



Synoptic Branch
Piarco International Airport
Piarco, Trinidad
Telephone: 669-4392
Fax: 669-4727
Email: synop@tstt.net.tt

The Impact of the 2006 Hurricane Season Operations for Trinidad and Tobago

Preamble

The official Atlantic Hurricane Season extends from June 1st to November 30th. Trinidad and Tobago lies on the southern fringe of the Atlantic Basin and there is empirical evidence to suggest that we can be struck by a tropical cyclone at any time during the hurricane season. Tobago though is more vulnerable despite the fact that it is only about 35 km to the northeast of Trinidad. Climatologically, the months of August and September are favored for tropical cyclone activity.

The 2006 Atlantic hurricane season has not been a very active season. Initial forecasts indicated that the Atlantic Hurricane Basin would experience 17 named storms, 9 to intensify into hurricanes of which 5 will become major hurricanes. To date, the basin experienced 9 named storms, 5 intensified into hurricanes and 3 out of these were major hurricanes. All tropical cyclones which formed in the Atlantic Basin passed to the north of Trinidad and Tobago, as such there were no direct impact from any cyclones, however spiral bands associated with the passage of Tropical Depression #5 (see satellite image attached) affected Trinidad and Tobago on the 24th and 25th August, producing minimal damage to properties, widespread flooding and adversely affected the agricultural industry in the central plains of Trinidad.

On the 12th of November an elliptically shaped convective cluster associated with a tropical wave produced torrential rainfall and storm-strength wind gusts over Tobago in particular and to a lesser extent Trinidad, which resulted in severe flash/street flooding in several parts of the Islands. There were also reports of minimal landslides/landslips along the Main Ridge of Tobago.

Several other severe weather episodes occurred over Trinidad and Tobago during the hurricane season and can be attributed to the passage of Tropical Waves and ITCZ dominance. Also, the passage of tropical cyclones well to the north of the Islands of the Eastern Caribbean, resulted in a breakdown of the low-mid level wind-field over Trinidad, temperatures soured in excess of 34 degrees Celsius at times, these conditions assisted in the development of west coast convection which produced flooding in Port-of-Spain and environs sporadically during the months of October and November.

Trinidad and Tobago Meteorological Service

Severe weather affecting Trinidad and Tobago during the hurricane season 2006

The first severe weather occurrence of the season occurred on the 27th of June, cloudy conditions associated with the ITCZ modulated by the passage of a low-level trough and encountering a favorable mid to upper level diffluent wind flow produced torrential rainfall over Trinidad which resulted in street and flash flooding. Floodwaters left some motorists in the Tunapuna and Trincity areas of Trinidad marooned and several residents in low-lying areas in distress. Rainfall measurements at Piarco for a 24-hour period ending at 2:00 pm were in excess of 45 mm.

The ITCZ under a divergent upper level wind pattern, flared up over Trinidad on the 11th of July, producing heavy showers accompanied by gusty winds, and a spectacular display of atmospheric electricity during the nighttime. Flooding occurred in several areas of Trinidad. Newspaper reports indicated that landslides/landslips occurred along the North Coast road as well as in the Malick area; there were also reports of fallen trees in these areas. The Caroni River overflowed its' banks leading to flooding in several areas along the Caroni River Basin.

The passage of a Tropical Wave over Trinidad on the 26th July enhanced by moderate to strong upper level speed diffluence assisted in the production of several thunderstorms over Trinidad, which produced torrential rainfall. Flash flooding occurred in Port of Spain and Chaguanas. Although there were no reports of any casualties' floodwaters left several residents and motorists in the affected areas marooned.

On the 24th of August, cloudy conditions associated with a tropical wave produced severe thundershowers over Trinidad. The ITCZ trailing behind the wave then produced widespread rainfall. Flooding occurred in several areas of Trinidad, there were reports of flooding along the Caparo and Caroni river Basins. The Tropical Wave intensified into Tropical Depression #5. Spiral bands associated with the passage of Tropical Depression #5 (see satellite image attached) affected Trinidad and Tobago on the 25th August, producing minimal damage to properties and widespread flooding that adversely affected the agricultural industry in the central plains of Trinidad.

The warm morning temperatures on September 04th coupled with light low level winds triggered deep convection that favored western areas of Trinidad. Torrential showers in Chaguanas, Couva and Port of Spain produced flash/street flooding which left both motorists and pedestrians stranded for at least 2 hours before subsiding. Flooding occurred along the southbound lane of the Solomon Hochoy highway causing massive vehicular traffic jams. Floodwaters quickly abated and fair conditions returned by nightfall.

The maximum temperature soared in excess of 34 degrees Celsius on the 07th of September; this extreme warming of the atmosphere together with light low-level winds

initiated west coast convection. Flash flooding occurred in Point Fortin, Felicity and Port-of-Spain along South Quay and left commuters stranded.

An oscillating upper level trough associated with an upper level low near 15N 50W provided a favorable diffluent pattern over Trinidad on the 13th of September. Convection associated with a surface trough was enhanced by this favorable wind flow and resulted in flash flooding in Chaguanas, St. Augustine and Curepe.

Temperatures reaching 34 degrees Celsius on the 20th of September together with light low-level winds and an abundance of moisture initiated west coast convection. Flash flooding occurred in Central Trinidad; reports reaching the Meteorological office indicate that a roof was blown off in the California area.

On the 29th of September, a caller from South Trinidad reported that he observed a Waterspout over the Gulf of Paria. Observations confirmed the existence of thunderstorms over Western Trinidad during the afternoon.

Cloudy conditions associated with a Tropical Wave with its axis along 59/60W on the 23rd October produced heavy showers and prolonged periods of rainfall. Newspaper reports indicate that an individual was electrocuted by a lightning strike while enjoying a game of football at the Queens' Park Savannah.

Coastlines of Trinidad and Tobago experienced unusually high waves from the 27th to 28th October. Strong low-level winds have been responsible for producing these sea conditions.

On the 12th of November an elliptically shaped convective cluster associated with a tropical wave produced torrential rainfall and storm-strength wind gusts over Tobago in particular and to a lesser extent Trinidad, which resulted in severe flash/street flooding in several parts of the Islands. There were also reports of minimal landslides/landslips along the Main Ridge of Tobago.

The entire week beginning the 13th November will be remembered as flash flood week in Trinidad. The entire west coast was affected with torrential rainfall favouring the central areas of North Trinidad on the 13th, northwest Trinidad on the 14th and 17th and western areas of Central and Southern Trinidad on the other days. Contributing factors were again light surface and low-level winds, warm temperatures (in excess of 33C) by late morning and an established divergent upper-level pattern. Interestingly, the extremely heavy precipitation began close to 11.00am on the 13th over the St. Augustine area and spread eastward. At Piarco 80mm of rainfall was recorded between 12noon and 2.00pm.

The heavy precipitation began during the early afternoon on the other days but started after 3.00pm on the 15th. It should be noted that areas along the east coast of Trinidad were not affected on these days, neither was Tobago. On the 14th and the 17th large limestone rocks came tumbling down onto homes and vehicles in the Diego Martin area.

Emmanuel Moolchan

Thanks to Mr. Shakeer Baig, Senior Meteorologist, for input into this report.
