



Tropical Cyclone Oscar (AAL162024)

Wind and Storm Surge

Preliminary Event Briefing

Turks and Caicos Islands Haiti

23 October 2024

1 SUMMARY

Tropical Cyclone Oscar is the sixteenth named cyclone and the tenth hurricane of the 2024 Atlantic Hurricane Season. On 19 October at 1500UTC, Oscar formed as a tropical storm while approaching the Turks and Caicos Islands. Three hours later, it was upgraded to a Category 1 hurricane and between 2100UTC and 0300UTC of 20 October, it passed in the vicinity of the Turks and Caicos Islands, spreading hurricane-force winds over part of the country and tropical-storm-force winds over the remainder. Oscar then moved towards Cuba, passing about 80 mi (134 km) northwest of Haiti, bringing tropical-storm-force winds in the vicinity of the coastal area of northwest Haiti. The hurricane subsequently made landfall on eastern Cuba and weakened to become a tropical storm.

The preliminary runs of the CCRIF tropical cyclone loss model for wind and storm surge have produced government losses for the Turks and Caicos Islands and Haiti (with CCRIF designating Oscar as a Loss Event¹). The government losses for these countries are below the Attachment Point of their Tropical Cyclone policies and therefore no payout under these policies is due.

Although there is a Disaster Alert declaration for the Turks and Caicos Islands from ReliefWeb (with code 52181) related to Hurricane Oscar, the Aggregated Deductible Cover (ADC)² feature for the Tropical Cyclone policy for the Turks and Caicos Islands has not been activated because the Modelled Losses are below 30% of the Attachment Point of the country's Tropical Cyclone policy. Therefore, no payout under the ADC feature is due for the Government of Turks and Caicos Islands. For Haiti, the Endorsement of Deductible Cover was not activated because the modelled loss amount was below the 30% of the Attachment Point. Therefore, no payout under the ADC feature is due for Haiti.

The Localized Damage Index (LDI) component of the TC SPHERA model did not identify this event as a localized event³. Therefore, no payout is due under the Localized Damage Index endorsement of the Tropical Cyclone policy for Turks and Caicos Islands or Haiti.

This event briefing is designed to review the modelled losses due to wind and storm surge calculated by CCRIF's tropical cyclone model for affected CCRIF member countries, to be analyzed with respect to members' Tropical Cyclone policies. At the time of writing this report, the Turks and Caicos Islands and Haiti were the only CCRIF member countries for which the CCRIF loss model for wind and storm surge produced government losses due to Tropical Cyclone Oscar.

¹ Any Tropical Cyclone event which produces a modelled loss greater than zero but lower than the policy Attachment Point (AP) in one or more policyholder countries.

² The ADC is activated if the modelled loss value is between 30% and 50% of a country's policy Attachment Point and a Disaster Alert is issued by ReliefWeb within 7 days after the event. The ADC can also be activated if the modelled loss value is between 50% of the Attachment point and the Attachment point of the country policy.

³ The LDI policy endorsement provides coverage for intense events that do not cause very large losses at a national scale but severely affect a relatively small part of a country. It is activated based on a Localized Index (LI), which compares the mean damage ratio computed for the most damaged areas and the mean damage ratio computed in the whole country. For an event to be covered by this endorsement the following conditions must be met:

- the TC local mean damage ratio computed for the local exposure must be greater than 1%
- the TC global mean damage ratio computed for the whole country must be greater than 0.06%.

A separate report on other CCRIF member countries affected by wind and storm surge, with respect to their Tropical Cyclone policies or rainfall impacts on affected CCRIF member countries will be issued if applicable.

2 INTRODUCTION

On 19 October 2024 at 1500UTC, the National Hurricane Center (NHC) reported that a tropical storm formed just southeast of the Turks and Caicos Islands, and it was named Oscar. The centre of the tropical cyclone was located near latitude 21.3° North and longitude 70.3° West, about 90 mi (144 km) southeast of the Turks and Caicos Islands. The cyclone was steered by a subtropical ridge to the north, maintaining a relatively steady forward motion westward at 13 mph (20 km/h).

