CCRIF SPC
The Caribbean Catastrophe Risk Insurance Facility

Tropical Cyclone Melissa (AAL132025)

Wind and Storm Surge

Preliminary Event Briefing

The Bahamas – Central
The Bahamas – South East

03 November 2025

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1 SUMMARY

Tropical Cyclone Melissa is the thirteenth named cyclone and the fifth hurricane of the 2025 Atlantic Hurricane Season. On 29–30 October 2025, Hurricane Melissa moved across the Atlantic waters north of Cuba, with its intensity fluctuating between Category 2 and Category 3. During this period, marginally favourable environmental conditions allowed the system to re-intensify after the weakening caused by its interaction with the high terrain of Cuba and Jamaica. Tropical-storm-force winds affected most of the southern and central islands of The Bahamas for approximately 18 hours, from 1500 UTC on 29 October to 0900 UTC on 30 October. Hurricane-force winds impacted only limited areas of The Bahamas, mainly as gusty winds, particularly over the northern part of Long Island around 0000 UTC on 30 October.

The preliminary runs of the CCRIF tropical cyclone loss model for wind and storm surge produced government losses for The Bahamas-Central and The Bahamas-South East due to Tropical Cyclone Melissa, and therefore Melissa is designated as a Loss Event[1] for The Bahamas-South East and The Bahamas-Central. The Bahamas-Central and The Bahamas-South East were the only Tropical Cyclone policies for The Bahamas[2] that had government losses due to Tropical Cyclone Melissa. The government losses for The Bahamas-Central and The Bahamas-South East are below the Attachment Points of these Tropical Cyclone policies and therefore no payouts under these policies are due to the Government of The Bahamas.

The Aggregate Deductible Cover (ADC)[3] endorsement of the Tropical Cyclone policies for The Bahamas-Central and The Bahamas-South East was not activated, as the conditions required for triggering a payment were not satisfied. Therefore, no ADC payment is due.

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. Jamaica was the only other CCRIF member country for which the CCRIF loss model for wind and storm surge produced government losses due to Tropical Cyclone Melissa at the time of writing this report. A report on the modelled losses due to wind and storm surge for Jamaica was issued previously. A separate report on other CCRIF member countries affected by wind and storm surge, with respect to their Tropical Cyclone policies or will be issued if applicable. Reports on rainfall impacts on affected CCRIF member countries have been issued.

[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 Bahamas has three Tropical Cyclone policies: The Bahamas – Southeast, The Bahamas - Central, The Bahamas - Northwest

[3] 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.

2 INTRODUCTION

Tropical Cyclone Melissa originated on 21 October over the central Caribbean Sea. After remaining nearly stationary for three days as a tropical storm, it began to intensify rapidly on 25 October, reaching Category 5 hurricane strength by 27 October—in less than two days. During this period of rapid intensification, Melissa moved slowly westward, tracking almost parallel to the southern coast of Jamaica. On 28 October, Melissa turned northeastward and made landfall along Jamaica's southwestern coast, bringing hurricane-force winds to western Jamaica. After briefly weakening while crossing the island, it reorganized and made a second landfall over eastern Cuba on 29 October at 0710 UTC.

Interaction with Cuba's rugged terrain caused the cyclone to weaken; thus, when its centre re-emerged off the island's northern coast at 1500 UTC, Melissa had weakened to a Category 3 hurricane, with maximum sustained winds estimated at 100 mph (155 km/h) and a minimum central pressure of 965 mb. At that time, Melissa's centre was located near 21.4°N, 75.6°W, about 120 mi (192 km) south-southwest of Long Island, The Bahamas (Figure 1).

