

FOUNDATIONS OF FLIGHT | SIT-TO-SIT CARTWHEEL



Brought to you by AXIS Flight School Instructor Niklas Daniel at Skydive Arizona in Eloy. Photos by Brianne Thompson.

Purpose

- ▶ Increase balance in the head-up orientation
- ▶ Learn to fly through multiple axes
- ▶ Learn an advanced, over-the-head transition

Prerequisites

- ▶ Proficiency in the sit-fly-neutral position
- ▶ Ability to stay balanced during range-of-motion drills (see “Foundations of Flight—Head-Up Range-of-Motion Drills,” March *Parachutist*)

▶ Ability to perform sit-to-sit front flips and backflips

▶ Ability to perform a belly-to-belly barrel roll (helps with visuals and encourages starting the maneuver with the lower body)

Execution

Begin in a neutral and comfortable sit-fly position with a heading perpendicular to the line of flight. Pick a point on the horizon; this will be your defined heading for the maneuver. After each attempt, check your heading and altitude.

From your neutral position, begin the move by extending a leg to your side, toward the horizon. (If you want to rotate to your right, or clockwise, extend your left leg.) Focus on the amount of air pressure you feel on the inside surface of the thigh and shin of the extended leg. The more you extend that leg, the more powerful your rotation will be.

As your extended (left) leg begins to rise, collapse your right arm by moving your elbow in toward your torso and back slightly behind your ribcage (like a chicken wing). This will keep your torso straight throughout the transition and allow you to

fly over your shoulder and the edge of your body. Continue focusing on your reference point (don't drop your eyes) and keep your torso squared off with the horizon. Allow your chest to cave in slightly as your legs fly over your head, and maintain a straight spine. Once your legs are above your head, bring them back to a neutral sit-fly position. Continue to keep your torso squared off with your reference point.

As you near the last 90 degrees of the maneuver, produce a proud chest, and use your arms for lateral stability if needed. Finish in a solid sit-fly position with your heels firmly pressed into the relative wind.

Helpful Hints

Avoid initiating a cartwheel by throwing one arm across your body. A 90-degree heading change is the symptom of an upper-body initiation. Prevent this by allowing your legs to do most of the work, and do not take your eyes off your reference point. As you become more proficient, you will be able to slow the rotation of the maneuver and add more fall-rate control.