

## The Spin

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According to the AMA rule book, "All spins begin and are ended by horizontal flight. In order to accomplish a spin, the model must be stalled. The entry should be flown in a near horizontal path with the nose high attitude increasing as the speed decreases. The nose then drops, as the model stalls. Simultaneously, the wing drops in the direction of the spin."

In other words, fly straight and level, feed in some up elevator so that your model flies slower and slower and just before it stalls, hold in full up elevator and full rudder. The wing should drop, you should nose down and enter your spin. If you find that you can't spin with rudder and elevator only, next time add ailerons and that should do the trick. If you don't enter a spin, you will be in a spiral dive, which is NOT a spin. Best to try your first spins high enough to have plenty of room to recover, but low enough to be able to see what's going on.

Some very stable airplanes won't spin. Sometimes you can correct this, sometimes not. Some airplanes won't spin because they are balanced too far forward. If you try a spin and all you get is a large downward spiral, you might have too much nose weight. Try taking out a little and see if that helps. You might find that you have been flying nose heavy all these years. Go at this until you have reached the rearward most balance point of your aircraft - and if you still can't spin, you might find that don't have enough rudder throw, or that your rudder is too small.

The first time you try to spin, do it with rudder and elevator only. If that doesn't work, try rudder, elevator and ailerons. If you still can't get your bird to spin, then see if you have too much nose weight. Approach your spin in that order. If you STILL can't spin then probably the airplane is just too stable. Many full-sized aircraft have the spin built out of them as much as possible for obvious reasons. It must be said that some airplanes won't spin no matter what you do.

Let's say that you have easily entered a spin. How do you get out of it? Simple. Just let go of your sticks and neutralize all the controls. Remember that the spin is a stalled condition and when you want to end it, you must get the wings flying again. You need to gain airspeed, which is why it's very important to get rid of your up elevator. If your CofG is too far aft, you might even need to feed in a bit of DOWN, but that's quite rare. Normally, when you stop the elevator and rudder (and aileron), your airplane will abruptly stop rotating; it's just that easy with most airplanes.

The spin has many advantages in aerobatics, because it can be used in lots of different ways. You can best use it any time you end up flying slowly (for example, after an Immelmann), because it requires minimum airspeed. It can be used as a turnaround maneuver or not, and you can exit the spin to level flight inverted or right side up. You will tend to have quite a bit of air speed when exiting the spin, so you can immediately go right into any number of maneuvers requiring faster airspeed (such as a loop, roll, Cuban-8, etc.).

More than an aerobatic maneuver, the spin can help you lose height safely whenever necessary. Perhaps we should follow the lead of our full-sized sister ships and learn

how to enter and exit a spin; this knowledge might well save you an airplane now and then!

