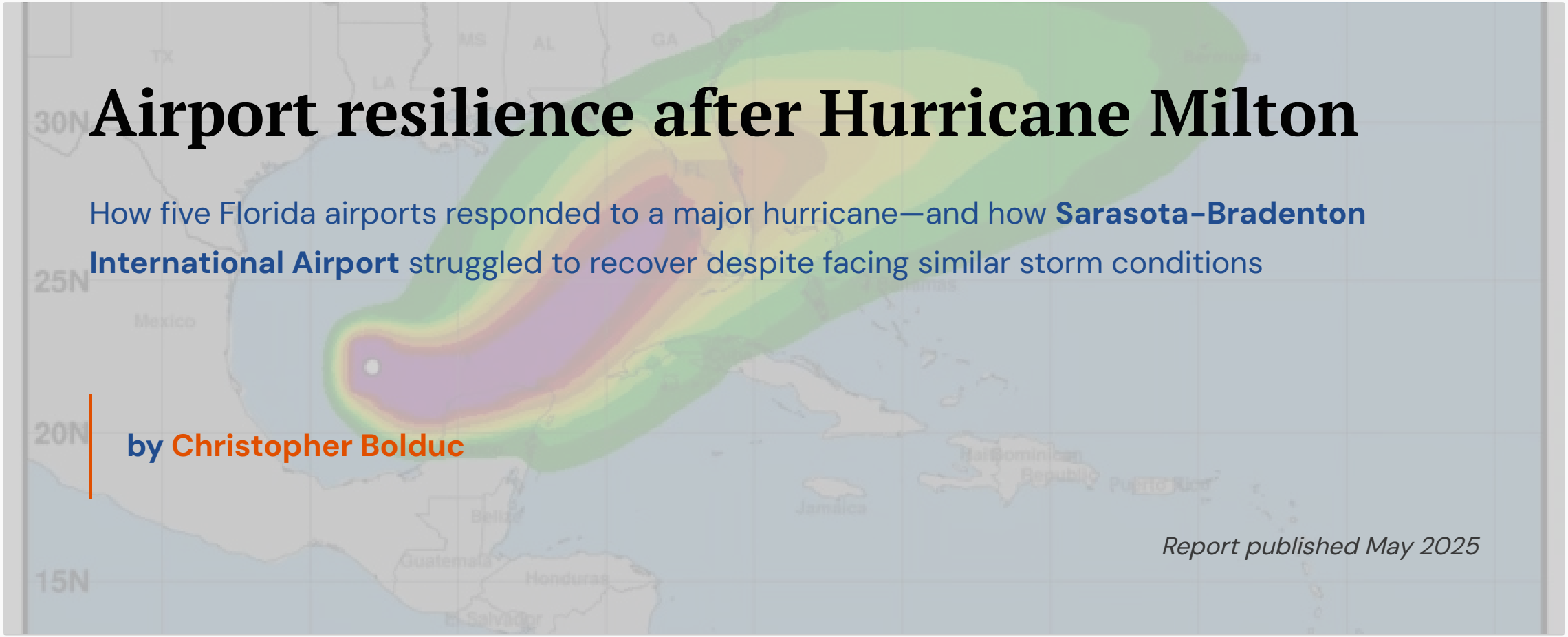



# Airport resilience after Hurricane Milton

How five Florida airports responded to a major hurricane—and how **Sarasota-Bradenton International Airport** struggled to recover despite facing similar storm conditions