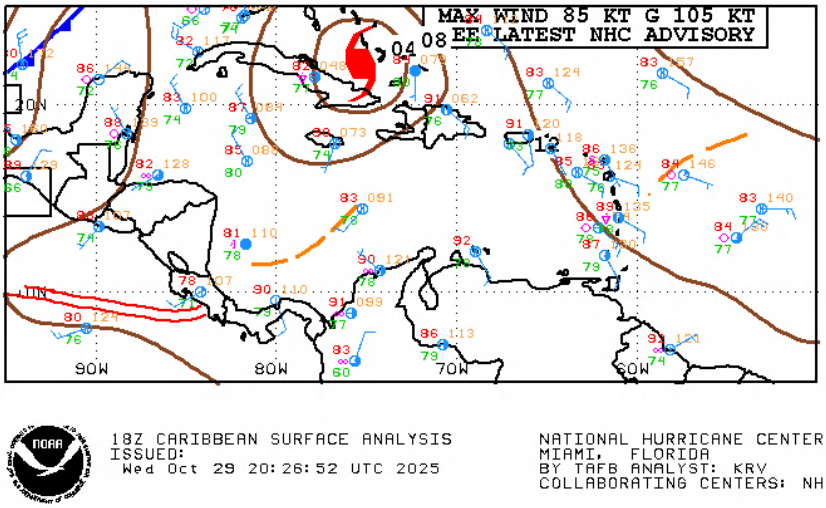


Figure 1 Surface analysis over the Caribbean area on 29 October at 1800UTC. Source: US National Hurricane centre[4]

Satellite imagery showed that the previously well-defined convective ring surrounding the eye had become disorganized and weaker (Figure 2a). The small, well-defined eye that characterized Melissa in previous days had dissipated, and a broader core structure was forming (Figure 2a). This transition led to a significant expansion of the area affected by the most intense tropical-storm-force winds (those greater than 58 mph / 92 km/h), especially on the hurricane's eastern side. On average, tropical-storm-force winds extended outward up to 185 mi (295 km) from the centre, while hurricane-force winds reached up to 40 mi (65 km). At this stage, tropical-storm-

[4] National Oceanic and Atmospheric Administration - FTP, National Hurricane centre, review date: 29 October 2025, available at: *https://www.nhc.noaa.gov/tafb /CAR18Z.gif*

force winds began affecting the southeastern and central Bahamas as Melissa accelerated northeastward toward the southern and central islands of the archipelago.

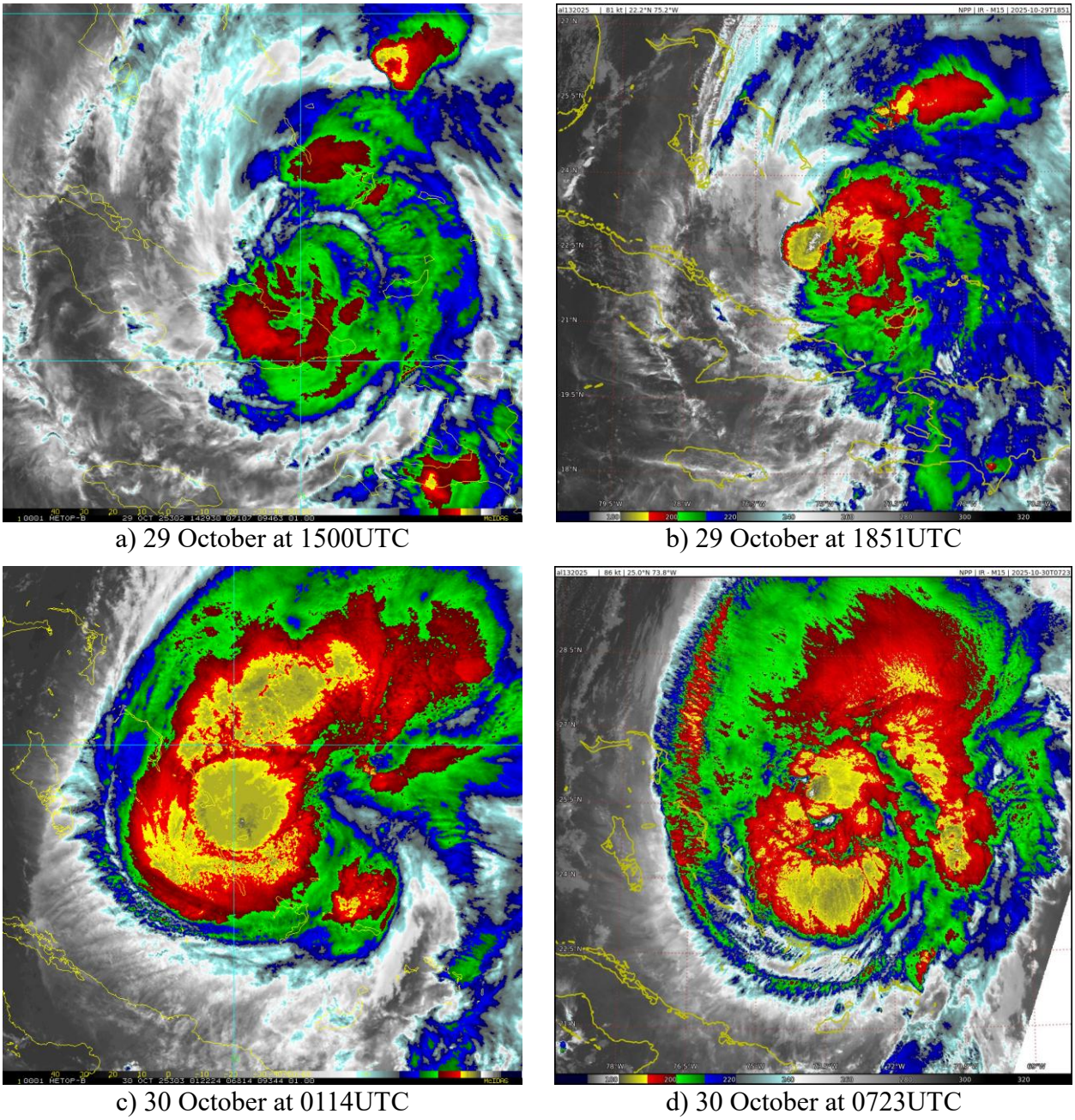
Over the adjacent Atlantic waters, sea-surface temperatures of 27–28°C remained warm enough to support renewed intensification. Although vertical wind shear began to increase, it was aligned with the hurricane's forward motion, allowing convection to redevelop and wrap gradually around the circulation.

