
The Horizontal Roll

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Most aerobatic maneuvers are made up from three basic maneuvers. They are straight and level flight, the loop and the roll. Since we've already learned the first two maneuvers now it's time to learn about the horizontal roll.

First of all what is a roll. A roll is where the airplane rotates around its horizontal axis. Rolls can be performed both upwind and downwind as well as rolling to the left or to the right. The choice is yours. Another factor in a roll is what is called the roll rate. Roll rate is speed at which the airplane spins around its horizontal axis. This is primarily controlled by the amount of deflection you have in your ailerons. The more deflection you have the faster the roll rate. The roll rate that you want to work with should be approximately 1 revolution per 1 to 2 seconds. Now let's learn how to do a right roll.

In the beginning for learning purposes we will start the roll by pitching the nose upward. This will keep the plane from losing too much altitude during the maneuver. However a horizontal roll should be started and finished from straight and level flight. Let's get started.

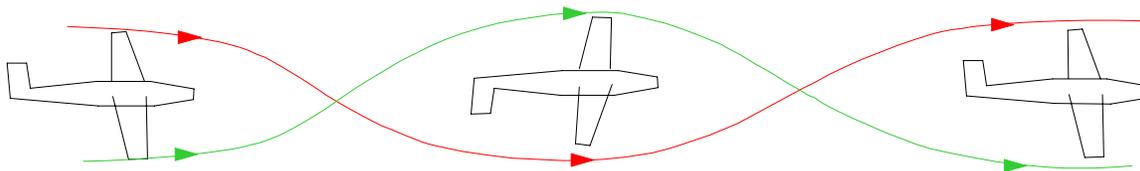


Figure 1 The Horizontal Roll

Starting at a safe altitude and in straight and level flight as the plane approaches you pull back slightly on the elevator stick to pitch the nose up approximately 5 degrees and release the elevator stick to neutral. Immediately move and hold the aileron stick to the right. Watch the plane as it rotates around its horizontal axis. When the plane makes one complete revolution release the aileron stick back to neutral and fly out at straight and level flight. Congratulations, you're on your way to learning a roll. Continue to practice this until you're confident in rolling both directions.

Remember earlier I mentioned for learning purposes we would pitch the nose up to start our roll. Well now it's time to learn how to roll from straight and level flight. Start just like before except do not pitch the nose of the plane up. Instead start by putting in and holding right aileron. Now here's the tricky part, watch as the plane rotates and when it reaches the inverted stage of the roll bump in and then release a small amount of DOWN elevator while continuing to hold in aileron. When the plane reaches one complete revolution release the aileron stick back to neutral and fly out at straight and level. The purpose of the down elevator is to keep the plane level while rolling. There you have it!

Just like before, continue to practice this maneuver until you've mastered your rolls in both directions. Remember, always fly at least 2 mistakes high when you are trying to learn something new. This accomplishes two things. First, it allows you enough time to regroup in case you get confused, and second, it keeps you from re-kitting your favorite plane!

Next: The Immelmann Turn