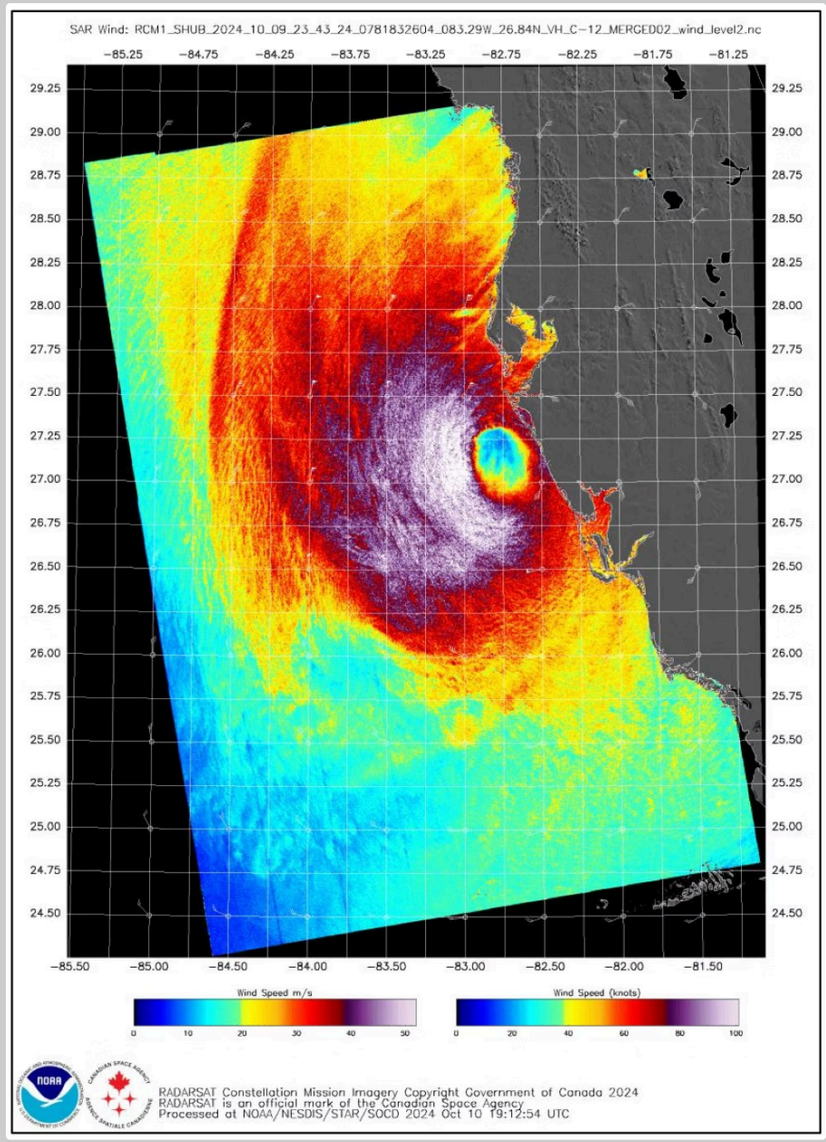
by Christopher Bolduc

*Report published May 2025*

# Why this matters

- In October 2024, Hurricane Milton made landfall on Florida's Gulf Coast with **winds exceeding 100 mph**.
- The storm triggered **hundreds of flight cancellations** and **multiple airport closures** across the state.
- Five airports were placed in the **official hurricane warning zone**:
    - Daytona Beach International Airport (**DAB**)
    - Orlando International Airport (**MCO**)
    - Tampa International Airport (**TPA**)
    - St. Pete-Clearwater International Airport (**PIE**)
    - Sarasota-Bradenton International Airport (**SRQ**)

> **This study investigates how quickly these airports recovered—and whether their responses matched the scale of the storm they faced.**




**Surface wind estimates from Hurricane Milton shortly before landfall**

Captured by RADARSAT (RCM-1) at 2343 UTC on Oct 9, 2024.

*Image courtesy of NOAA/NESDIS and the Canadian Space Agency*

# SRQ suffers major structural damage

**Florida airport suffers loss of entire concourse roof from Milton's 102-mph winds, will remain closed for days**

*Fox Weather - Oct 11, 2024*

**Sarasota–Bradenton International Airport** (**SRQ**) experienced the worst structural damage of any airport in the hurricane warning zone. The storm **ripped off the entire roof** of Concourse B, which housed 13 gates and the main TSA checkpoint.

As a result, **SRQ remained fully closed for seven days**, with no departing flights between October 9th and 15th.

Limited operations resumed on October 16th, and full recovery was achieved on October 17th—**eight days after landfall**.