By 1800 UTC, Melissa's centre was located near 22.1°N, 75.3°W, about 70 mi (113 km) south-southwest of Long Island. Satellite imagery indicated that convection was redeveloping in the northwestern quadrant—on the upshear side of the hurricane—and starting to wrap around the centre (Figure 2b). Wind analyses showed that tropical-storm-force winds persisted across much of the southern and central Bahamas, with stronger winds affecting the western portions of Acklins and Mayaguana Islands and the southern part of Long Island. These areas remained under the influence of the stronger winds on the eastern flank of the hurricane (Figure 3a).

Six hours later, at 0000 UTC on 30 October, Melissa was centred near 23.5°N, 74.8°W, about 30 mi (48 km) north-northeast of Long Island. The storm displayed a large convective core near the centre, elongated from northeast to southwest due to southwesterly wind shear (Figure 2c). Maximum sustained winds had decreased slightly to 90 mph (150 km/h), making Melissa a Category 2 hurricane. Wind analysis maps showed an expanded eyewall, with an eye diameter of about 46 mi (74 km) (Figure 3b). Hurricane-force winds were mainly confined to the northwestern quadrant, affecting northern Long Island, while tropical-storm-force winds persisted across the central and southern Bahamas—from Cat Island and Great Exuma in the north to Acklins in the south (Figure 3b).

Over the following six hours, Melissa continued to strengthen and accelerate northeastward. By 0600 UTC, it had regained Category 3 status, with maximum sustained winds of 100 mph (155 km/h). Satellite imagery revealed extensive convective rainbands fully encircling the centre and signs of a developing cloud-free eye (Figure 2d). At that time, Melissa's centre was located near 24.8°N, 73.9°W, about 130 mi (210 km) northeast of Long Island. Hurricane-force winds extended outward up to 60 mi (95 km) from the centre and had ceased over all Bahamian territory, though tropical-storm-force winds—reaching up to 185 mi (295 km)—still affected much of the central and southern Bahamas, from Eleuthera in the north to Little Inagua in the south. Within the next three hours, these winds also subsided as the hurricane moved farther away.

