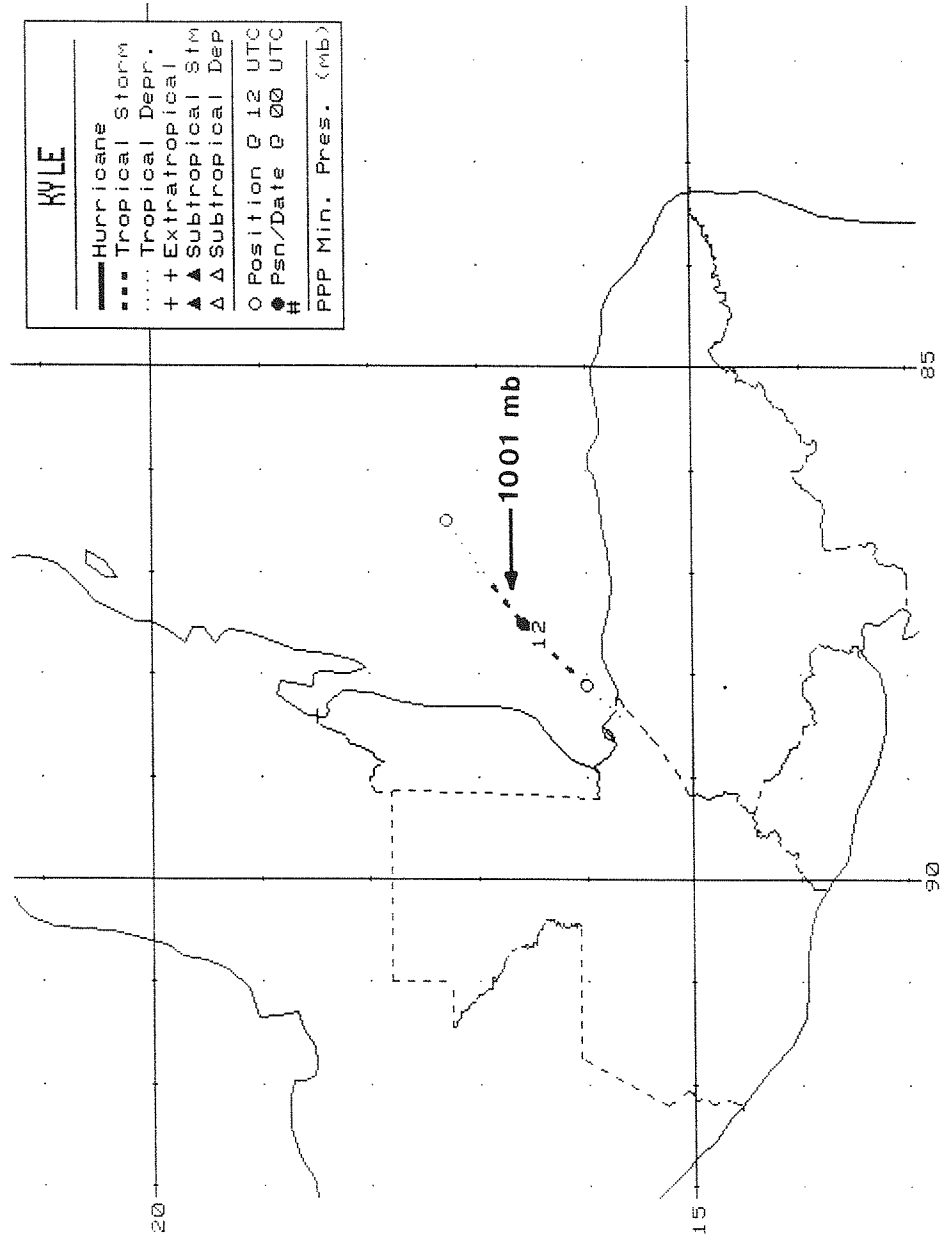


Figure 1. Best track positions for Tropical Storm Kyle, 11 - 12 October 1996.