

From: [Prince, Daniel \(FAA\)](#)
To: [Gallo Mitchell](#)
Subject: FW: N75634
Date: Thursday, October 29, 2020 5:49:17 AM

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Mitch,

I am forwarding the email from the Flight School chief instructor about their theory and flight test on the accident with N75634.

Best Regards,
Dan

Daniel Prince
Aviation Safety
Aviation Safety Inspector, PMI
Federal Aviation Administration, SW-09
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In our continuing effort to improve the quality of service to our stakeholders, Flight Standards Service would appreciate any feedback you may have on our services. Please [click here](#) to provide feedback.

From: Bobby Doss 
Sent: Wednesday, October 28, 2020 2:53 PM
To: Prince, Daniel (FAA) 
Subject: Re: N75634

Here is David's documented response to his tests.

After discussions with fellow professional flight instructors, A hypothesis was discussed regarding possible reasons/causes for an aircraft to immediately begin a turn and roll to the left immediately after rotation and liftoff.

Scenario: A student pilot performing their 2nd supervised solo, reacted to an apparent flight control issue that occurred immediately after rotation and liftoff from the runway. The aircraft immediately began a turn to the left. The student felt the aircraft was yawing strongly to the left and reacted with full right rudder. The student believed the aircraft to be damaged, decided to execute an immediate off field landing in an open area next to the

runway. The student had performed 2 successful full stop landings and taxi-backs. The accident occurred during the student's 3rd takeoff.

Question: What if a Cessna 172 was not appropriately configured after a landing during a taxi-back to the runway for immediate departure? What if the aircraft's trim system remained set for the previous normal landing?

Test: Another flight instructor and I proposed to make a normal takeoff, remain in the pattern, and make a normal landing. I flew the aircraft for a normal landing, configured for full flaps and trimmed for a Vref of 65kts. We would make a full stop landing and taxi-back to the departure runway for another takeoff. After completion of the full stop and taxiing clear of the runway, We completed an After-Landing Checklist except for retrimming the pitch trim. The trim remained in the setting for the previous landing. What would the aircraft do upon takeoff in this configuration?

Results: Power was smoothly applied for takeoff. Normal acceleration to Vr was expected. At Vr, the aircraft rotated on its own, I did not apply back pressure on the yoke. The aircraft naturally lifted off into ground effect. At 70 KIAS, the nose immediately pitched to 20-25 deg on the attitude indicator. Immediately, the aircraft rolled slightly and yawed excessively to the left (I expected this due to Left Turning Tendencies). I allowed the aircraft to roll and yaw to the left but recovered the aircraft when the ground track was approximately 45 deg off of runway heading. I recovered with pitch down and yaw control with right rudder until coordinated flight was re-established.

2 more repeated Tests were performed to establish a "control" theory. All 3 takeoff tests reacted very similarly. All 3 tests required a strong push on the yoke for pitch down and strong right rudder to re-establish coordinated flight.

My professional opinion: I think the aircraft was not configured correctly after the student's 2nd landing. Perhaps the trim remained in the setting for full flaps / published Vref landing. This setting is a very nose up setting for a no flaps, normal takeoff. I think the aircraft over-rotated, surprising the student. Now expectation bias has entered the student's mind set. Expectation Bias in such that the student thinks the aircraft is broken, experiencing a flight control issue. The bias was confirmed when the student applied full right rudder to re-establish coordination. These split second decisions were performed at probably less than 200 feet above the runway. Once the student re-established control (in his mind), combined with his belief the aircraft was dangerously broken, he decided to land the aircraft in the nearest open field.

Bobby Doss

United Flight Systems

From: Dan Prince [REDACTED]

Date: Thursday, October 22, 2020 at 3:33 PM

To: Bobby Doss [REDACTED]

Subject: RE: N75634

No problem. It's definitely relevant and bears further investigation.

Thanks,
Dan

Daniel Prince