For the remainder of the day, Melissa continued to re-intensify. However, by 31 October, decreasing sea-surface temperatures and a marked increase in vertical wind shear prompted Melissa's transition into an extratropical system, over the northwest Atlantic Ocean.



a) 29 October at 1500UTC

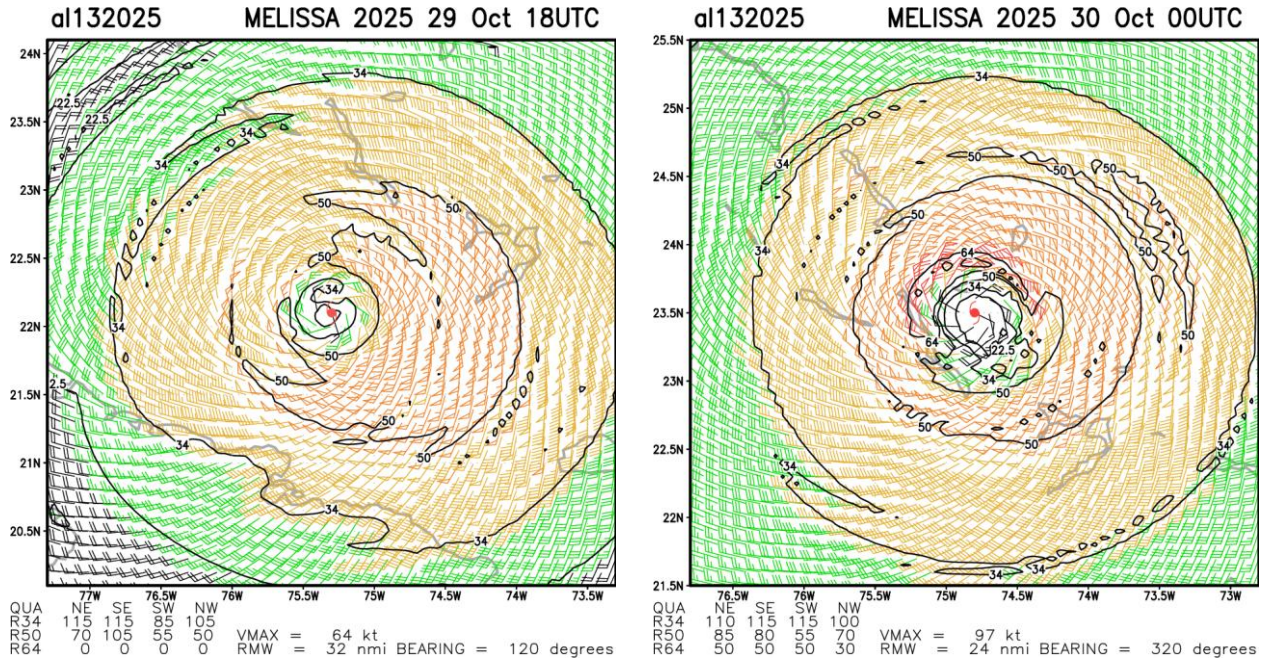
b) 29 October at 1851UTC

c) 30 October at 0114UTC

d) 30 October at 0723UTC

Figure 2 Satellite imagery from 25 to 29 October, 2025 at different times as indicated by the labels 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 Service[5].

[5] RAMSDIS Online Archive, NOAA Satellite and Information Service, available at: https://rammb-data.cira.colostate.edu/tc_realtime/storm.asp?storm_identifier=al132025



a) 29 October at 1800UTC b) 30 October at 0000UTC

Figure 3 Tropical cyclone surface wind analysis obtained by combining the existing satellite-based surface wind analysis and aircraft reconnaissance data estimated on 29 and 30 October, 2025 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), 65 kn (74mph, 120km/h) and 80 kn (92mph, 148km/h). Source: NOAA, National Environmental Satellite, Data and Information Service[6]

3 CCRIF SPC MODEL OUTPUTS

A CCRIF System for Probabilistic Hazard Evaluation and Risk Assessment (SPHERA) report is issued for any tropical cyclone affecting at least one member country with winds greater than 39 mph (62.7 km/h). Jamaica and The Bahamas were affected by Tropical Cyclone Melissa. A report for Melissa's impacts on Jamaica was previously issued. The Bahamas – Central and The Bahamas – South East were the only Tropical Cyclone policies for The Bahamas [7], which had government losses due to Tropical Cyclone Melissa, qualified as a Loss Event for both of these policies.[8]

The wind footprint is one of the outputs from CCRIF´s model. Figure 4 shows the wind footprint for the regions affected by Tropical Cyclone Melissa.