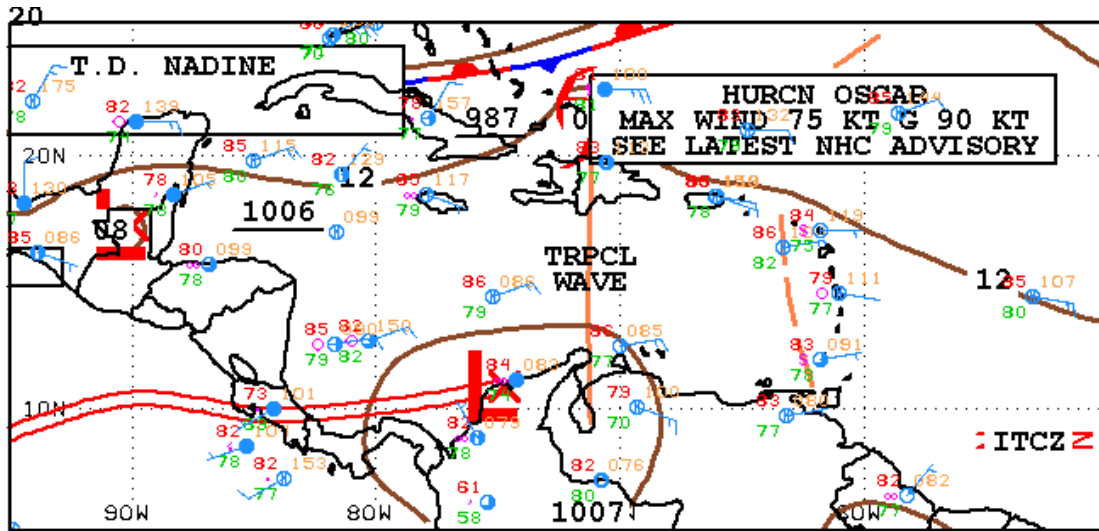
The development of the system was driven by very favourable atmospheric conditions, including low wind shear and warm sea surface temperatures. Thus, only three hours later at 1800 UTC, TC Oscar was upgraded to a Category 1 hurricane with maximum sustained winds of 80 mph (129 km/h) and a small but well-defined eye structure. At this time, tropical storm-force winds began affecting the southeastern coast of the Turks and Caicos Islands.

On 20 October at 0000 UTC, the centre of Hurricane Oscar was located approximately 35 mi (55 km) west-southwest of Grand Turk Island, near latitude 21.3° North and longitude 71.6° West (Figure 1). The compact but intense hurricane visible in the satellite imagery (Figure 2) had maximum sustained winds of 85 mph (140 km/h) and was tracking west at 10 mph (17 km/h). By 0300 UTC, Oscar had moved south of the Turks and Caicos Islands, with its centre near latitude 21.3° North and longitude 72.2° West, about 70 mi (115 km) W of Grand Turk.

Between 0000 UTC and 0300 UTC, hurricane-strength winds were observed over parts of the Turks and Caicos Islands, as seen on the wind maps shown in Figure 3. Tropical-storm-force winds were detected earlier, between 2100 UTC on 19 October and 1200 UTC on 20 October. Despite the compact size, with hurricane-force winds extending only 5 mi (10 km) from the centre and tropical-storm-force winds reaching up to 45 mi (75 km), it posed a considerable threat to the area.

Throughout the rest of the day, Hurricane Oscar maintained almost unvaried intensity, while moving west-southwestward. Between 0900UTC and 1500UTC, the hurricane centre passed about 80 mi (134km) northwest of Haiti, heading towards Cuba. During this time, tropical-storm-force winds affected the northwestern coast of Haiti and the surrounding waters. At 2150UTC, Hurricane Oscar made landfall over the northern coast of eastern Cuba.

On 21 October, while passing inland over Cuba the hurricane rapidly weakened and became a tropical storm. It then moved west-northwestward and later north-northeastward, heading towards The Bahamas.



00Z CARIBBEAN SURFACE ANALYSIS
ISSUED:
Sun Oct 20 02:54:09 UTC 2024

NATIONAL HURRICANE CENTER
MIAMI, FLORIDA
BY TAFB ANALYST: KRV
COLLABORATING CENTERS: NHC OPC

Figure 1 Surface analysis over the Caribbean area on 20 October 2024 at 0000 UTC. Source: US National Hurricane Center⁴

⁴ National Oceanic and Atmospheric Administration - FTP, National Hurricane Center, review date: 20 October 2024, available at: https://www.nhc.noaa.gov/tafb/CAR_00_Z.gif

