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Touch & Goes

BY MARK HENSHALL

HAVE WE BEEN TEACHING IT WRONG?

EDITOR'S NOTE: THE FOLLOWING COMMENTARY (EDITED FOR LENGTH)

**WAS PROVIDED IN RESPONSE TO AN ONLINE FLIGHT INSTRUCTOR
REPORT ARTICLE (AIRSAFETYINSTITUTE.ORG/TOUCHANDGOES)**



FROM WHAT I CAN TELL, MOST FLIGHT INSTRUCTORS TEACH TOUCH AND GOES IN THIS SEQUENCE: AFTER TOUCHING DOWN, RAISE THE FLAPS, TURN CARBURETOR HEAT OFF, ADD POWER, AND GO.

It seems the rationale for this sequence is the notion that you are doing a normal landing followed by a normal takeoff, and a normal takeoff should only be attempted after first configuring the airplane for takeoff.

On the face of it, this seems to make sense. But I now teach my students a different sequence. Add power *first*,

then clean up the flaps to an appropriate takeoff setting, then turn off carb heat. The reason I teach it this way is that a touch and go is not really a normal landing followed by a normal takeoff—it is actually a rejected landing, done intentionally. Is there any official guidance to support this sequence? It can be found in the practical test standards (PTS).

The PTS, under “Areas of Operation,” does not specifically list touch and goes. But it does list the following: “Task L: Go-Around/Rejected Landing (ASEL and ASER).” Notice that for the purposes of evaluating this skill no distinction is made between a go-around and a rejected landing. They are lumped together. They are really the same maneuver; the only difference is *when* the maneuver is initiated. In the case of a rejected landing you have already touched down when the decision is made to reject the landing, perhaps because an animal or a vehicle has suddenly appeared on the runway. Notice the published sequence for this task in the PTS:



**THE TOP PRIORITY IS TO GET THE AIRPLANE
MOVING UP AND CLIMBING AS QUICKLY
AS POSSIBLE, AND POWER IS THE BIGGEST
CONTRIBUTOR TO THIS OBJECTIVE.**



**...A TOUCH AND GO IS NOT REALLY A NORMAL LANDING
FOLLOWED BY A NORMAL TAKEOFF—IT IS ACTUALLY A REJECTED
LANDING, DONE INTENTIONALLY.**

“3. Applies takeoff power immediately and transitions to climb pitch attitude for V_X or V_Y as appropriate +10/-5 knots and/or appropriate pitch attitude.

4. Retracts the flaps, as appropriate.

5. Retracts the landing gear, if appropriate, after a positive rate of climb is established.”

What is the reason for requiring this sequence when either doing a go-around or a rejected landing? The top priority is to get the airplane moving up and climbing as quickly as possible, and power is the biggest contributor to this objective. Drag from the flaps is the second largest factor that affects the ability of the airplane to climb. Carb

heat certainly affects the climb rate as well, but it is the smallest of the three factors so I teach students to do this last.

To understand the logic behind why the FAA has mandated that you do a rejected landing in this sequence, think again about the reasons why you might do a rejected landing. If, for instance, an airport maintenance vehicle has unexpectedly pulled out onto the runway while you are rolling out, do you really want to take the time to reach over to retract the flaps and turn off the carb heat while the airplane is decelerating and closing the distance between you and the obstacle? NO!! The first priority is to accelerate so the airplane is capable of climbing, assuming you

have enough distance to get the airplane airborne again and clear the obstacle. This is a judgment call to be sure, but using the proper sequence of events may make the difference between having enough distance to clear the obstacle and not.

Some airplanes, such as a Cessna 172 with 40 degrees of flaps, can require very strong pitch forces when applying full power with the flaps fully extended. The nose wants to rise sharply and you need considerable forward pressure on the yoke to prevent this while the flaps are retracting and you get the aircraft re-trimmed. Many instructors worry about the high workload in this phase of transition and fear a student might lose control. Or they fear that the airplane will



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settle to the ground again during flap retraction. For these reasons, some instructors even refuse to do touch and goes at all with their students or they prohibit students from doing them solo.

These are some very valid concerns. But stop and think: Doesn't a go-around involve the same dynamics? Have a look at FAR 61.87, "Solo requirements for student pilots." Under "(d) Maneuvers and procedures for pre-solo flight training in a single-engine airplane," it lists go-arounds as a required maneuver to be taught prior to solo. A little later on students are taught soft-field takeoffs—where you deliberately force the airplane into the air below its normal flying speed and then keep it in ground effect while accelerating, refusing to allow the airplane to settle back to the runway. What do we learn from this? We learn that there is clearly an expectation for student

pilots to be fully competent in these maneuvers. They need the skills to maintain positive control throughout a go-around or rejected landing whether done intentionally or unexpectedly.

If you have serious doubts that your student can keep control of the airplane in these situations, give them further training before signing them off for solo privileges. Remember the top priority: Get the airplane going up. This means add power first.

Mark Henshall is a CFII and MEI with 1,400 hours, and 600 hours of dual instruction given.