[6] RAMSDIS Online Archive, NOAA Satellite and Information Service, available at: https://rammb-data.cira.colostate.edu/tc_realtime/storm.asp?storm_identifier=al132025

[7] The Bahamas has three Tropical Cyclone policies: The Bahamas – South East, The Bahamas - Central, The Bahamas - Northwest

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

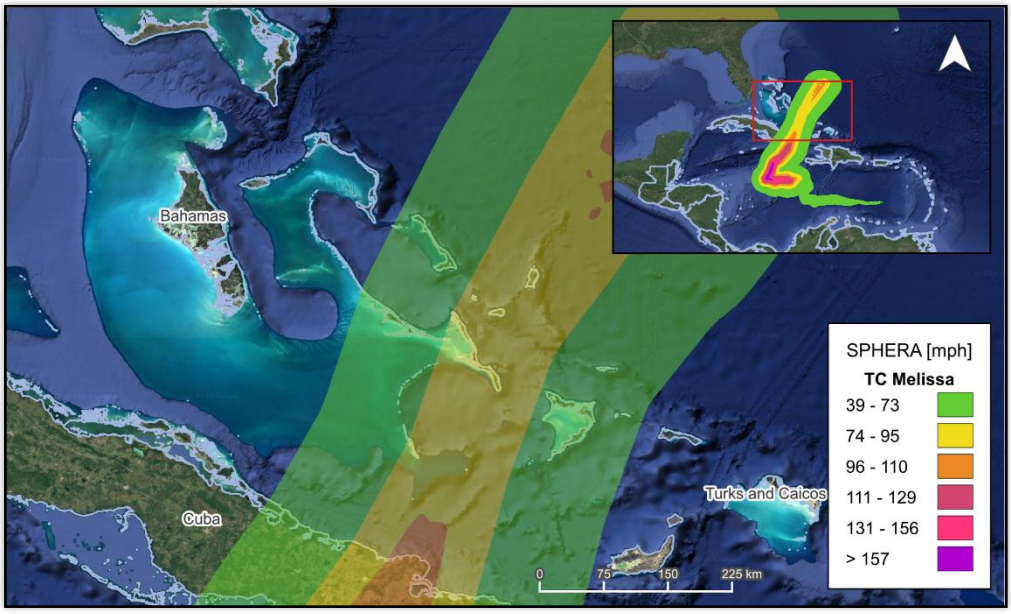


Figure 4 Map showing the wind field associated with Tropical Cyclone Melissa around The Bahamas Islands. Source: NHC & CCRIF/SPHERA

4 REPORTED IMPACTS

By 31 October, the Disaster Risk Management Authority (DRM) of The Bahamas had officially issued an all-clear for the southeastern and central islands following Hurricane Melissa. All previous warnings in place were discontinued.[9] As a result, shelters were deactivated and evacuees returned to their homes.

By October 31, Rapid Assessment teams were actively conducting damage and sectoral assessments, with completion expected by Tuesday, November 4, 2025. Utility companies were mobilized and working to restore power, water, and telecommunications across the islands. Road clearance efforts led to the reopening of several roads, and thirty-two of the thirty-three clinics that were closed ahead of Hurricane Melissa resumed operations. However, flooding remained in some low-lying areas. There was minor roof damage reported, and emergency supplies, including tarpaulins, were distributed to affected households in Acklins Islands, Inagua, Exuma, San Salvador, Ragged Island, Crooked Island, and Rum Cays. Additionally, fourteen of the fifteen closed airstrips reopened[10].

5 TRIGGER POTENTIAL

The preliminary runs of the CCRIF tropical cyclone loss model for wind and storm surge produced government losses for The Bahamas-Central and The Bahamas-South East due to

[9] IOM Caribbean: Hurricane Melissa

[10] Hurricane Melissa Haiti and Jamaica situation report no. 5

Tropical Cyclone Melissa [11]. However, the losses were below the Attachment Points of these Tropical Cyclone policies and therefore no payouts under these policies are due to the Government of The Bahamas.

The Aggregate Deductible Cover (ADC) endorsement of the Tropical Cyclone policies for The Bahamas-Central and The Bahamas-South East was not activated, as the conditions required for triggering a payment were not satisfied. Therefore, no ADC payment is due.

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

[11] The Bahamas has three Tropical Cyclone policies: The Bahamas – South East, The Bahamas - Central, The Bahamas - Northwest