

FOUNDATIONS OF FLIGHT

HEAD-UP NEUTRAL POSITION

AXIS
Flight School



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

Your fall rate increases when flying in a vertical orientation, and this will reduce your available working time, so give yourself extra time to slow down before your planned deployment altitude. Make sure you have provided adequate exit separation from other jumpers based on the aircraft's ground speed, and be sure to face perpendicularly to the line of flight while in freefall.

Prerequisites

- ▶ Proficiency in belly- and back-flying
- ▶ Proficiency at transitioning over the legs between the belly- and back-fly positions
- ▶ A freestyle-friendly rig (fits snugly, components secure)
- ▶ An audible altimeter in addition to a visual altimeter

Flying head up can be challenging, as it is aerodynamically unstable. The flyer cannot merely rely on rigidly holding a shape to maintain stability. The jumper must be constantly proactive in maintaining the equilibrium of this position by adapting to variations in fall rate, the body's shape in the air and weight distribution. Unlike other neutral flying positions, in which the primary flying surfaces are located above the body's center of gravity (on the trailing side of the relative wind), the primary head-up flying surfaces are below the center of gravity, which makes the position prone to falling over. It is possible to maintain the sit-fly position by hanging on the wind with your arms, but if you want to be mobile and take grips, you have to rely more on your legs for stability.

Head-Up Neutral Position Check List

- ▶ Head level, as though suspended by an invisible line from the crown of the head, with neck muscles relaxed
- ▶ Shoulders dropped (away from ears)



- ▶ Rib cage tilted back slightly to produce a proud chest
- ▶ Spine straight (nose aligned vertically with belly button)
- ▶ Elbows around shoulder level with the inside of the biceps exposed to the relative wind
- ▶ Pelvis tilted forward (stretch out the abdominal muscles and point tailbone aftward)
- ▶ Knees shoulder-width apart and oriented slightly lower than hips; press heels firmly into the relative wind and flex your toes toward your knees
- ▶ Allow your feet to roll outward (soles pointed out) so the relative wind makes contact with the inside of your shins and thighs

The back-fly and sit-fly positions share similar leg, waist and torso mechanics, which is why jumpers must first learn to back-fly before attempting to sit-fly. The arm mechanics of head-up flying resemble those of belly flying.

Helpful Hint

Widening your leg position and keeping your shins vertically aligned does not provide a stable base of support. This merely



causes the hip flexors to lock up, pinning the waist in place and compromising stability. Seek stability with your heels and shins to keep the waist as loose as possible. Avoid pushing down on the relative wind with your hands.



To view the instructional video, use the QR code to the left or visit the Foundations of Flight page at parachutistonline.com.