

Thinking *on* Your Feet

—Improving Your Sit-Fly

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Whether you are just learning to sit-fly or have simply hit a plateau in your learning curve, fine-tuning your basic head-up body position is worth the time. Many jumpers, even those for whom sit-flying initially came easily, find themselves stuck in place or unstable if they try to move from a neutral position to drive forward or take a dock. This article explains the basic mechanics of the sit orientation and offers solutions to common problems.

If you've never tried sit-flying before, the first thing you'll need to do is make sure that the gear you are using is "freefly friendly" and can handle the excess stress produced by higher freefall speeds—talk to a local rigger if you are unsure whether your rig is suitable. Keep in mind that your freefall speed will be much faster in a sit than on your belly, and that you'll cover great horizontal and vertical distances in a short amount of time. Staying altitude aware is critical, so jumping with both an audible and visual altimeter is highly recommended.

Moving to a Sit

When learning to sit-fly, it helps to think about your body as being comprised of two major flying surfaces: the upper and lower body. Your center of gravity is located at the hips, where the two flying surfaces connect. To move to a sit (which you may do from either your belly or your back), look at the horizon and stretch out both arms to present more surface area to the relative wind, creating lift with the upper body. While spreading your arms, bring both knees in toward your chest to decrease the surface area of your legs. Keep your knees wide for stability while simultaneously driving your heels down. By flying your upper and lower body in opposing directions—straight up and straight down—the rotation will take place automatically. Try not to force it with too much muscle; you'll lose control over the transition.

Common mistake: when trying to transition from back-flying, doing a "sit-up" in an attempt to rotate over the legs.



Getting Vertical: Belly to Sit



Getting Vertical: Back to Sit



Neutral Position: Front View



Neutral Position: Side View

The Neutral Position

Feet

Once you've transitioned to a sit-fly, pay close attention to your feet. Your heels should be the part of your body to make contact with the relative wind. Ensure that your feet are parallel to each other, your toes are up and heels are pushing down, and keep your feet in front of the line of your torso. To add stability to the system, make sure that your feet do not touch—they should be at shoulder width or more apart.

Common mistake: flying with the heels too close to the butt.

Shins

Your shinbones should be either straight up and down or tilted in, creating the sides of a trapezoid shape (see photo, above). Exposing the inside of your shins to the airflow will add to your overall stability. Flying this way will also slow down your freefall speed a little, and can make level control, docking and other movements easier.

Common mistake: presenting the outside of the shins to the airflow.

Knees

Keeping your knees at shoulder width will help you to maintain stability and mobility. If you spread your legs too wide (at or near the maximum width that your hip flexors will allow) you will create rigidity at your body's center of gravity (the hips) and your range of motion will be very limited. Your position should be relaxed and allow you to move with minimal effort.

Common mistake: flying with the knees too far apart, which may present the outside of the shins to the relative wind.

Thighs and Hips

In order to have a solid, neutral position in a sit, you must maintain a 90-degree bend at the hips. To achieve this, pay attention to the

alignment of your hips and knees—your goal is to have them aligned so that your thighs are parallel to the ground.

Common mistake: having the hips too high or low relative to the knees, causing the flyer to have to compensate with the arms.

Spine

Keep your spine straight. Your lower back (from your sacrum to the bottom of your ribcage) should remain vertical, as if you are sitting straight up in a chair. Tilt your ribcage back just slightly—the goal is to expose your shoulder blades to the wind to maintain lift on your upper back.

Common mistake: slouching, letting the chest sink toward the stomach.

Arms and Shoulders

New sit-flyers commonly use their arms exclusively when attempting to move, particularly turn, just as most jumpers do when they are learning to fly on their bellies. However, your objective in any orientation of flight should be to let your legs do most of the work. So keep your shoulders relaxed and arms bent 90 degrees at the elbow when you want to apply drive—this allows you to take docks, signal a friend or (most importantly) geek the camera flyer.

Don't roll your shoulders forward. Even if your thighs stay parallel to the ground, you will lose the 90-degree bend at your hips.

Common mistake: swinging the arms straight behind the back to fight the sensation of falling backward.

Head

Maintain the structural integrity of your upper back by looking at the horizon. To aid in this process, think about pulling your chin to the back of your neck (but don't tuck your chin to your chest).

Common mistake: looking down at your legs to check that they are positioned correctly.

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Six Points of Motion

When you are ready to move, in most cases, you'll only need to move a few feet to reach your target. It is very easy to overshoot, or worse, crash into your target. Anybody can "floor the gas pedal," but being able to stop the momentum in a smooth and controlled manner—like braking a car when approaching a stop sign—demonstrates true control. The best way to learn this skill is to start with small drives and work on reliably countering them before you work up to larger ones. To understand fully how inputs work and to feel their effects completely, keep your movements slow and deliberate.



Forward Movement



Backward Movement

1. Forward

Your legs make up about half of your body's surface area and therefore contain a lot of power that you can tap into. By keeping your thighs parallel to the ground and slowly extending your shins forward (i.e. driving your heels forward 2-3 inches), you will generate lift, and therefore movement, from the lower part of your calves.