## This raises a key question:

> **Was SRQ's prolonged shutdown simply a matter of storm severity—or was it a sign of operational failure?**

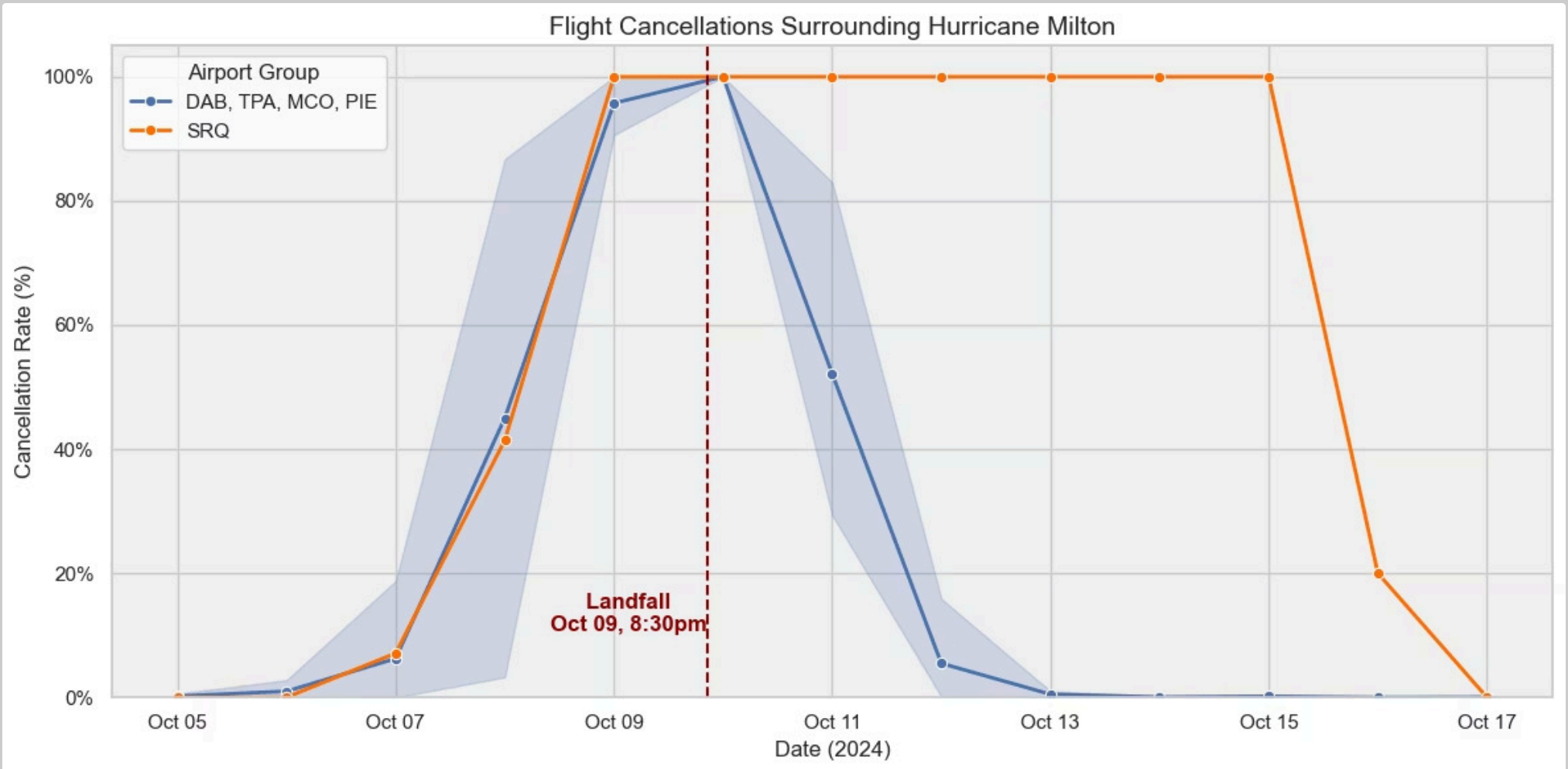

**Following roof damage and flooding, cleanup was required in gate areas**

*Image courtesy of Sarasota Bradenton International Airport*

# Understanding airport resilience after Hurricane Milton

Can we define and compare **airport resilience** in a way that accounts for both **storm severity** and **operational response**?

