



Memorandum For Record

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NTSB Accident Number: ERA21FA346

The park brake knob was located on the tilt panel forward of the pilot's seat adjacent to the knee of the person sitting in the seat and was not visible to the right seat occupant. Per the airplane Operating Manual, the brakes are set by applying the brakes in the normal manner, then pulling out the PARK BRAKE handle on the left lower side of the tilt panel (Figure 1). That action mechanically actuates the parking brake valve, trapping fluid in the brakes. The parking brake is released by pushing in the PARK BRAKE handle (Figure 2).

Per the airplane Operating Manual, the airplane was equipped with a crew alerting system (CAS) that displayed messages on either the pilot multi-function display (MFD) or co-pilot MFD depending on the avionics switch position. The CAS system did not incorporate parking brake valve position as part of its activation logic, nor was the parking brake not fully released indicated or annunciated in the cockpit. A red "No Takeoff" warning CAS message would display (Figure 3) if the throttles were advanced beyond the CLB or climb setting, and thrust reversers were not deployed and one or more of the following conditions existed accompanied by a "No takeoff aural warning."

- Flaps not within takeoff range ($<7^{\circ}$ or $>15^{\circ}$)
- Elevator out of Trim
- Horizontal stabilizer is out of takeoff position



Figure 1: Digital Photograph From Textron Aviation. View of the Park Brake Handle in Pulled Position of an Exemplar Airplane.



Figure 2: Digital Photograph From Textron Aviation. View of the Park Brake Handle in the Released Position of an Exemplar Airplane.

NO TAKEOFF	Illuminates if the throttles are advanced beyond the CLB (climb) setting and thrust reversers not deployed and one or more of the following conditions exist: • Flaps not within takeoff range ($<7^{\circ}$ or $>15^{\circ}$) • Elevator out of trim • Horizontal stabilizer is out of takeoff position	"No takeoff"
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Figure 3: Excerpt From Operating Manual Showing What Conditions and What Aural Warning System Alarm would Sound if the Conditions were Met.