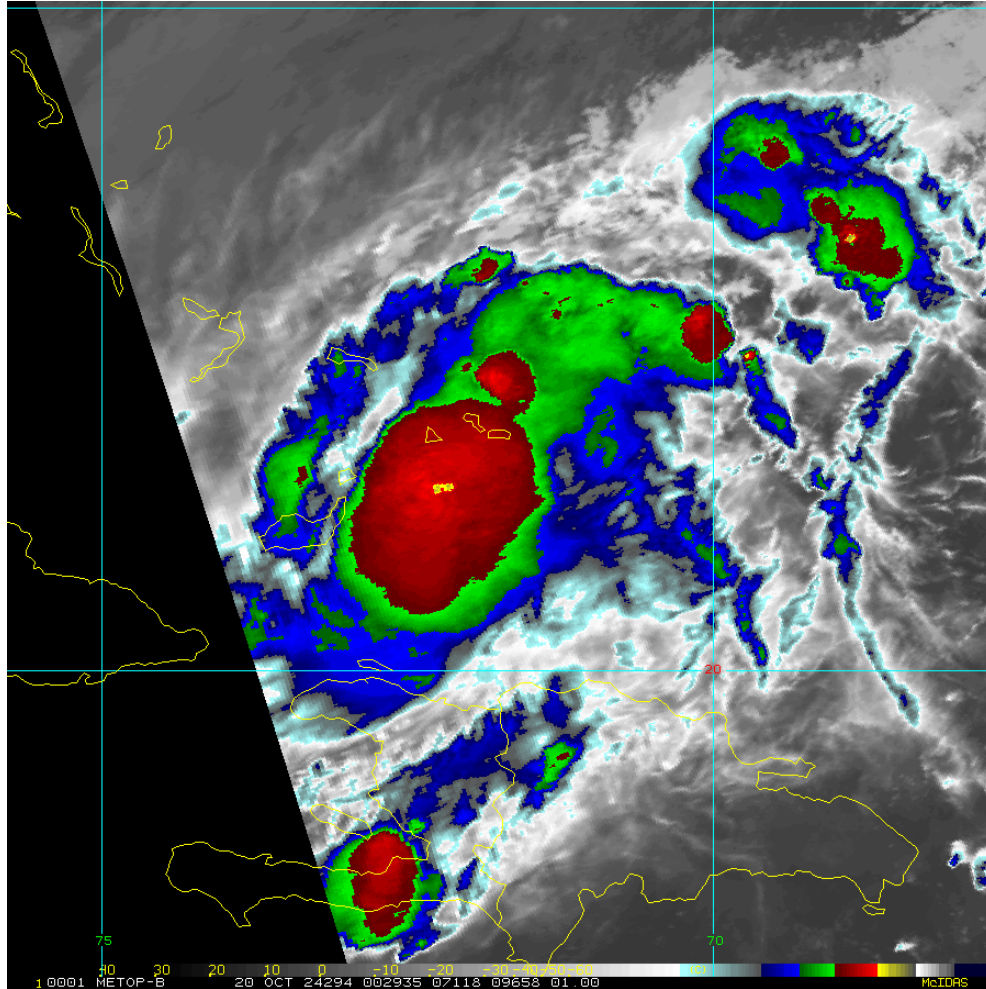


Figure 2 Satellite imagery on 20 October, 2024 at 0029 UTC from the thermal infrared channel enhanced with colour. Blue/green colours represent high altitude clouds (top cloud temperature between -50°C and -70°C), while the red/yellow colours represent very high altitude clouds (top cloud lower than -70°C). High altitude clouds indicate strong convection associated with intense precipitation. Source: NOAA, National Environmental Satellite, Data and Information Service⁵.

⁵ RAMSDIS Online Archive, NOAA Satellite and Information Service, available at: https://rammb-data.cira.colostate.edu/tc_realtime/storm.asp?storm_identifier=all62024

