



# Launch Mission Execution Forecast

**Mission:** Falcon 9 CRS-33

**Issued:** 22 Aug 2025 / 1500L (1900Z)

**Valid:** 24 Aug 2025 / 0235-0255L (0635-0655Z)



**Forecast Discussion:** Following the passage of Hurricane Erin, a surface low is developing off the South Carolina and Georgia coasts today. This development will enhance deep westerly flow over the spaceport, contributing to diurnal showers and thunderstorm activity during the afternoon hours on Friday and Saturday. This synoptic pattern is expected to persist through Sunday evening, at which time a weak northerly wind shift in the mid-levels should introduce drier air and more favorable conditions for the tertiary launch opportunity on Tuesday morning, if required.

For the primary launch window, potential violations of the Cumulus Cloud Rule and Lightning Rule remain the primary concerns. Diurnal stabilization should suppress inland convection overnight; however, a slight risk of isolated offshore thunderstorms will continue into the early morning hours. Vertical wind shear is anticipated to be very weak, with westerly flow aloft advecting offshore anvil development eastward, away from the spaceport. Surface winds are expected to be from the southwest at 12-18 mph. The continued westerly flow and moisture transport suggest similar conditions for the secondary launch opportunity on Monday morning. Increased shower activity associated with the Gulf Stream during the Monday morning window may slightly elevate the potential for Cumulus and Lightning Rule violations. A shift in this pattern is anticipated to provide more favorable conditions for the tertiary backup launch day.

Launch Day	Probability of Violating Weather Constraints <sup>1</sup>							
	30%	Primary Concerns: Cumulus Cloud Rule, Lightning Rule						
	Weather Conditions					Additional Risk Criteria <sup>2</sup>		
	Weather/Visibility:	None / 7 mi.	Type	Coverage	Base (ft)	Tops (ft)	Upper-Level Wind Shear:	Low
	Temp/Humidity:	81°F / 91%	Cumulus	Few	2,000	25,000	Booster Recovery Weather:	Mod
24-Hour Delay	Liftoff Winds (200'):	240° 12- 18 mph	Cirrus	Scattered	30,000	35,000	Solar Activity:	Low
	Probability of Violating Weather Constraints							
	40%	Primary Concerns: Cumulus Cloud Rule, Lightning Rule						
	Weather Conditions					Additional Risk Criteria		
	Weather/Visibility:	Showers / 7 mi.	Type	Coverage	Base (ft)	Tops (ft)	Upper-Level Wind Shear:	Low
48-Hour Delay	Temp/Humidity:	81°F / 91%	Cumulus	Scattered	2,000	25,000	Booster Recovery Weather:	Low-Mod
	Liftoff Winds (200'):	230° 10 - 15 mph	Cirrus	Scattered	30,000	35,000	Solar Activity:	Low
	Probability of Violating Weather Constraints							
	20%	Primary Concerns: Cumulus Cloud Rule						
	Weather Conditions					Additional Risk Criteria		
Not	Weather/Visibility:	None / 7 mi.	Type	Coverage	Base (ft)	Tops (ft)	Upper-Level Wind Shear:	Low
	Temp/Humidity:	80°F / 87%	Cumulus	Few	3,000	12,000	Booster Recovery Weather:	Low
	Liftoff Winds (200'):	240° 10 - 15 mph					Solar Activity:	Low
	1. The Probability of Violation (PoV) is the chance of a local safety or customer constraint violation occurring any random time during the launch window.							
	2. Additional Risk Criteria, which are not included in the PoV, are mission-specific constraints that may not include all phenomena within each risk factor.							
See Launch FAQ <a href="https://45thweathersquadron.nebula.spaceforce.mil/pages/launchForecastSupport.html">https://45thweathersquadron.nebula.spaceforce.mil/pages/launchForecastSupport.html</a> for more information								
Next Forecast Will Be Issued		As Required						