## Richard W Rochfort

**From:** noreply@mmopa.net
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**To:** rochfort@verizon.net
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Reply-To: noreply@mmopa.net
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Date: Thu, 18 Dec 2008 12:34:10 -0600 (CST)

Posted By: rrochfort (Dick Rochfort)

Hi all,

Thanks for the kind words Dave, but the procedure I use is right out of the AIM (7-5-7). I simply apply it and teach it to help my customers gain proficiency and confidence in their aircraft.

Chad, I use short field technique whenever I think it will be close on the 60 knot rule (see the link below). I use 10 degrees of flaps for normal departures to ensure that the aircraft leaves the ground with a positive rate of climb in the shortest ground roll consistent with safety.

A few months back an article on missed approaches appeared in the MMOPA Magazine in which the author spoke of missed approaches as fear provoking, scary, and dreaded. While these may not have been his exact words, I came away with the feeling that he thinks most pilots think like he does about missed approaches. We know that, procedurally, the missed approach conducted in low weather is not a whole lot different from a VFR take-off, except it is begun from a safe altitude! Why then does one procedure produce angst for some pilots? I proffer that it results from noble distractions; that is, a tendency for us to rely on working knowledge rather than studied procedure.

High performance aircraft are usually flown procedurally with respect to what is called "second segment climb". Second segment climb starts when the aircraft is gear up with flaps/slats in any certified takeoff position (normally between 50 ft and 400 ft AGL). Each airport in the US served by an instrument approach requires a minimum climb gradient of 200 Ft per nautical mile, unless another higher rate is published. While this is not a lot, it stands to reason, the sooner one gets through the second segment climb, the better one’s fourth segment climb performance will be (the third segment is the cleanup). This requirement is regulatory for multi-engine transport aircraft; however, it is particularly important for any aircraft when dealing with high density altitude operations with distant obstacles (like Denver) or noise abatement procedures (like SOCAL). In the interest of using proven procedures consistently, we should endeavor to get through the second segment climb as s  oon as practicable. I like to think of it as a procedural y andale!

As a full-time flight instructor dedicated to the PA46, I observe a lot of PA46 pilots. One of the things I frequently observe on takeoff is a pilot’s willingness to try to do too much in the way of aviation, communication and navigation, in no particular order, prior to the completion of the third segment climb (clean, trimmed & autopilot ON).

Single pilot Part 91 flying is risky enough, but it can be made safer by making a concerted effort to eliminating real world distractions, many of which are simply bad habits. If we train and operate procedurally, we can do the right things in the right order consistently.

Prior to clearing close-in obstacles, there is only one thing that should have your attention: pitchnpower. Yes, I consider them one thing.

I also consider that while below the close-in obstacles anything else is a “noble distraction”; that is something that might seem very important at the time, but which is actually the proverbial knife in a gun fight. Following a well thought out procedure consistently without distraction is critical.

With respect to the short field departure, after briefing the take-off (including engine out options), I complete a thorough run-up and a runway environment flow. I use the POH recommended 20 degrees of flaps. I then taxi into position, hold the toe brakes, and set full power. I use the same “callouts” on the short field takeoff roll as I do on a runway of normal length and they are as follows:

  Airspeed alive

  Gauges green

  Annunciator clear

  60 knots – crosscheck (this callout should occur at or prior to the ½ way point; typically before the 1000 foot mark)

  80 knots – rotate and pitch for 12 degrees nose up (Vx) (visually this is one dot above the 10 degree bar on the attitude indicator)

  Positive rate and clear of obstacles - lower the nose to 8 degrees nose up (Vy)

  Flaps up to 10 degrees ( cinco x 2 - no sink here)

  Gear up

  Passing 100 knots - Flaps up (do not look away from the attitude indicator for more than a quick glance to ensure the pitch attitude remains positive and correct.

  Trim for the D (flight director) bars

  Autopilot on - Verify “D bars” in the blue and aircraft performing as commanded.

Here is a one minute video which illustrates these callouts.

http://www.rwrpilottraining.com/Takeoff_Callouts.wmv

and a short article on short field techniques which describes the 60 knot rule in detail:

http://www.rwrpilottraining.com/Im_Glad_You_Asked/Short%20Field%20Takeoff%20Procedure.pdf

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Regards,

Dick Rochfort

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410-435-3333

mail@rwrpilottraining.com

www.rwrpilottraining.com

Fax 410-435-7311

Richard W Rochfort, ATP, MCFI, CFII, MEI

6031 Bellona Avenue

Baltimore, Maryland 21212-2923

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