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Subject: ERA21FA194

Who: Peter Basile – Textron Aviation – Air Safety Investigator

Mr. Basile completed the performance calculations for the above-mentioned accident. Below are the calculations:

At 0850 EDT, the METAR at Cecil Field (KVQQ), Jacksonville, FL, approximately 11 NM northeast of the accident site, was: wind, calm; visibility, 10 SM; sky condition, clear; temperature, 19°C; dew point, 18°C; altimeter setting, 30.14 inHg. Per the airstrip owner's family, the wind was estimated to be an approximately 15-knot tailwind around the time of the accident.

Per the Beechcraft C23 Sundowner Pilot's Operating Handbook (POH), the aircraft takeoff speeds for safe operation are 65 knots at "lift-off," and 74 knots at "50 ft." The "Take-off Distance – Grass Surface" performance chart was interpolated for the associated conditions of 19°C and 150'. The estimated ground roll with a 0 knot wind component was 1,285' and the distance to clear a 50' obstacle was 2,151'. Note: The takeoff distance performance chart did not include a tailwind component multiplier penalty.

A typical tailwind performance multiplier would be to increase the performance chart distance 10% for every 2 knots of tailwind. Thus, a tailwind of 15 knots would increase the ground roll by 75%. Therefore, $1,285' + 75\% (964') = 2,249'$ of ground roll. The distance to clear a 50' obstacle would be $2,151' + 75\% (1,613') = 3,764'$.