

Crosswind Takeoffs and Landings

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Remember the old adage “March goes in like a lion and out like a lamb?” As great as that sounds, it often is not exactly true. The entire spring season can be extremely windy. An added bonus is it may be gusty as well. For a general aviation pilot this is time to practice crosswind takeoffs and landings. With all this wind, it makes every pilot focus during two of the most critical phases of any flight—the takeoff and the landing.

The first thing that every pilot should be aware of is what his or her personal limitations are as an aviator. Two items to think about when assessing your skill level are the flight time in the aircraft you will be flying and your total flight time overall. If you are not completely comfortable in the aircraft take a pilot friend who is familiar with the aircraft or a certified instructor. Both will be able to offer valuable insights into helping you achieve impeccable crosswind takeoffs and landings.

Crosswind Takeoffs

Most of the time a pilot will be taking off or landing with a crosswind; How often is the wind right down the pipe? So let's go over some of the key techniques for performing a crosswind takeoff. Always remember that at the beginning of any takeoff, the aileron control will usually be held INTO the crosswind and should be held FULL into that crosswind. Keep full aileron in and use the rudder pedals to keep the aircraft on the centerline. As the aircraft accelerates, the controls become more effective, and less aileron control may be required. Once you reach your rotation speed, simultaneously start to roll out your crosswind correction (as necessary) and pull back on your controls to lift off. You will need to continue to use the rudder to keep the longitudinal axis parallel with the runway centerline. At the same time, you may need to hold a small bank angle that will keep you over the center of the runway. Once you are assured that the aircraft will not settle back down onto the runway, you can neutralize the bank and establish a crab into the wind. A crab is where the aircraft's wings are level, and the aircraft is pointed into the direction of the wind. During a crab the aircraft's ground track will be different than the heading of the aircraft. One of the most common errors that I see with newer pilots when taking off or landing with a crosswind is that they forget to use their feet. Remember that the rudder is there to help you. Whether it is to stay on the centerline or maintain coordination, do not forget to 'dance' on the pedals.

Crosswind Landings

For crosswind approaches and landings there are two methods that people generally use—the crab method or the wing-low (sideslip) method. For many pilots, the crab method is preferred on final approach because it is easier to maintain, however good judgment is required in order to know when to take out the crab and change to the wing-low method when landing. In doing this

combination of landing methods, a pilot is able to maintain the centerline ground track as well as keep the longitudinal axis aligned with the runway.

Practicing on an extended final approach can help a pilot determine the rate of drift that is occurring and help establish the proper amount of crab. If the decision is made to use the sideslip method for the entire final approach, remember that in doing so will create a turning force, essentially turning the aircraft from its final approach path. Using the appropriate amount of opposite rudder will help stop the airplane from turning in the direction that the wing is lowered.

In some cases, there may not be enough rudder for the aircraft to stay lined up with the centerline because of the strength of the crosswind. In this instance, the wind might exceed the demonstrated performance of the airplane and unless you would like to be a test pilot that day, finding out if your aircraft really will handle a higher crosswind component, it would probably be in your best interest to choose a different runway that is more favorable with the winds. If landing at a smaller airport with only one runway available, have a backup plan to use an available alternate airport. Remember, a go-around is always an option!

Just because you have flown the entire final approach, you still have to land the airplane... it will not land itself. When flaring just before touchdown, remember that the wind has not disappeared, however the airspeed is slowly lowering and with that, your controls will not be as effective as they were on final approach. Make sure to gradually increase the deflection of the rudder and ailerons to keep a suitable amount of drift correction and keep the upwind wing down throughout the roundout.

Just prior to touching down on the ground, the cross-wind method used will determine how you correct for the wind during the landing flare. If the crab method is used, the crab has to be removed first just before touchdown or you will land with a side load. If you are using the sideslip method, make sure to keep the upwind wing down and land on that tire first. As the airflow over the wings weakens, the downwind tire will naturally settle on the ground.

In some cases, pilots will utilize both cross-wind methods during final approach and landing. Many pilots will use the crab method while further out on final and then transition into a side-slip at about a quarter mile final. It is important to practice and see what method works best for you and your aircraft. Remember to consult your aircraft POH and flight instructor for what technique suits you.

After Landing

Now that you have actually landed the plane, make sure that you do not forget that the wind has not stopped. Always remember to have in proper wind correction, especially when making turns to get back to the ramp. Something that I always tell my students to help them remember is “dive away and climb into” meaning if the wind is behind you dive away from it—push the controls forward

and turn in the opposite direction of the wind. If you are taxiing with a headwind, make sure you climb into the wind—pull the controls towards your body and turn into the wind. Another thing that might help newer pilots or even seasoned veterans is to “bug” the general direction of the wind with the heading bug. When you do this, you always see where the wind is blowing from and when you make a turn you can instantly correct for the change. I have been a flight instructor for a couple of years now and I still bug the wind direction when I go flying. If you always remember your crosswind correction, even with calm days you will never forget it and will not be one of the statistics that the “wind caught them off guard and that is why they did that ground loop.”

In reality though, the only way you get better at something is to practice it, so get out there and start doing some crosswind takeoffs and landings. Practice different procedures and go with someone who is excellent at performing crosswind takeoffs and landings. They might be able to give you more insight into what you can improve and what techniques you have mastered already. Remember that safety is the key and flight instructors are out there to help you in the areas of flight training that are more challenging.