2. Backward

To travel backward, widen your knees a little bit and lean forward. Hold your knees wide—this will allow air to flow unobstructed to your chest, which will drive you back. Keep your chin up so that you are effectively presenting your chest to the wind.

3. Turning

There are two major ways of turning—using your arms and using your legs. Although your arms can be effective, your goal should eventually be to let your legs do most of the work.

► Arms

While maintaining a neutral upper-body position, move your forearms like teeter-totters, pitching them in opposing directions. Refrain from twisting your spine, and allow the flight surfaces to do all the work. As one hand goes up, the other goes down, at opposing 45-degree angles.

► Legs

Turning with your legs will take very little effort, since they have a lot of surface area. Using your leading leg, drive in the direction you wish to turn by using your heel. It is normal to feel an increase in lift on the inside of the leading leg's shinbone.

4. Fall Rate – Slowing Down

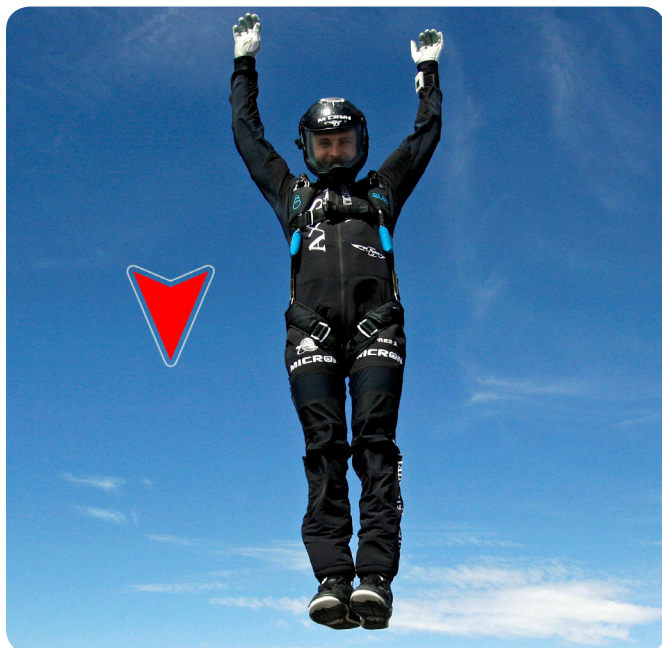
By keeping your knees at shoulder width and moving your feet outward and presenting the inside surface of your shins to the relative wind, you will create more surface area and therefore, lift.

If you need even more lift, you can stretch your arms out and roll your ribcage back. However, this method may create undesired forward drive. You may find it better to back-fly and transition into a sit once you're on level with your target.



Slowing Down

—Improving Your Sit-Fly



Speeding Up

5. Fall Rate – Speeding Up

In order to speed up your descent, you'll need to decrease the surface area you present to the relative wind. Begin by making your shinbones parallel to one another, effectively removing the surface area of your lower legs. Next, bring your arms in slightly or lift them overhead.

To further decrease surface area, stand up, which effectively removes the surface area of your thighs from the equation. Flying in a stand is simply an advanced form of the sit-fly position. The key to maintaining neutrality in this configuration is to keep your feet directly below your hips. A jumper in a full stand can achieve very fast freefall speeds and travel quickly horizontally, so it is best to learn this position in short intervals. With your feet about shoulder-width apart, hold the stand for about five seconds and then return to the sit-fly. As you gain more control, attempt to bring your feet closer together to further reduce lift. Use your arms for stability and heading control.



Side Slide

6. Side Slide

To produce a side slide, fly both your upper and lower body in the same direction. Begin by slowly extending your heel and driving it down in the direction you wish to travel. Use your arms for balance, and add drive with your shoulder blades once you've begun moving (see photo, above).

All-Axis Flight

Vertical flying positions rely heavily on the skills used in horizontal orientations (back and belly flying). In a sit-fly, air flows over the front and back of the body at the same time. If you already have a solid foundation in how to manipulate those surfaces when horizontal, your learning progress in vertical orientations will be accelerated as you combine the two. To become a better body pilot, explore all axes of flight and dismiss the rigid mindset differentiating "belly-flying" from "freeflying." Embrace it all, and push yourself out of your comfort zone; there is no limit to what you can achieve. And as always, have fun; be safe; look cool doing it.

About the Author

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BRIANNE THOMPSON

Troubleshooting

Problem: Backsliding

Possible causes:

- ▶ Heels on butt
- ▶ Leaning forward
- ▶ Looking down
- ▶ Knees too wide

Problem: Driving Forward

Possible causes:

- ▶ Knees below hips
- ▶ Hips thrust too far forward
- ▶ Feet too far forward

Problem: Loss of balance

Possible causes:

- ▶ Presenting outside of legs to the air
- ▶ Feet close together or touching
- ▶ Bending and twisting the spine
- ▶ Reaching down and back below the shoulders