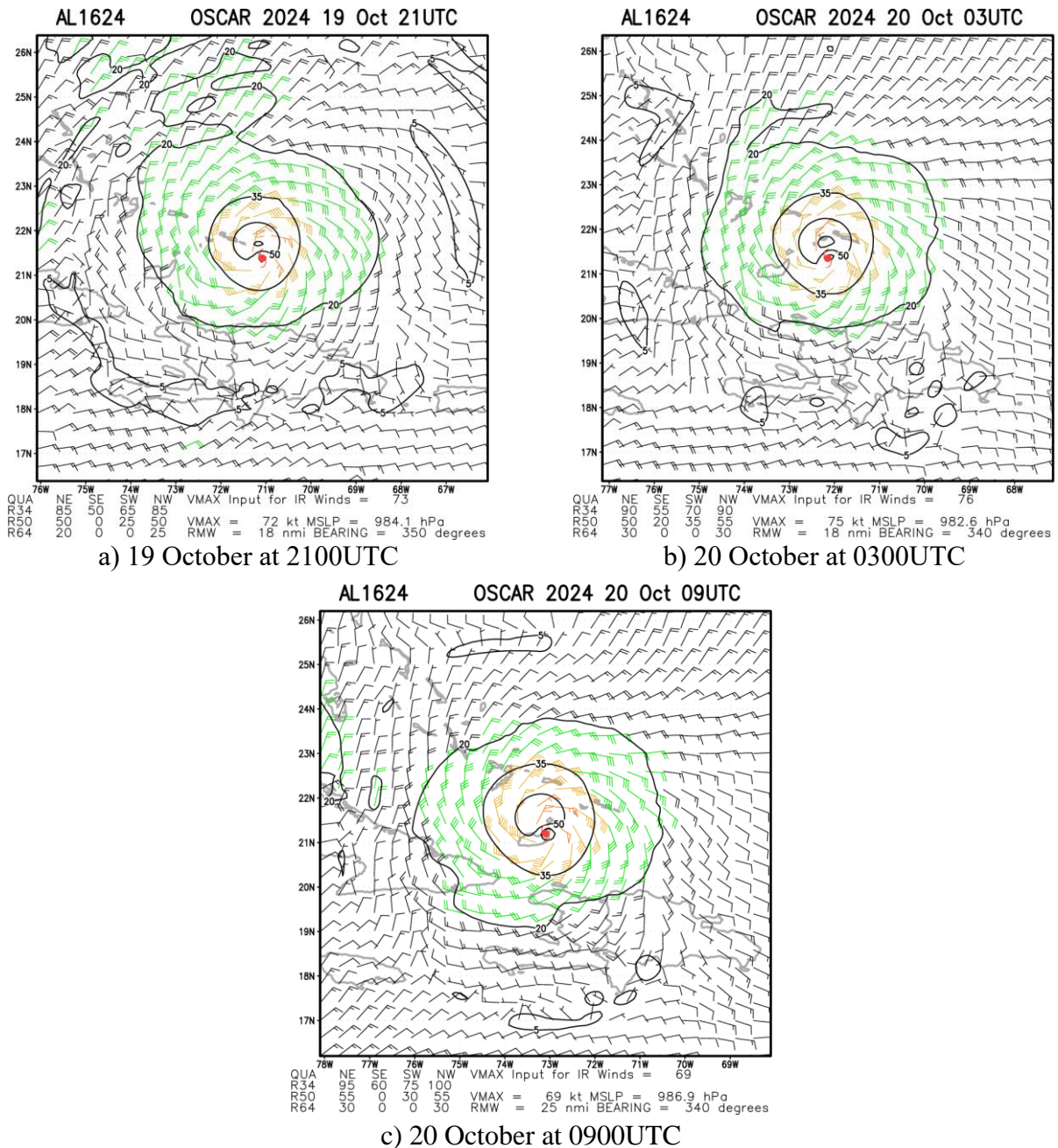


Figure 3 Multi-platform satellite based tropical cyclone surface wind analysis estimated on 19 and 20 October, 2024 at different times as indicated by the labels. Contouring indicates wind intensity at 20 kn (23 mph, 37 km/h), at 35 kn (40 mph, 65 km/h), 50 kn (57mph, 93 km/h) and 65 kn (74mph, 120 km/h). Source: NOAA, National Environmental Satellite, Data and Information Service⁶

⁶ RAMSDIS Online Archive, NOAA Satellite and Information Service, available at: https://rammb-data.cira.colostate.edu/tc_realtime/storm.asp?storm_identifier=al162024

3 CCRIF SPC MODEL OUTPUTS

Under CCRIF’s loss calculation protocol, a CCRIF System for Probabilistic Hazard Evaluation and Risk Assessment (SPHERA) report is required for any tropical cyclone affecting at least one member country with winds greater than 39 mph (62.7 km/h). The Turks and Caicos Islands and Haiti were affected by Tropical Cyclone Oscar, which was designated by CCRIF as a Loss Event⁷.