The chart below tracks **daily flight cancellations** across all five airports before, during, and after the hurricane. It offers our first real glimpse into **how each airport weathered the disruption and began to recover.**



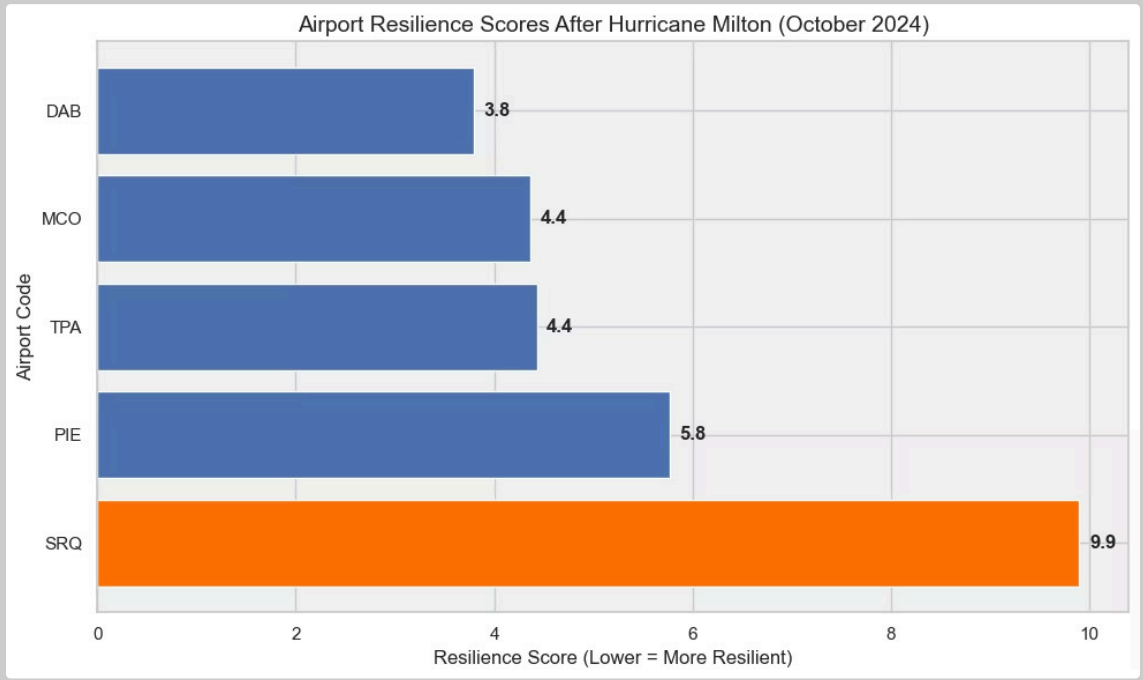

**Key Takeaways:**

- **SRQ** experienced 100% cancellations for **seven days**.
- **DAB**, **TPA**, **MCO**, and **PIE** returned to near-normal within **three to four days**.

# How was resilience measured?

I created a composite **resilience score** for each airport based on three factors:

1. **Days to recovery** — how many days it took for flight activity to normalize
2. **Cancellation rate** — total % of flights cancelled in October scaled x 10 to match the range of recovery days
3. **Peak wind speed** — highest hourly average wind speed, square root scaled to reflect storm intensity without overemphasizing outliers




The final **resilience score** rewards fast recovery and penalizes excessive cancellations —but also **gives credit to airports that faced stronger storm conditions**.

▼ **Code** (**resilience score**)

```
resilience_score = (
  (days_to_recovery + (pct_cancelled_oct * 10)) /
  (peak_wind_speed_kmh ** 0.5 / 10)
)
```

***Lower score = faster, more resilient recovery***

> **Key Takeaways:**
> • **SRQ** had the highest (**worst**) **resilience score**, even after adjusting for wind severity, due to its **eight-day recovery timeline**, and the **highest cancellation rate** among the five airports.
> • **DAB** achieved the lowest (**best**) **resilience score**, recovering in just **three days**—the fastest turnaround—despite facing the **second-highest peak wind speed**, just behind **SRQ**.

# Final Analysis

## SRQ faced challenges—but not all were meteorological

**SRQ** endured the highest sustained winds and significant structural damage—a valid and serious disruption. But even adjusting for storm severity, **SRQ**'s recovery lagged **well behind its peers**. The data suggests that infrastructure damage alone **doesn't explain the extended closure**. Other factors—like emergency planning, staffing, or logistical coordination—likely played a critical role in shaping **SRQ**'s slower return to normal operations.

**SRQ suffered major structural damage from Hurricane Milton**
*Image courtesy of Sarasota Bradenton International Airport*

**Debris from the damaged roof covered the aircraft ramp**
*Image courtesy of Sarasota Bradenton International Airport*

> **Enduring the storm isn't enough—resilience requires a rapid, coordinated response.**