The wind footprint is one of the outputs from CCRIF’s SPHERA model for tropical cyclones. Figure 4 shows the wind footprint for the areas affected by Tropical Cyclone Oscar.

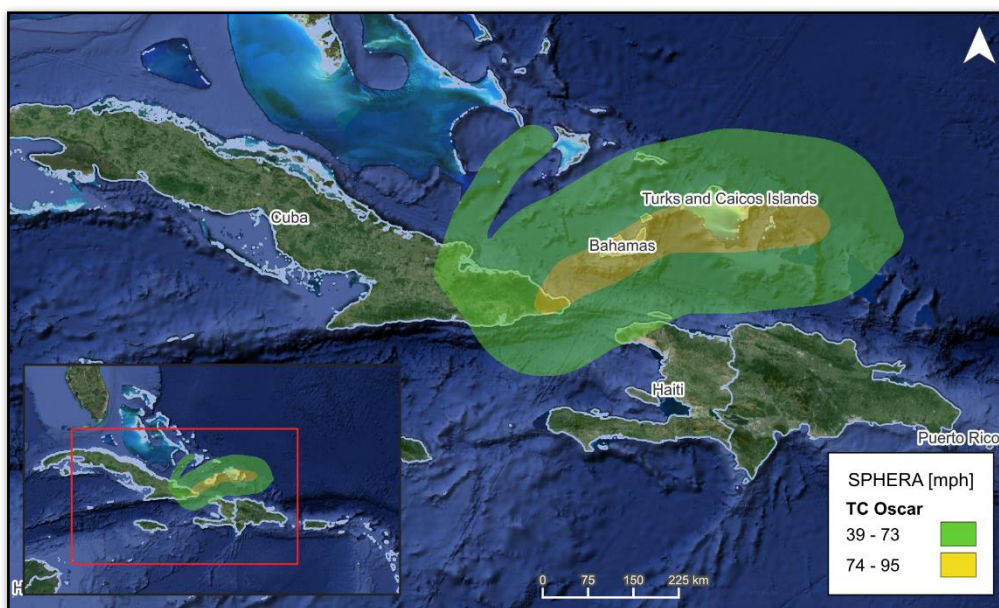


Figure 4 Map showing the wind field associated with Tropical Cyclone Oscar over Haiti and Turks and Caicos. Source: NHC & CCRIF/SPHERA

4 REPORTED IMPACTS

At the time of writing this report, the information on damage in the Caribbean countries due to Tropical Storm Oscar is limited.

On October 19, 2024, around 3 pm, the Turks and Caicos Islands Airports Authority (TCIAA) announced the closure of three major airports, due to the approaching of Hurricane Oscar.⁸

Later that night, Tropical Storm Oscar made landfall, with heavy rainfall and thunderstorms⁹.

⁷ Any Tropical Cyclone event which produces a modelled loss greater than zero in one or more policyholder countries.

⁸ Caribbean Loop News: [Turks and Caicos close major airports as Hurricane Oscar approaches | Loop Caribbean News](#)

⁹ Turks and Caicos Islands National Weather Service Facebook page: [Facebook](#)

5 CCRIF LOSS MODEL

The preliminary runs of the CCRIF tropical cyclone loss model for wind and storm surge produced government losses for the Turks and Caicos Islands and Haiti. However, the government losses were below the Attachment Point of each country's Tropical Cyclone policy. Therefore, no payout under this policy is due.

Although there is a Disaster Alert declaration for the Turks and Caicos Islands from ReliefWeb (with code 52181) related to Hurricane Oscar, the Aggregated Deductible Cover (ADC) feature for the Tropical Cyclone policy for the Turks and Caicos Islands has not been activated because the Modelled Losses are below 30% of the Attachment Point of the country's Tropical Cyclone policy. Therefore, no payout under the ADC feature is due for the Government of Turks and Caicos Islands.

The Localized Damage Index (LDI) component of the TC SPHERA model did not identify this event as a localized event¹⁰. Therefore, no payout is due under the LDI endorsement of the Tropical Cyclone policy for the Turks and Caicos Islands or Haiti.

For additional information, please contact CCRIF SPC at: pr@ccrif.org

¹⁰ The LDI policy endorsement provides coverage for intense events that do not cause very large losses at a national scale but severely affect a relatively small part of a country. It is activated based on a Localized Index (LI), which compares the mean damage ratio computed for the most damaged areas and the mean damage ratio computed in the whole country. For an event to be covered by this endorsement the following conditions must be met:

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